



Instant Indicia Tutorials

Building online recording sites the Indicia way

Version 1.4

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2 Instant Indicia Course Overview

2.1 Introduction

So, why are we interested in Instant Indicia?

One might like to think of Indicia as a cooking system where instead of making food you are making websites focused on biodiversity and in particular online recording. Indicia includes a collection of “ingredients” that can be used in various supplied “recipes” or even used to make entirely new ones. Following this analogy through, Instant Indicia is a collection of “ready meals” built using the Indicia cooking system that you simply put together to create the meal of your choice. If you don’t like a particular aspect of a ready meal you are stuck with it, or have to cook from scratch. However, in Instant Indicia you can tweak the ready meal just as readily as if you were cooking the meal from the beginning.

More specifically, Instant Indicia is an extension of the Drupal content management system for building online recording websites. Don’t worry if you don’t know what Drupal or a content management system are yet, as the tutorial will explain these concepts in due course. Once installed, the basis of an online recording site can be built simply by selecting from a number of ready-made building blocks and performing a few configuration tasks.

This course introduces you to Instant Indicia and provides an ideal starting point for learning about the underlying Indicia technologies.

2.2 Course Prerequisites

The main parts of this course assume very little specific technical knowledge other than a basic competence with computers, and in particular a willingness to roll your sleeves up and get dirty with regards to the setup of a website. You should also have a basic understanding of biological recording.

However, the parts on installing the warehouse and Instant Indicia do require that you set up a web server and as such assume a reasonable level of competency in system installation and administration.

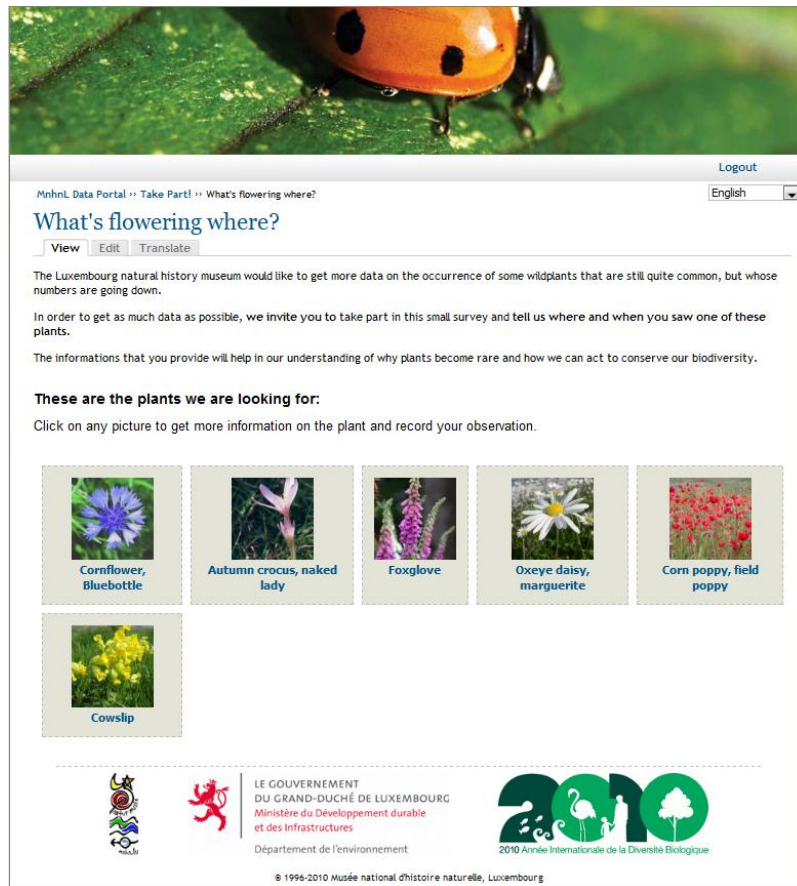
2.3 Examples

Before going any further, let's take a look at some example usages of Indicia to see what sort of things we might be able to build. Firstly, there are forms aimed at engaging the public in biological recording. These tend to be simple forms for capturing a species selected from a limited list of targets, a date and place. Normally the species involved will be very easily identified, or at least some form of identification assistance is provided as in the BBC Breathing Places Ladybird Survey (<http://www.bbc.co.uk/breathingplaces/ladybird-survey>):

The screenshot shows a web form titled "Which species? How many?". At the top is a progress bar with six steps: 1. your details, 2. place seen, 3. sighting details, 4. which species (current step), 5. your photos, and 6. survey submitted. Below the progress bar, the title "Which species? How many?" is followed by instructions: "Narrow down your choice by selecting options in the Interactive Key. To set the number seen, click +/- buttons. For more details about any ladybird, point at its picture." The "Interactive Key" section on the left allows filtering by "Main colour (wing case)" with color swatches (red, black, yellow, brown, green) and "Spot colour" with swatches (white, pink, grey). To the right, six ladybird species are displayed in a 2x3 grid, each with a photo, name, and a count input field with +/- buttons. The species are: Harlequin ladybird f. *succinea*, Harlequin ladybird f. *spectabilis*, Harlequin ladybird f. *conspicua*, 2-spot ladybird f. *typica*, 2-spot ladybird f. *sestupunctata*, and 2-spot ladybird f. *quadrimaculata*.

Despite the fact that this survey is aimed squarely at schools and members of the public who may have little identification skills, the assistance provided ensures reasonable data quality. There is even a sibling ladybird parasite survey also on the BBC Breathing Places site!

Another example of this sort of public participation survey is the Maach Mat (Take Part) survey in Luxembourg (http://data.mnhn.lu/en/maach_mat), with a very limited list of easily identified species to record in 3 categories:



Both these surveys capture useful data from the public, though of course it is possible to run a survey where the sole purpose is public engagement and the data is not the key focus.

It's also possible to use Indicia to build recording sites which are aimed at enthusiasts, perhaps recording across a much wider taxonomic range or even recording any taxon at all. An example of this is the NatureSpot site (<http://www.naturespot.org.uk>) which allows naturalists in Leicestershire and Rutland to record all their sightings and photographs. This site supports entry of lists of any species at a particular date and time along with photo upload, along with online data management and verification facilities.



The NatureSpot site has already recorded over 2800 species in Leicestershire & Rutland showing how successful online recording can be.

As well as these generic recording solutions, it is also possible to use Indicia to develop highly specialised forms matched to particular survey methodologies, such as this form for long term grid based monitoring of butterflies in Luxembourg:

Butterfly Monitoring Scheme in Luxembourg

View
Edit
Access control

Grid-based species records

Transect: 072_081 **Date:** 30/06/2010

Add Species:

Observations along the transect and inside the virtual box ("X"), observations along the transect and outside the virtual box ("/") and casual observations ("O").

Note: when a species record is associated with multiple codes for the same grid, please consider this order of priority (1) "X", (2) "/" and (3) "O".

Coenonympha pamphilus
Kleines Wiesenvögelchen, Small Heath, Procris,

Pieris rapae
Kleiner Kohlweißling, Small White, Piéride de la rave,

08:	28:	48:	68:	88:
06:	26:	46:	66:	86:
04:	24:	44:	64:	84:
02:	22:	42:	62: X	82:
00:	20:	40:	60:	80:

08:	28:	48:	68:	88:
06:	26:	46:	66:	86:
04:	24:	44:	64:	84:
02:	22:	42:	62: X	82:
00:	20:	40:	60:	80:

Thymelicus lineola
Schwarzkolbiger Braun-Dickkopffalter, Essex Skipper, Hespérie du dactyle,

Pieris napi
Rapsweißling, Green-veined White, Piéride du navet,

08:	28:	48:	68:	88:
06:	26:	46:	66:	86:
04: X	24:	44:	64:	84:
02:	22:	42:	62:	82:
00:	20:	40:	60:	80:

08:	28:	48:	68:	88:
06:	26:	46: X	66:	86:
04:	24:	44:	64:	84:
02:	22:	42: X	62: /	82:
00:	20:	40:	60:	80:

Pararge aegeria
Waldbrettspiel, Speckled Wood, Tircis,

08:	28:	48:	68: X	88:
06:	26:	46:	66:	86:
04:	24:	44:	64:	84:
02:	22:	42:	62:	82:
00:	20:	40:	60:	80:

Previous Step
Next Step
Cancel

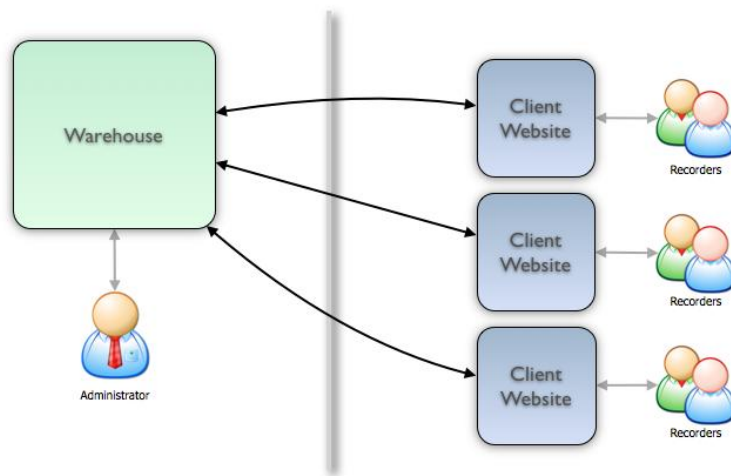
Developing specialist solutions such as this go beyond what this tutorial can cover in the space of a few hours and requires some code to be written, but they are much easier to develop using the Indicia toolkit as a starting point than if you started from scratch.

2.4 Indicia Components

In order to understand how to setup your own online recording using Indicia you first need to understand the key components that go together to build the system.

The main “guts” of Indicia are provided in the warehouse component. The warehouse’s primary purpose is to store the records, including observations, species data, sites, people and lists of terms used in the data. When a recorder uses the online recording facilities on an Indicia site, they do not need to be aware of the warehouse as the web interface they use is kept completely separate. However, the warehouse does have its own administration interface which we will look at later, designed for use by people whose role it is to set up and configure the surveys that are being conducted.

Because the database used by Indicia is fully able to handle geographic objects such as site boundaries, known as being **spatially enabled**, you can link the data in a warehouse easily to a GIS (Geographical Information System) application, Google Earth or online map. However this does mean that the technology used on the warehouse may not run on a typical low-cost hosted website account. Don’t worry though as Indicia was designed with this in mind. The warehouse can run on a different web server to your recording website so it can be hosted completely separately to your online recording website. A single warehouse installation can support multiple online recording websites making it possible for organisations that do have the capacity to host a warehouse to share this resource with other organisations which don’t. For example in the following diagram the warehouse supports 3 online recording websites for various schemes and societies (it could be many more).



The second component required of course is the online recording website itself. This is the part you will definitely need to build but Indicia is designed to make this as simple as possible. It is also designed to run on the vast majority of web servers including very cheap hosted accounts on shared servers. Because most of the hard work is done by the warehouse, Indicia does not place a huge burden on the server hosting the online recording website and only uses technologies that are more or less standard these days on nearly all web servers.

Whilst there are several possible approaches to building your website using Indicia, these tutorials are going to focus on Instant Indicia which is the fastest and simplest method.

2.5 Technology Primer

Before starting with Instant Indicia, it's worth taking a few moments for a quick primer of the technologies involved in a setup of Instant Indicia. Feel free to skip this section if you are comfortable with the way a typical web server works and have a basic understanding of content management systems, otherwise, read on.

Installing Instant Indicia is not like installing an application to run locally on your computer because it is designed to run from a web browser over the internet. When you view a web page over the internet, your web browser has sent a request for information to another computer called a *web server*. This is a specially configured computer with a permanent connection to the internet that is set up to respond to your requests by sending back web page content as appropriate. Although this is the typical paradigm of the internet, it is perfectly possible to use the same technologies to install Instant Indicia on a *local web server* on your computer and access it from the web browser on the

same computer. In fact this is what we typically do as developers of products like Indicia. Installing Instant Indicia from scratch is a bit more complicated than installing a typical desktop application simply because there are more components required to set up the web server.

There are quite a few different web servers which you can install on most machines. The two most commonly used contenders are IIS (Internet Information Services, Windows only) and Apache (Windows, Mac, Linux). Because the latter is the most widely used web server on the internet today Apache is a good choice if you don't have any other reason for your selection of web server. Another point to be aware of is that when you purchase some web space from a host, the typical low cost options are *shared web servers*, that is, the server is shared between your website and a number of other websites. That is how the host can make money by only charging a few pounds a month.

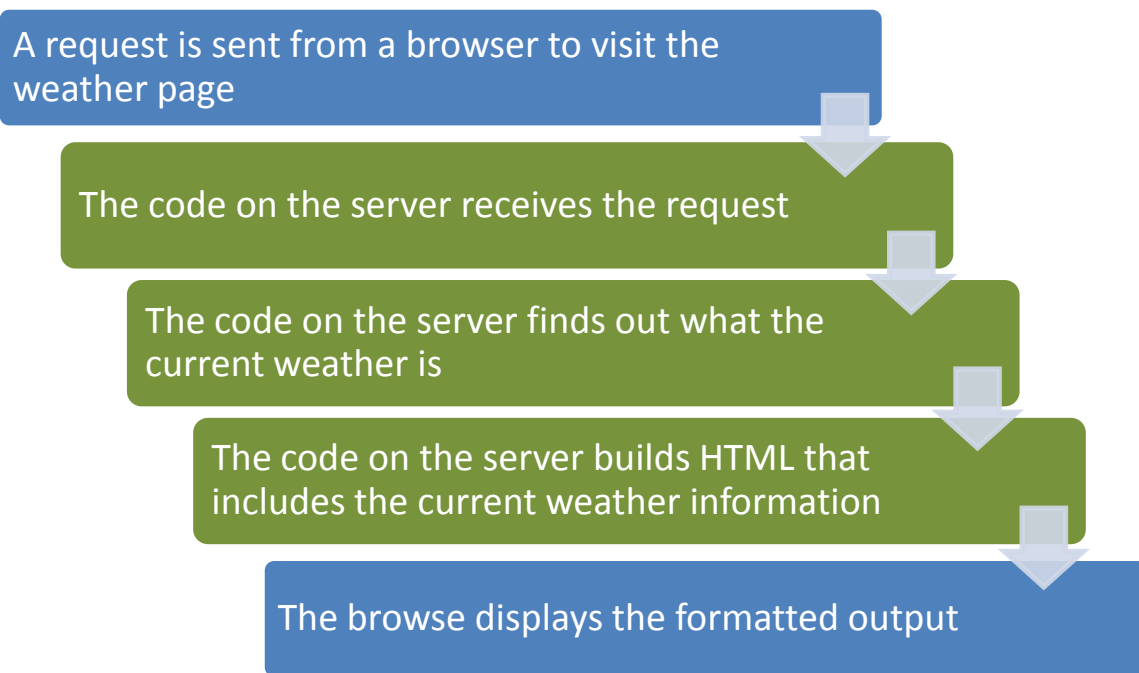
All web servers have one thing in common – they are designed to receive requests from web browsers and other web enabled applications, and to respond to those requests by sending back web content and other data. When you build a website, ultimately you are building a set of *web pages* which can be viewed on a browser. The content you write for your website is returned to the browser as text with special tags inserted into it to denote formatting, links to images and so forth. For example to output emphasized (italic) text the text can be marked up as follows:

`This text is emphasized. This text is normal.`

This would appear in the browser as:

This text is emphasized. This text is normal.

The language used to mark-up text for use on the web is called HTML (HyperText Markup Language). It is beyond the scope of this tutorial to teach HTML and the associated technologies but there are many books on the topic which are readily available if you are interested. However, it is fairly obvious that writing a large website by hand using HTML is quite a laborious task. There are tools such as Adobe Dreamweaver (<http://www.adobe.com/products/dreamweaver.html>) which facilitate this task. But what happens if you want to change the layout of the pages across the site, e.g. to insert a new menu at the top? And what happens if you want functionality on your site rather than just content, for example a weather widget on the home page which shows the latest weather? We can get around the problem of supporting functionality by using *programming languages* on the server to perform tasks which result in the output of HTML. For example, the weather widget could be explained by the following workflow:



The actual technologies available on the servers will vary from server to server. For example, a web server will support one or more programming languages to allow you to implement this sort of functionality. A web server will often also have access to one or more *database management systems* allowing it to store and retrieve the information typically required to build a web page. For example, on a news based website, when you visit a web page, code on the web server will retrieve news items from a database and use them to construct the page you finally see.

Instant Indicia uses a language on the server called PHP, chosen because it is very widely available on web servers, probably more so than any other language. Likewise it requires a database management system called MySQL which is also found on more web servers than any other database technology. This means that Instant Indicia can be installed on many low cost shared web accounts. Finally, during the tutorials you will come across something called PhpMyAdmin. This is a web application that lets you perform management tasks on MySQL databases on a web server such as creating databases and tables or backing up the data. It is also provided on many web servers that run MySQL.

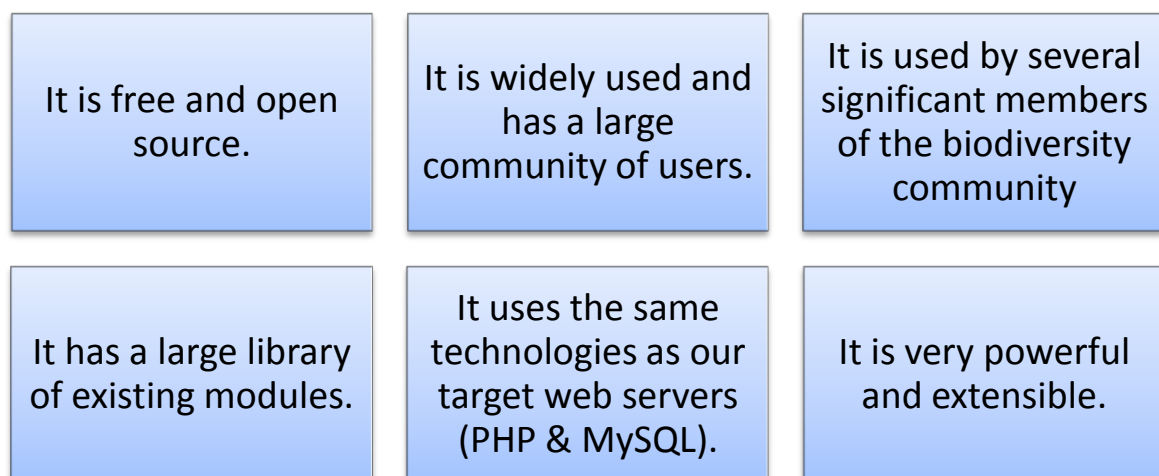
However, all these technologies put together help, but it is still an enormous task to write the code required to build a large site. We still haven't solved the problem of making site-wide changes such as the addition of a new menu either, though we could probably work out how to do that using some code. Worst of all, the task of editing a web page requires someone with programming skills which is clearly not practical. The solution to all these problems is to use something called a *content management system*. A content management system is a special type of program that provides the functionality required for a website, but without any content pages. It does, however, provide simple ways of adding new pages and content. Rather than writing code for each web page, you select from a menu an option along the lines of *Add new page* then simply type your content in, rather like when typing a document in a Word processor. A content management system typically also provides the following useful functionality:

- Ability to install plugin modules to extend the functionality. For example rather than writing a weather widget or code for a site search, just install the module and it is done.
- Ability to let users register, login and to control the functionality that is available to them. For example, only site editors are allowed to add or edit pages.

Clearly then, writing a website using a content management system is vastly preferable to without once you have more than a couple of pages with limited functionality.

There are a huge number of content management systems available which are based on a variety of different technologies and costing anything from free to hundreds of thousands of pounds.

Fortunately there are excellent free ones which are capable of running very extensive and powerful websites. The benefits of integrating Indicia into a content management system are clear – the CMS can provide content editing and other miscellaneous functionality, whereas Indicia can provide online recording, reporting and other specialist facilities. For Indicia, we have elected to focus our efforts on a single CMS called Drupal for the following reasons:



It is possible to use Indicia alongside many of the other available content management systems though of course it will be a bit more work, since the Indicia project has included development of extensive integration with Drupal.

2.6 So, how does Instant Indicia fit in to all this?

This tutorial is, of course, about Instant Indicia primarily. Instant Indicia is specifically an extension of the Drupal CMS that includes the following:

- ✓ Out of the box integration with Indicia.
- ✓ A number of additional modules useful for building biodiversity recording sites.
- ✓ A number of ready-made building blocks (called features) that you can enable in order to build the fundamental components of your site in minutes. These include features such as recording forms and reports as well as home pages, forums and other functionality.

Imagine a system which is provided as a number of ready-made pieces, where you can just tick off the ones you want and they will be added to your website more or less instantly. Whether it is an online recording form, a distribution map, or a discussion forum for getting help with identifications, you just need to tick a box to turn it on. That's what Instant Indicia is all about and that is what we are going to do in this course.

The following 2 sections of the tutorials cover the installation process for the warehouse and Instant Indicia. If you already have these parts installed, please skip forward to the section entitled Configuring Instant Indicia on page 31.

3 Warehouse Installation

Before using these tutorials, you will need to either have your own warehouse installed, or to have been granted access to a shared warehouse that is available for testing and development.

Installation of the Indicia warehouse component is described on the Wiki at <http://code.google.com/p/indicia/wiki/Installation>.

4 Installing Instant Indicia

4.1 Prerequisites

Before you install Instant Indicia, as well as the warehouse you need to make sure you have the following prerequisites in place:

1. Support for PHP 5.2 or higher
2. The MySQL 5 database server is installed
3. A tool allowing you to access the MySQL database server such as PhpMyAdmin or CPanel
4. The cUrl extension for PHP is enabled
5. Although not a fixed limit, it is recommended that the PHP memory limit be set to 64MB or higher

If you are using a web hosting package or a web server managed by someone else and are in any doubt about these prerequisites then please contact your web host who should be able to confirm if your server supports them.

If you are installing Instant Indicia on a local machine for test or development purposes, then one way to easily setup your system with a web server that meets these requirements is to install XAMPP (<http://www.apachefriends.org/en/xampp.html>). This is a handy package consisting of an Apache web server, MySQL plus the typical tools you might want to install onto a web server. XAMPP can be used on Windows, Mac or Linux platforms for Instant Indicia installations and it includes PhpMyAdmin by default.

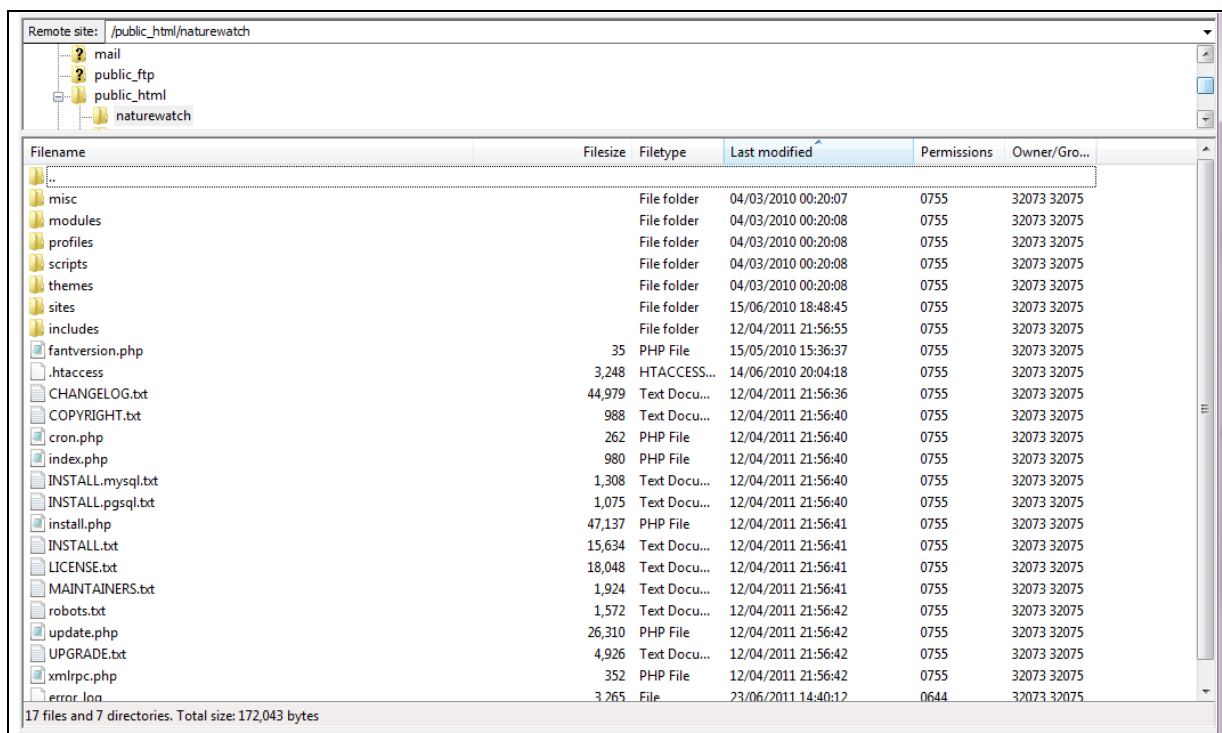
This tutorial assumes you will be using the web applications PhpMyAdmin or have access to CPanel for your database management tasks. CPanel is supplied with many hosted web accounts to provide various utilities for managing your website including creation of databases. If you are using a different tool for database management then the steps should be the same but using the different user interface provided by your tool. You might be wondering why a database is needed at all when the Indicia data is stored on the separate warehouse. This is because your website's pages and other settings are also stored in a database quite separate to the warehouse (which is only concerned with the actual biological records and other associated data). For example, when you create a page to add to your website to act as a home page, this is stored as a record in the MySQL database. When you add a record of a species to the system, this record is created and held in the warehouse.

4.2 Installation procedure

Installing Instant Indicia involves almost exactly the same process as installing Drupal 6, with a few extra bits for the Indicia specific stuff. It may be handy to have more information on installing Drupal in general which can be found at <http://drupal.org/videocasts/installing-6> and also in the links found in the comments section at the bottom of this page. There is also a video on installing Instant Indicia available at <http://www.youtube.com/watch?v=yTWHimXBagA>.

4.2.1 Copy Files

The first step is to copy the Instant Indicia files into the folder on your website where you would like to run your website from. This could be the htdocs folder supplied with an installation of XAMPP, the public html folder of your hosted website, or possibly a sub-folder within one of these locations. If the folder is on a remote server you may need to use an FTP program such as FileZilla (<http://filezilla-project.org/>) to upload the files. You can download the latest copy of Instant Indicia from the Indicia Downloads page at <http://code.google.com/p/indicia/downloads/list> then unzip the file to obtain the full set of files required (including the Drupal files). Once copied, your file structure might look something like this example, where I am setting up Instant Indicia in a subfolder of a website called **naturewatch**:



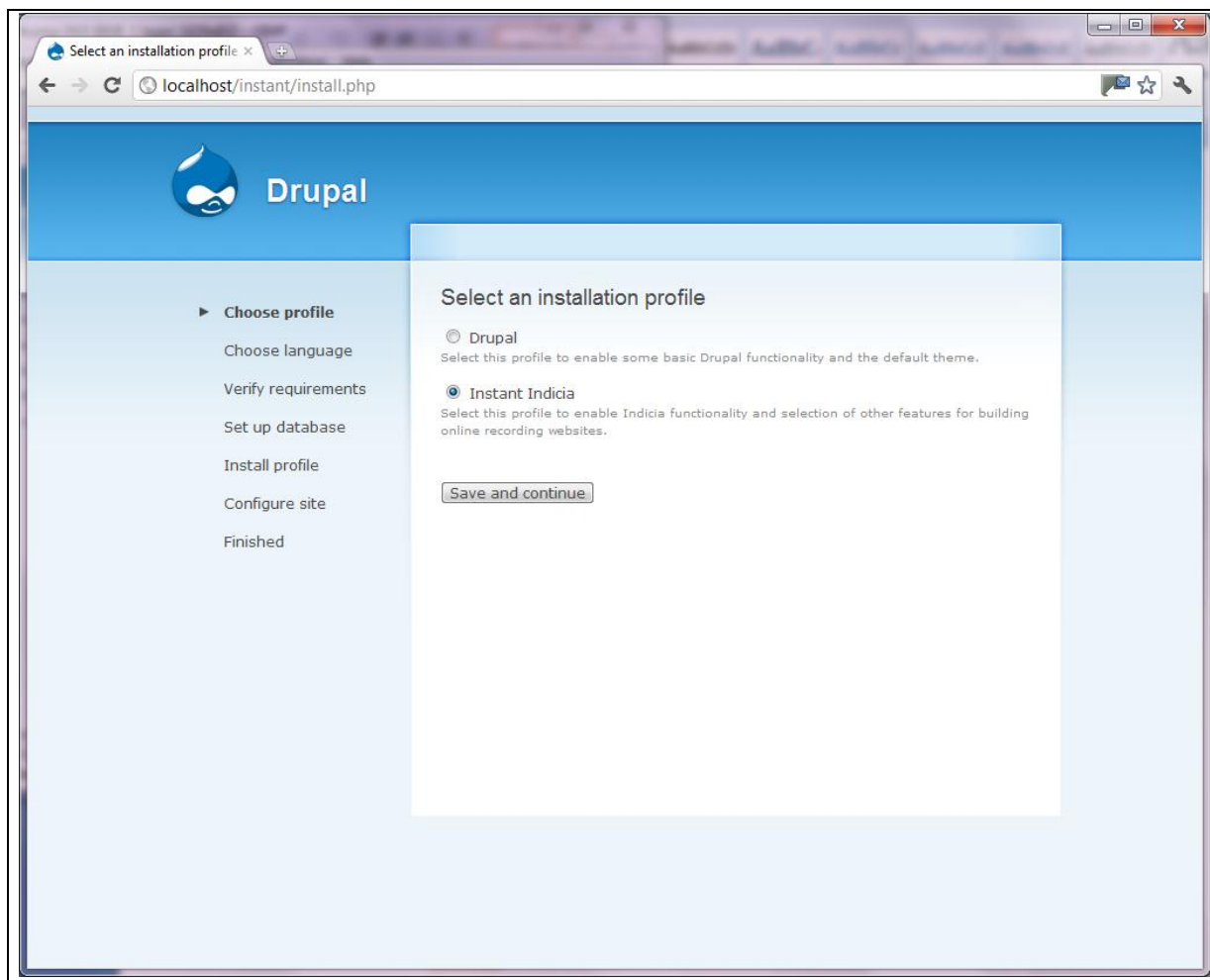
The screenshot shows the FileZilla interface with the remote site 'naturewatch' selected. The file list is as follows:

Filename	Filesize	Filetype	Last modified	Permissions	Owner/Gro...
..					
misc		File folder	04/03/2010 00:20:07	0755	32073 32075
modules		File folder	04/03/2010 00:20:08	0755	32073 32075
profiles		File folder	04/03/2010 00:20:08	0755	32073 32075
scripts		File folder	04/03/2010 00:20:08	0755	32073 32075
themes		File folder	04/03/2010 00:20:08	0755	32073 32075
sites		File folder	15/06/2010 18:48:45	0755	32073 32075
includes		File folder	12/04/2011 21:56:55	0755	32073 32075
fantversion.php	35	PHP File	15/05/2010 15:36:37	0755	32073 32075
.htaccess	3,248	HTACCESS...	14/06/2010 20:04:18	0755	32073 32075
CHANGELOG.txt	44,979	Text Docu...	12/04/2011 21:56:36	0755	32073 32075
COPYRIGHT.txt	988	Text Docu...	12/04/2011 21:56:40	0755	32073 32075
cron.php	262	PHP File	12/04/2011 21:56:40	0755	32073 32075
index.php	980	PHP File	12/04/2011 21:56:40	0755	32073 32075
INSTALL.mysql.txt	1,308	Text Docu...	12/04/2011 21:56:40	0755	32073 32075
INSTALL.pgsql.txt	1,075	Text Docu...	12/04/2011 21:56:40	0755	32073 32075
install.php	47,137	PHP File	12/04/2011 21:56:41	0755	32073 32075
INSTALL.txt	15,634	Text Docu...	12/04/2011 21:56:41	0755	32073 32075
LICENSE.txt	18,048	Text Docu...	12/04/2011 21:56:41	0755	32073 32075
MAINTAINERS.txt	1,924	Text Docu...	12/04/2011 21:56:41	0755	32073 32075
robots.txt	1,572	Text Docu...	12/04/2011 21:56:42	0755	32073 32075
update.php	26,310	PHP File	12/04/2011 21:56:42	0755	32073 32075
UPGRADE.txt	4,926	Text Docu...	12/04/2011 21:56:42	0755	32073 32075
xmlrpc.php	352	PHP File	12/04/2011 21:56:42	0755	32073 32075
error_log	3,265	File	23/06/2011 14:40:12	0644	32073 32075

17 files and 7 directories. Total size: 172,043 bytes

Once the files have been uploaded to the correct location, accessing the folder using your web browser should display a page allowing you to select whether to install a basic installation of Drupal or the Instant Indicia version. Here are some examples of how you can work out the URL to access:

- If installing on a local machine that is running as a local webserver and you copied the files into the root folder of your webserver's websites directory (htdocs if running Apache) then you can access <http://localhost>.
- If installing on a local machine that is running as a local webserver and you copied the files into a subfolder of your webserver's websites directory (htdocs if running Apache) then you can access <http://localhost/subfolder> replacing subfolder with the name of your folder.
- If installing on a remote machine using FTP into the root folder (normally called public_html) then you can access the page using just your domain name (e.g. <http://www.mysite.com>).
- If installing on a remote machine using FTP into a subfolder then you can access the page using your domain name and the subfolder (e.g. <http://www.mysite.com/subfolder>).



For now, we'll leave this part of the installation as there are a couple of other tasks to undertake before proceeding.

4.2.2 Create a settings file

Using the same tool you used to upload the files (e.g. FileZilla, Windows Explorer or the Mac Finder), find the folder at `sites/default`. Inside this folder there is a file called `default.settings.php`. Create a copy of this file and rename it to `settings.php`, leaving the original file in place. This is the standard way to create a file for Drupal 6 to store its various installation settings.

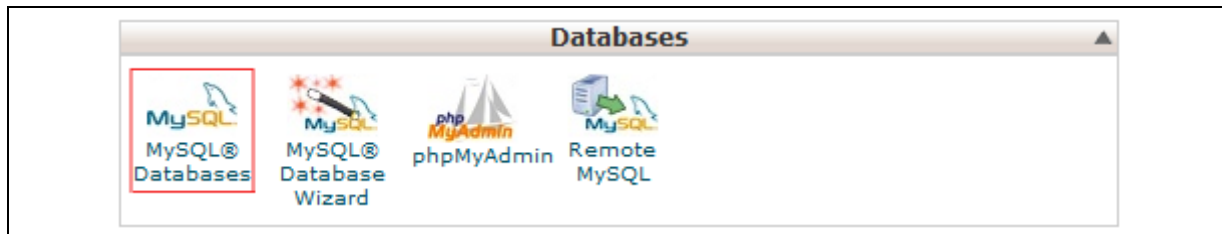
For more information on this see <http://drupal.org/documentation/install/settings-file>.

4.2.3 Create a database

The last step in preparing to install Instant Indicia is to create a MySQL database. The MySQL that has been installed on your web server is a *database server*, that is, it is an application designed for storing and retrieving data. The database server stores data in discreet buckets called *databases*, with each database being created for a specific purpose. Thus, it is possible to have a single database server provide storage facilities for multiple applications by having a separate database for each application. So, we need a database to store our Instant Indicia site's information in. The following paragraphs explain the database setup process, but if you want more information this can be found in the Drupal documentation at <http://drupal.org/documentation/install/create-database>.

4.2.3.1 Using CPanel

If you are using a hosted web account with CPanel then you will probably not have the password required to create databases in MySQL yourself using PhpMyAdmin, but there is a tool provided within CPanel for creating databases. Look for the Databases section and click the link called MySQL Databases to access it.

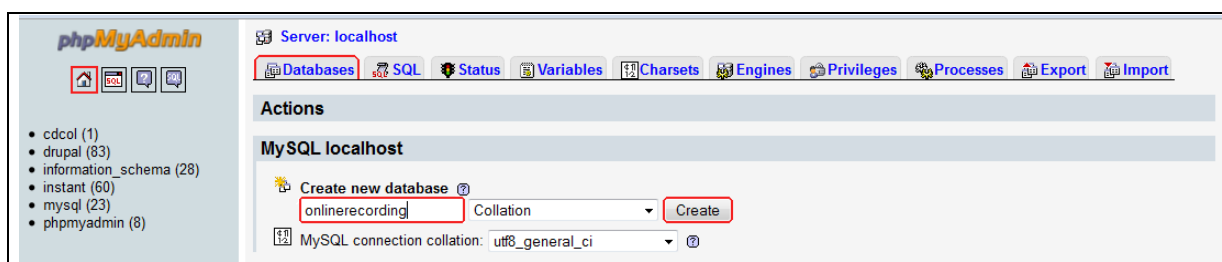


The CPanel MySQL databases tool provides you with a box to type in the name of your database and a Create Database button, it is as easy as that. Note that CPanel may enforce a prefix for your database name to allow it to keep your database separate from those created for other websites on a shared web server.

4.2.3.2 Using PhpMyAdmin

If you are using PhpMyAdmin and have the required password for administering MySQL, then follow these steps to create the database:

1. Using your web browser, access the phpmyadmin site and log in. This will typically be at the location <http://www.mysite.com/phpmyadmin>, or <http://localhost/phpmyadmin> if developing locally.
2. Or, if you are already logged in, click on the Home button in the toolbar near the top left, then select the Databases tab. *The Databases tab should show a box allowing you to input the name to create a new database. If this box is missing then it is likely that your MySQL database is part of a shared server so you do not have access rights to manage permissions in this way. The instructions for using CPanel should be used instead.*
3. In the Create new database box, enter the name of the database you want to create. Name it something that helps you remember it is for the site you are building. Press Create when ready.



4.2.4 Create a user

The database you have created will currently only be accessible to the MySQL administration user account (normally called root). When something needs to connect to MySQL to get to the database, it has to login to MySQL using a username and password. This applies whether it is a person (such as you) or a process (such as the Instant Indicia website) that is connecting to the database. Rather than let the website login to MySQL using the super-user root account which would make things less

secure, we will create a user account for the website to use when accessing MySQL. This user account will only have access rights to the database you created so cannot damage other parts of the server if it is hacked.

4.2.4.1 Using CPanel

To create a user account for your website to access MySQL using CPanel, go to the MySQL Databases section of CPanel as described for creating the database. Further down the page is a section called MySQL Users, with an option to add a new user by specifying a username and password. Just fill these boxes in and click the Create User button. If this is a live database, then it is very important to make the password a strong password containing a combination of letter, numbers and punctuation. There is a Generate Password button for creating passwords which generates a random, strong password ideal for this purpose though remember to take a note of the password if you use this facility. Once you have created the user, you need to grant that user access to the database you created earlier. At the bottom of the same page in CPanel, there is an Add User to Database section. Just select the user, select the database and click the Add button and you are done.

4.2.4.2 Using PhpMyAdmin

To create a user account for your website to access MySQL using PhpMyAdmin:

1. In PhpMyAdmin, click on the Home button then select the Privileges tab. *If there is no Privileges tab then it is likely that your MySQL database is part of a shared server so you do not have access rights to manage permissions in this way. The instructions for using CPanel should be used instead.*
2. Click the **Add new user** link.
3. Enter a user name, e.g. website.
4. The Host option can be set to Local.
5. Enter a password and retype it. If this is a live database, then it is very important to make this a strong password containing a combination of letter, numbers and punctuation. There is a Generate button for creating passwords which generates a random, strong password ideal for this purpose, though remember to take a note of the password if you use this facility.
6. Do not tick any boxes in the Global privileges section – you want the user to be only able to use your new website database.
7. Click the **Go** button, highlighted in red below.

Server: localhost

Databases SQL Status Variables Charsets Engines Privileges Processes Export Import

Add a new User

Login Information

User name: Use text field: website

Host: Any host 1

Password: Use text field:

Re-type:

Generate Password:

Database for user

☒ None

☐ Create database with same name and grant all privileges

☐ Grant all privileges on wildcard name (username_%)

Global privileges (Check All / Uncheck All)

Note: MySQL privilege names are expressed in English

Data	Structure	Administration	Resource limits
<input type="checkbox"/> SELECT	<input type="checkbox"/> CREATE	<input type="checkbox"/> GRANT	<small>Note: Setting these options to 0 (zero) removes the limit.</small> MAX QUERIES PER HOUR <input type="text" value="0"/> MAX UPDATES PER HOUR <input type="text" value="0"/> MAX CONNECTIONS PER HOUR <input type="text" value="0"/> MAX USER_CONNECTIONS <input type="text" value="0"/>
<input type="checkbox"/> INSERT	<input type="checkbox"/> ALTER	<input type="checkbox"/> SUPER	
<input type="checkbox"/> UPDATE	<input type="checkbox"/> INDEX	<input type="checkbox"/> PROCESS	
<input type="checkbox"/> DELETE	<input type="checkbox"/> DROP	<input type="checkbox"/> RELOAD	
<input type="checkbox"/> FILE	<input type="checkbox"/> CREATE TEMPORARY TABLES	<input type="checkbox"/> SHUTDOWN	
	<input type="checkbox"/> SHOW VIEW	<input type="checkbox"/> SHOW DATABASES	
	<input type="checkbox"/> CREATE ROUTINE	<input type="checkbox"/> LOCK TABLES	
	<input type="checkbox"/> ALTER ROUTINE	<input type="checkbox"/> REFERENCES	
	<input type="checkbox"/> EXECUTE	<input type="checkbox"/> REPLICATION CLIENT	
	<input type="checkbox"/> CREATE VIEW	<input type="checkbox"/> REPLICATION SLAVE	
	<input type="checkbox"/> EVENT	<input type="checkbox"/> CREATE USER	
	<input type="checkbox"/> TRIGGER		

That will create the user but leave you on the details view of that user. Several new sections will have appeared on the page, including one called Database specific privileges:

Database-specific privileges

Database Privileges Grant Table-specific privileges Action

None

Add privileges on the following database: Use text field: 1

Simply select your new database in the drop down and PhpMyAdmin will take you to a view of the database privileges for that user on that database:

Database-specific privileges ([Check All](#) / [Uncheck All](#))

Note: MySQL privilege names are expressed in English

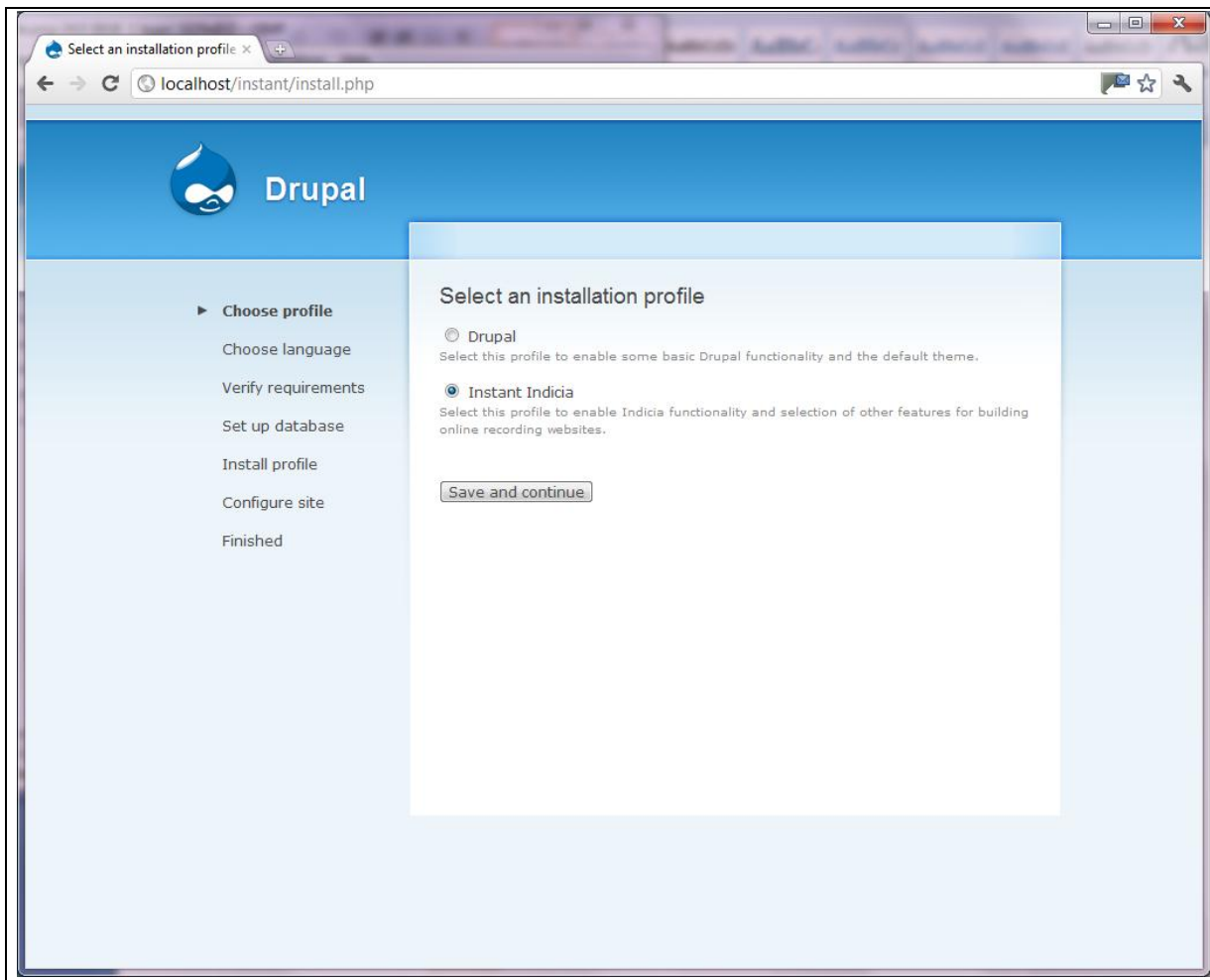
Data	Structure	Administration
<input type="checkbox"/> SELECT	<input type="checkbox"/> CREATE	<input type="checkbox"/> GRANT
<input type="checkbox"/> INSERT	<input type="checkbox"/> ALTER	<input type="checkbox"/> LOCK TABLES
<input type="checkbox"/> UPDATE	<input type="checkbox"/> INDEX	<input type="checkbox"/> REFERENCES
<input type="checkbox"/> DELETE	<input type="checkbox"/> DROP	
	<input type="checkbox"/> CREATE TEMPORARY TABLES	
	<input type="checkbox"/> SHOW VIEW	
	<input type="checkbox"/> CREATE ROUTINE	
	<input type="checkbox"/> ALTER ROUTINE	
	<input type="checkbox"/> EXECUTE	
	<input type="checkbox"/> CREATE VIEW	
	<input type="checkbox"/> EVENT	
	<input type="checkbox"/> TRIGGER	

Tick every box in this section or click the Check All link to give your user account full access to this database. This is important because it lets Drupal and the various modules we will install create the database structure they require. Finally click the Go button.

4.2.5 Install Instant Indicia

The hard stuff is all done now, as you have a web-server ready to install Instant Indicia on. Using your web browser, navigate to the folder where your website will be running from. For example if your domain name is www.mynaturesite.com and you copied the Instant Indicia installation files into a subfolder of the public HTML folder called mainsite, then the address you need to navigate to is <http://www.mynaturesite.com/mainsite>.

You will see the following page, which lets you choose from a default installation of Drupal, or to use the Instant Indicia *Profile*. On the left of the page you can see that you are on the first of several steps required for installation. Select the Instant Indicia profile and click Save and continue.

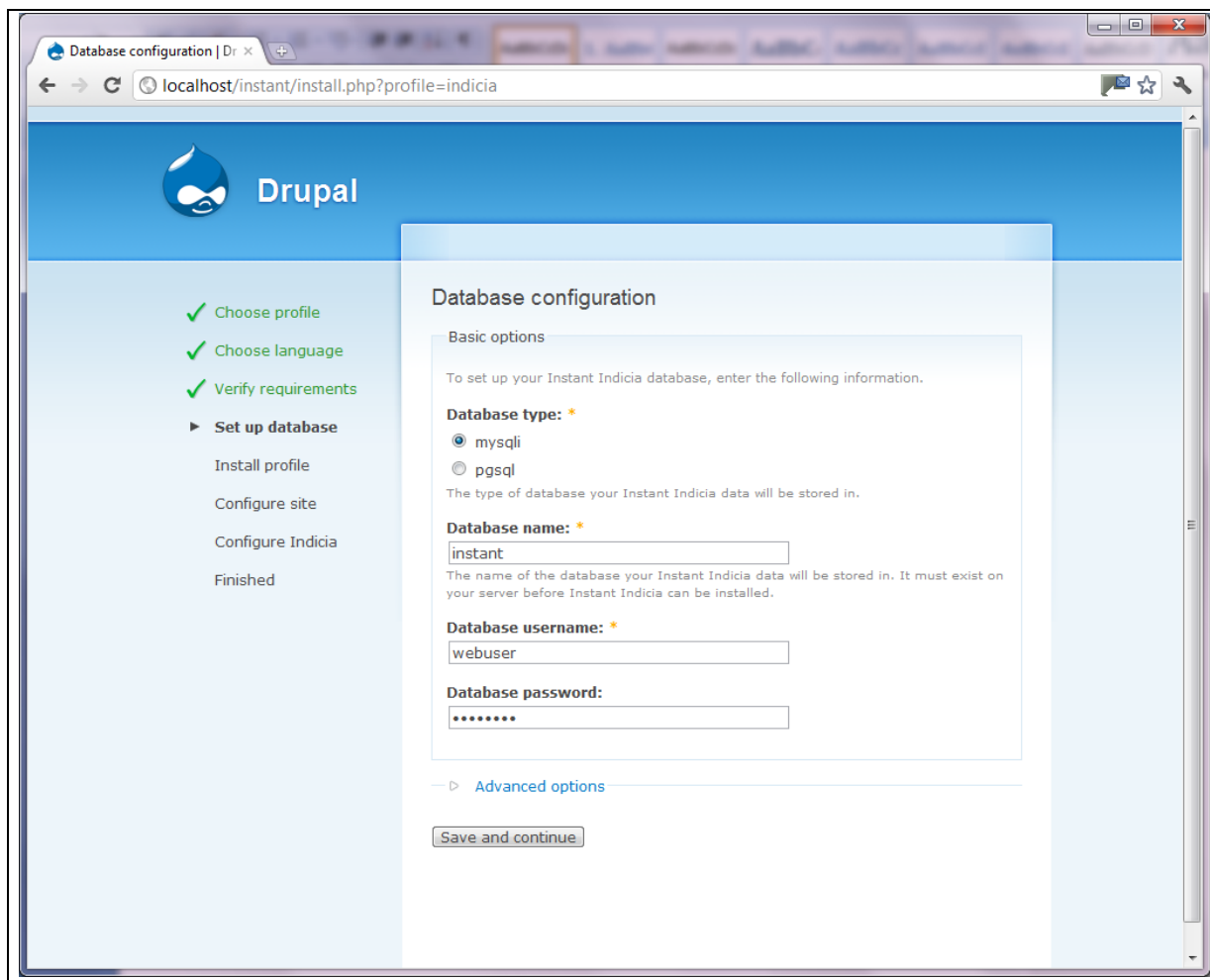


Because the Instant Indicia installation is currently only available in English, the installer will skip the Choose language step and proceed to verify that your server meets the requirements of Drupal. At this point you may see some messages informing you how to meet the requirements that are not met, but if everything has been setup as described so far the installer should proceed to the Set up database step.

If at this step you see messages relating to file permissions then you will need to correct these problems before continuing, for example there will be errors in the following circumstances:

- Drupal's installer does not have permissions to write settings to the settings.php file.
- Drupal's installer does not have permissions to create a folder at sites/default/files.

When installing onto a Linux, Unix or Mac server, note that file permissions will depend on the *ownership* of the file and you may need to use the *chown* command line tool to change the file ownership. More information on setting the correct file permissions for a Drupal installation can be found at <http://drupal.org/documentation/install/settings-file>.



This step lets you tell Drupal how to connect to your MySQL database that you created earlier. The Database type should be `mysqli` because that is the name of the library Drupal will use to connect to MySQL. The second option, `pgsql`, allows Drupal to be set up using the alternative PostgreSQL database but not all modules are compatible with PostgreSQL so we will stick to MySQL.

Provide the name of the database, plus the username and password you created earlier for connecting to the database with.

There is an advanced options section which you generally do not need to touch. There is some more information on this section in the Drupal documentation at <http://drupal.org/documentation/install/run-script>. Click the Save and continue button when you are ready. Drupal will chug away for a few seconds whilst it sets up the database before proceeding to the next step.

Once the database is created, you will see the Configure site page. This page lets you set up various things like the site title and admin account which are required for all Drupal installations:



- ✓ Choose profile
- ✓ Choose language
- ✓ Verify requirements
- ✓ Set up database
- ✓ Install profile

► Configure site

Configure Indicia

Finished

Configure site

The file `sites/all/modules/iform/client_helpers/helper_config.php` is currently editable but should be made read only to improve security.

All necessary changes to `./sites/default` and `./sites/default/settings.php` have been made. They have been set to read-only for security.

To configure your website, please provide the following information.

Site information

Site name: *

Site e-mail address: *

The From address in automated e-mails sent during registration and new password requests, and other notifications. (Use an address ending in your site's domain to help prevent this e-mail being flagged as spam.)

Slogan:

Your site's motto, tag line, or catchphrase (often displayed alongside the title of the site).

Administrator account

The administrator account has complete access to the site; it will automatically be granted all permissions and can perform any administrative activity. This will be the only account that can perform certain activities, so keep its credentials safe.

Username: *

Spaces are allowed; punctuation is not allowed except for periods, hyphens, and underscores.

E-mail address: *

All e-mails from the system will be sent to this address. The e-mail address is not made public and will only be used if you wish to receive a new password or wish to receive certain news or notifications by e-mail.

Password: *

Confirm password: *

Server settings

Default time zone:

By default, dates in this site will be displayed in the chosen time zone.

Clean URLs:

☐ Disabled

☒ Enabled

This option makes Drupal emit "clean" URLs (i.e. without `?q=` in the URL).

Your server has been successfully tested to support this feature.

Update notifications:


☒ Check for updates automatically

With this option enabled, Drupal will notify you when new releases are available. This will significantly enhance your site's security and is **highly recommended**. This requires your site to periodically send anonymous information on its installed components to drupal.org. For more information please see the [update notification information](#).

At the top of the site you may see a note about setting the settings.php file to read only. Drupal will attempt to do make this change itself but if it does not have the capability to do so (which depends on the setup of the particular web server) it will request that you do this yourself. It's not essential to do this for a development setup but does improve security a little on a live system.

The fields you need to fill in on this page are mostly self explanatory – the site name and slogan are displayed in the site banner and the site email address is used when the site sends out automatic emails such as those sent during the user registration process. The next section lets you define the username, password and email for an admin account that has full access to all functionality in Drupal. It goes without saying that if this is a live setup that the admin account's password must be strong – the user interface will inform you of how strong your password is when you type it in.

The final section on this page – Server settings – can normally be left in its default state as Drupal will choose the best settings for your server. Click the Save and continue button when you are ready and Drupal will proceed to the Configure Indicia page where you set up Indicia specific settings.



My Instant Indicia Site

My online recording site

- ✓ Choose profile
- ✓ Choose language
- ✓ Verify requirements
- ✓ Set up database
- ✓ Install profile
- ✓ Configure site
- **Configure Indicia**

Finished

Configure Indicia

Indicia Warehouse: *

☐ BRC Test Warehouse
☐ BRC Live Warehouse 1
☒ localhost/indicia (for developing on a local webserver)
☐ Other

Select the Indicia Warehouse to connect to, or select Other and enter the details in the Warehouse URL and GeoServer URL fields.

► [Other Warehouse Details](#)

Indicia Website ID: *

Please enter the ID given to your website record when your website was registered on the Indicia Warehouse.

Password: *

Confirm password: *

Please enter the password specified when your website was registered on the Indicia Warehouse.

API Keys

GeoPlanet API Key:

The Yahoo! GeoPlanet API is one option to lookup place names when you use the place search control. It references a global database of places and returns the list of possibilities with their spatial references to Indicia. To obtain your own API key for GeoPlanet, please visit [Yahoo! GeoPlanet](#) and follow the link to get an Application ID.

Bing API Key:

The Bing API key is required to allow use of Bing map layers but can be left blank if you do not intend to use Bing maps. To obtain your own key, please visit the [Bing Maps Account Center](#).

Google Search API Key:

The Google Search API is a second option to lookup place names when you use the place search control. It is also used by the Postcode textbox control to georeference postcodes you input. To obtain your own API key for the Google Search API, please visit [Google Search API](#) and follow the instructions to get an Application ID.

The first thing to do here is to provide Indicia with some information about the warehouse you are going to connect to. There are several pre-configured warehouses available to pick from including one for localhost (if the warehouse is setup on your current machine in a folder called indicia) as well as the warehouses provided by the Biological Records Centre in the UK (BRC). To use the BRC warehouses you will need to obtain permission, which can be done by asking on the Indicia forum at <http://forums.nbn.org.uk/viewforum.php?id=19>). If you have to setup for a different warehouse then choose the Other option and enter the path to the indicia site excluding the index.php part but including the trailing slash, e.g. "http://www.mysite.com/indicia/". The second box in this section lets you configure a connection to GeoServer. This is a non-essential extension to the functionality provided by Indicia so can be left blank for the purposes of this tutorial.

Further down the page you will be asked to input the website ID and password. This provides a mechanism for your installation of Instant Indicia to authenticate onto and communicate with the Indicia warehouse. The default installation of the warehouse comes with a demonstration website registration which can be used for installation purposes, so fill in the following:

- Website ID = 1
- Password = password

The next section of the configuration page lets you specify several API keys. These are effectively passwords that let your Instant Indicia site access various web services. For example when a map is displayed on the screen the map imagery displayed comes from a web service such as the Google Maps or Bing Maps services. When a user searches for a place name, the place name is looked up using a Google place search web service or the Yahoo! GeoPlanet web service. Using these web services is generally free as long as your site does not charge for access, though it is your responsibility to check the terms & conditions of the relevant services. For the purposes of this tutorial you should at least follow the link to obtain an API Key for Yahoo! GeoPlanet and fill that one in. The other API Keys can be left blank or filled in as desired.

Finally on this page is a map settings section:

Map Settings

Pan and zoom this map to set the default map position for your survey input and mapping pages.



Google Map Data - Terms of Use

List of spatial or grid reference systems

Please tick off each spatial or grid reference system you wish to enable for input when using this website.

- ☒ British National Grid
- ☐ Irish National Grid
- ☐ GPS Latitude and Longitude (WGS84)
- ☐ Guernsey Grid
- ☐ Jersey Grid
- ☐ UTM 30N (ED50)
- ☐ UTM 30N (WGS84)
- ☐ LUREF Luxembourg

Other:

For any system not in this list, you can enter a comma separated list of EPSG codes or other system names as long as they are recognised by the Indicia Warehouse you are using.

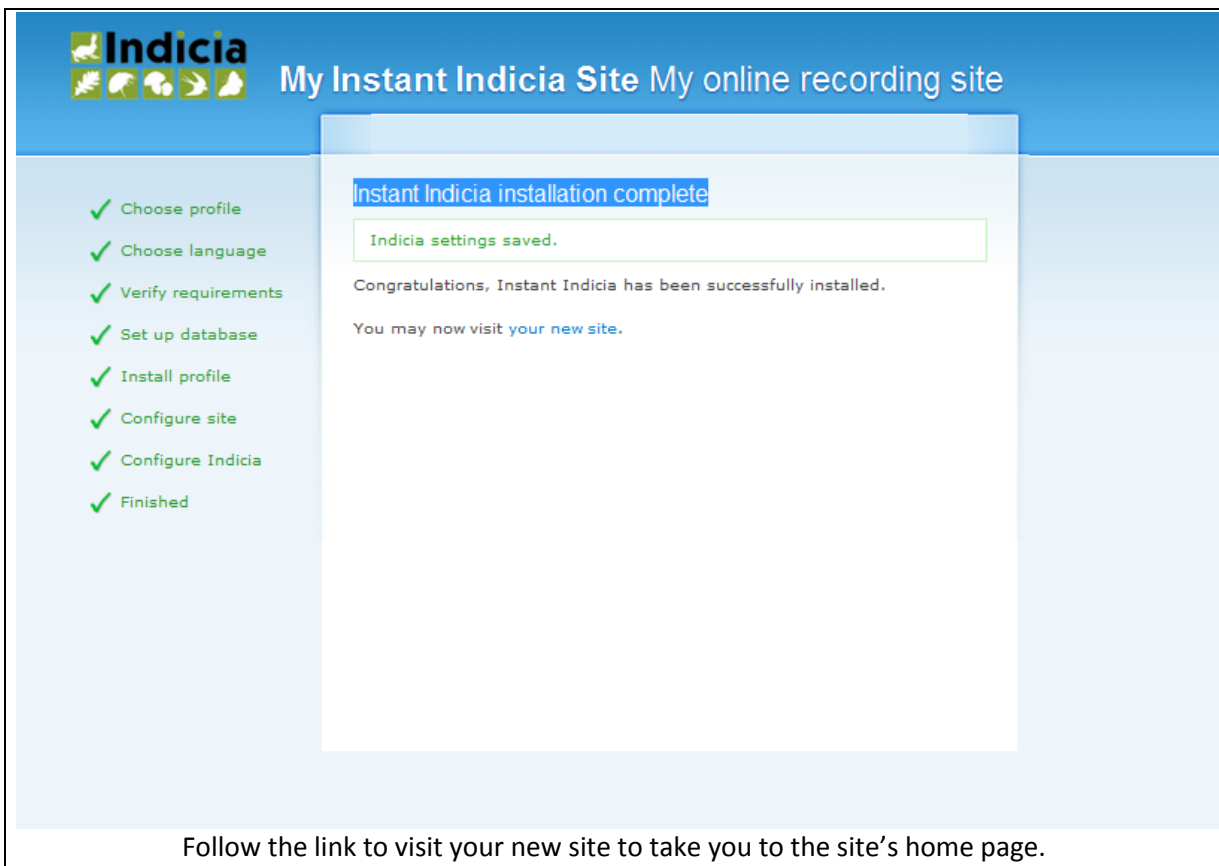
Save

This lets you set a default zoom and centre point for maps displayed by your site, though these settings can be overridden on a page by page basis. You can leave the map where it is if you are happy with the default settings, or drag it to a different centre point and zoom scale.

Tip: When using the map, hold the Shift key and drag a box to quickly zoom in to a specific region.

Beneath this there is a list of grid and spatial reference systems that you can tick to enable support for on your site. If you only want British National Grid references to be input then leave this as it is, otherwise you can opt to include support for the other reference systems listed.

If you need to change any of these settings in future, then don't worry as there is a configuration page provided which lets you do that. When you are done, press the Save button to complete the installation and with any luck you will see the following page.

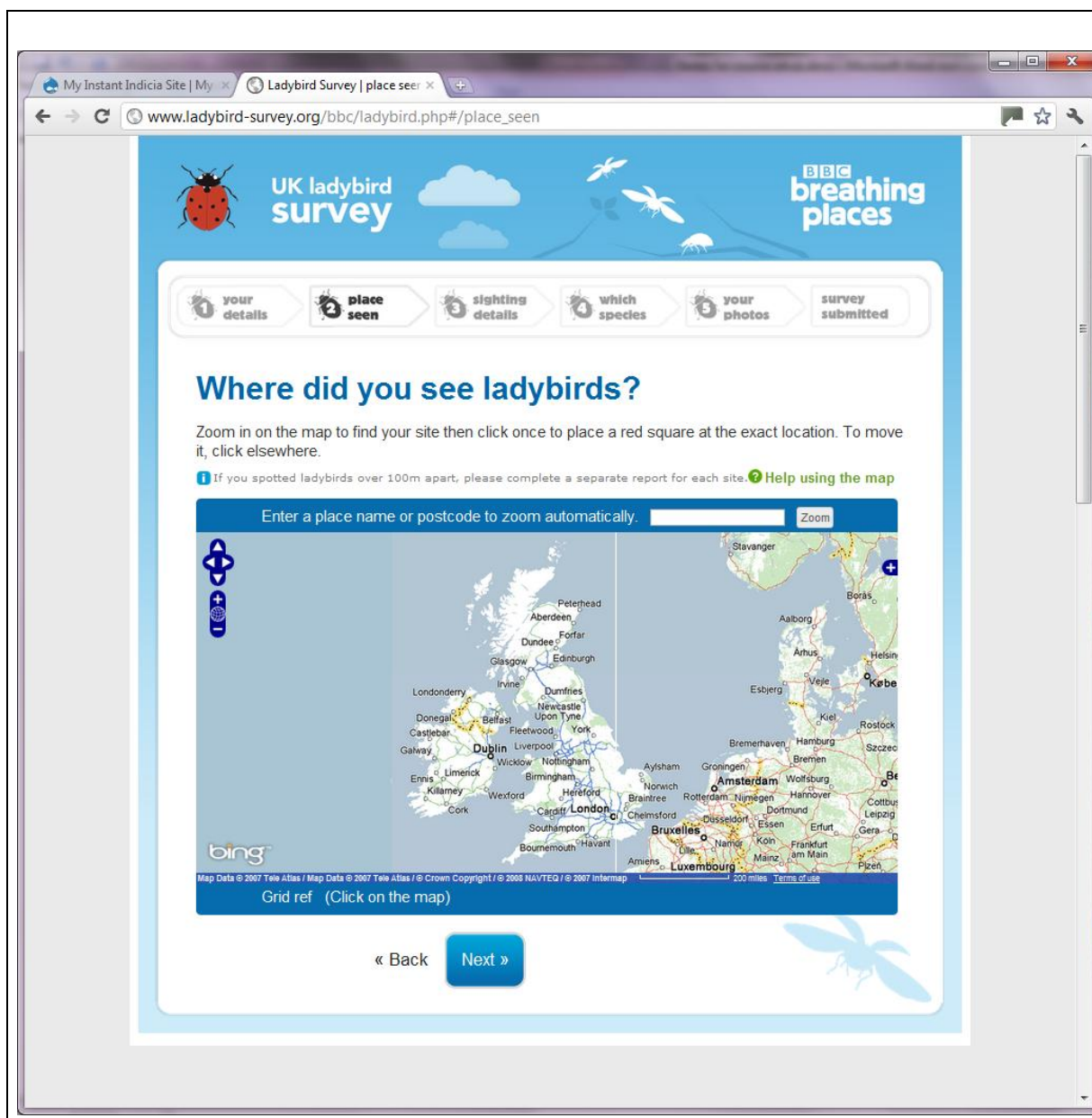


The screenshot shows the 'My Instant Indicia Site' page. On the left, a list of steps with green checkmarks indicates the installation progress: Choose profile, Choose language, Verify requirements, Set up database, Install profile, Configure site, Configure Indicia, and Finished. The main content area displays a blue header with the Indicia logo and the text 'My Instant Indicia Site My online recording site'. Below the header, a white box contains the message 'Instant Indicia installation complete' in blue, followed by 'Indicia settings saved.' in green, 'Congratulations, Instant Indicia has been successfully installed.' in black, and 'You may now visit [your new site.](#)' in black.

Follow the link to visit your new site to take you to the site's home page.

5 Configuring Instant Indicia

With the warehouse and Instant Indicia installation procedures complete, we can now move on to the main part of the course. First, we'll take a look at using the warehouse's user interface to prepare for our website to be built. Then, we'll spend some time looking at building the separate user interface required for our online recording site, by familiarising ourselves with the basics of site building using Drupal and also how to add your own custom content to a Drupal/Instant Indicia site. Finally, the rest of the course will look at how to configure the Instant Indicia aspects of the site to turn our website into an online recording system.



The screenshot shows a web browser window displaying the 'UK ladybird survey' form. The browser's address bar shows the URL 'www.ladybird-survey.org/bbc/ladybird.php#/place_seen'. The page has a blue header with the 'UK ladybird survey' logo and the 'BBC breathing places' logo. Below the header is a navigation bar with six steps: 1. your details, 2. place seen, 3. sighting details, 4. which species, 5. your photos, and 6. survey submitted. The 'place seen' step is currently active. The main content area is titled 'Where did you see ladybirds?' and includes instructions: 'Zoom in on the map to find your site then click once to place a red square at the exact location. To move it, click elsewhere.' Below this is a note: 'If you spotted ladybirds over 100m apart, please complete a separate report for each site.' A search bar with the placeholder 'Enter a place name or postcode to zoom automatically.' and a 'Zoom' button is present. The map shows a view of Europe, with the UK and Ireland clearly visible. A red square is placed on the map, indicating the sighting location. The map is powered by Bing. At the bottom of the map area, there is a 'Grid ref (Click on the map)' field. Navigation buttons '« Back' and 'Next »' are located at the bottom of the form.

Figure 1 - The BBC Breathing Places Ladybird Survey form

5.1 Setting up the Warehouse

The warehouse is the administrative tool provided with Indicia that allows you to configure the way that data is stored for your surveys. For example, you use the website to setup lists of species, the types of information (attributes) you want to capture when recording and so forth. There are some tasks that need to be performed on the warehouse before using Indicia to create your website.

There is a video tutorial going through the initial setup of the warehouse available at <http://www.youtube.com/watch?v=Fj3DrB9a0mY>.

5.1.1 Setting up a website registration

Before you can store any data in an Indicia warehouse, you need to register your website with the warehouse so that the warehouse can ensure that your data is only accessible to your website. Other websites which are registered on the same warehouse will only be able to access their own records.

If you do not have access to the admin login for the warehouse you are using, you will need to ask the administrator of the warehouse to create your website registration for you. Please provide them with your website title, URL, an optional description and a secure password as well as your email address. Once setup, they will provide you with a website ID which you need to keep for future use along with the password. They can also provide you with a username and password which you can use to login to the warehouse in future with access to just your own data. Once logged in, please change your password to a secure password.

If you are going to register the website on the warehouse yourself, then please follow these steps.

1. Using your web browser, navigate to the web address of the Indicia warehouse. The address will either have been provided for you or will be the address you installed it at if you installed it yourself. This will present you with a login page:



Indicia

Home
User Login

Indicia is a toolkit that simplifies the construction of new websites which allow data entry, mapping and reporting of wildlife records. Indicia is an Open Source project funded by the Open Air Laboratories Network (of which the NBN is a partner) and managed by the Centre for Ecology and Hydrology. This is the Indicia Warehouse system, providing administration and configuration of websites built using Indicia. In order to gain access to this Indicia system you must log on. If you do not have an account and need one, please contact the administrator [TBC] who can create one for you. For more information on Indicia, please see [the Indicia project website](#).

Login details

Username

Password

Remember me ☐

[Login](#)

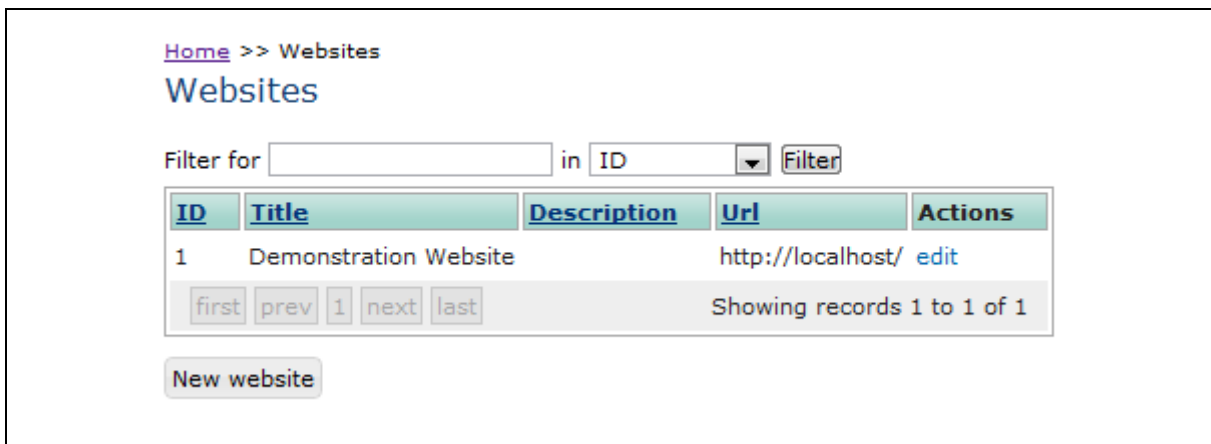
If you have forgotten your username, [click here to log in using your email address](#).
If you have forgotten your password, [click here to request an email allowing you to reset your password](#).

Indicia Version 0.7.0

2. Login to the Indicia warehouse using the **admin warehouse login**. You will either have created this login when you installed the warehouse, or it should have been provided for you.

Note: You may see a warning at the top of the warehouse's home page, informing you that there are configuration issues on the server. These warnings are important on a live server as they indicate parts of the installation that should be completed, but if the server is for training or development only it is safe to ignore certain warnings (e.g. about setting the server up for email and also locking down permissions on certain directories to improve security).

3. Select Admin > Websites from the menu at the top. This will show you a grid listing websites already available on the warehouse. Immediately after installation this typically shows a single website called Demonstration Website.



[Home](#) >> [Websites](#)

Websites

Filter for in

ID	Title	Description	Url	Actions
1	Demonstration Website		http://localhost/	edit

[first](#) [prev](#) [1](#) [next](#) [last](#) Showing records 1 to 1 of 1

[New website](#)

4. Click the New website button.
5. Enter the title of your website, e.g. "Tutorial".
6. Fill in the URL of the website you will be setting up, e.g. <http://www.mytutorial.com>. Note that this is just a link to the website for reference purposes. You can optionally provide a description for the website. Specify a password which will be used to authenticate that data posted to the server actually came from your website, and enter it again in the Retype Password box to confirm it. If you are registering a website for live data as opposed to one for testing or development purposes, please ensure that this password is strong (e.g. it includes punctuation, capitals and numbers rather than being a word which can be easily looked up in a dictionary scan).

The screenshot shows a web interface for creating a new website. At the top, there is a breadcrumb trail: [Home](#) >> [Websites](#) >> Website. Below this is the title 'New Website'. A descriptive sentence states: 'This page allows you to specify the details of a website that will use the services provided by this Indicia Warehouse instance.' The main section is titled 'Website details' and contains several input fields: 'Title' with the value 'Tutorial', 'URL' with the value 'http://www.mytutorial.com', 'Description' with the value 'This is a test website registration.', 'Password' with masked characters '*****', and 'Retype Password' with masked characters '*****'. At the bottom of the form, there are three buttons: 'Save', 'Cancel', and a button labeled 'then' followed by a dropdown menu with the text 'go back to the list'.

7. Click the **Save** button.
8. The website registration you have just created has been given a **website ID** which uniquely identifies the website to the warehouse. This, along with the password you entered, are important pieces of information that you will need when setting up your online recording. At the back of this tutorial there is a space you can use to keep a note of the website ID and password. The new website registration's website ID is visible in the grid in the leftmost column.



Now that you have registered the website, it is a good idea to avoid logging into the warehouse in future using the admin account, since this account can change any data for any website registered on the warehouse. The Indicia warehouse maintains a list of **people** known to it. People can include anyone associated with the data, e.g. recorders, determiners or anyone else. There is also a list of **users** which are people that can log in to the warehouse. Every user must exist in the list of people, but not every person exists in the list of users. So, to be able to log in to the warehouse you have to exist as a person first, then to be added to the list of users.

If you don't already have a separate **warehouse login** of your own, then follow these steps to create a user on the warehouse:

1. Select **Lookup Lists > People** from the menu.
2. Click the **New Person** button.
3. Enter the details of the person who will act as the administrator of the website you are building, including at least their first name, surname and email address. Other fields are optional.
4. In Indicia, a person can be added to the list of known people without actually making them into a user who can login to the warehouse. For example the person might be a recorder who you accept records from but does not use Indicia. To convert the person record you have created into a user of the warehouse, select **Admin > Users** from the menu.
5. Find the person record you just created then click **Edit User Details** in that row.

[Home](#) >> [Users](#)
Users

Notes:
All Users must have an associated 'Person' - in order to create a new user the 'Person' must exist first.
In order to be on the list of potential users, the person must have an email address.

Filter for in Name

Name	Username	Core role	Actions
core admin	admin	CoreAdmin	Edit user details Edit person details Send forgotten password email
Joe Bloggs			Edit user details Edit person details Send forgotten password email

Showing records 1 to 2 of 2

- In the User's Details, note the Username that has been generated or change it if required.
- Indicia will fill in a suggested password for all new users of "P4ssw0rd", but rather than use this default it is a good idea to specify your own. Enter a password for the user in the **Password** control and confirm it in the **Repeat Password** control.
- In the Website Roles list, select Admin in the drop down box next to the name of the Website you created (e.g. "Tutorial"):

[Home](#) >> [Users](#) >> [User](#)
New User

This page allows you to specify a users details.

User's Details

Username

Interests

Location Name

Show Email Address ☐

Show Common Names ☐

Role within Warehouse

Password

Repeat Password

Website Roles

Demonstration Website

Tutorial

then

- Save the page.

You will need to remember the username and password for the **warehouse login** you just created and there is a space for noting these at the back of this tutorial.

If you need to add an existing user to the website you have registered, then you can select Admin > Users from the menu and click the Edit user details link in that row, then simply modify the Website Roles section as before and click Save.

Finally, select **Logged in as admin > Logout** from the menu to take you back to the login page.

5.1.2 Register your survey

Firstly, note that in Indicia's terminology a survey is a collection of records made for a specific purpose across any number of site visits. As well as being used to categorise records, an important use of surveys in Indicia is to allow you to customise the information you will capture for a record at a survey level. For example, you might run a survey of hedgehogs in your area as well as a survey of garden birds. The garden bird survey could allow the user to tick a box for nesting birds as opposed to non-breeding visitors to the garden. Obviously it would not make sense to provide this checkbox on a form for inputting hedgehog records! Don't worry about dividing your data up into several surveys if you need to in order to get the right attributes for each survey, as it is simple to join the data back together again when producing reports and maps later. Whilst we are on the topic of terminology, we will be using the following terminology:

- *record* or *occurrence* describes a unique observation of a species on a specified date, at a specified place, by a specified person(s).
- *sample* describes the observation event that leads to the taking of zero or more occurrences, e.g. the use of a trap on a particular date by a particular person(s) at a particular place.
- *location* describes any named place which you are keeping details of in the system. A location may be a site that you visit for recording purposes, but could also be something like a town or other place name.

Follow these steps to register a new survey for recording on the warehouse.

1. Login using the **warehouse login** you created in the previous step, who has admin rights to the website registration you have created for your website. If you have not already setup the website and user, please see the Setting up a website registration tutorial.
2. Select **Lookup lists > Surveys** from the warehouse's menu. You should now be on a page that shows a grid of surveys that already exist. Like the websites list, there is a demonstration item added to the list during installation to provide somewhere to add records which are for demo and testing purposes.
3. Click the **New survey** button. This takes you to the New Survey page.
4. Enter a title for your survey as well as an optional description. For the purposes of this tutorial we will set up a survey called "Damselflies".
5. Select the website you are using this survey for from the Website drop-down at the bottom.



The screenshot shows the Indicia web application interface. At the top, there is a header with the Indicia logo (a green square with a white rabbit) and the word 'Indicia' in a large, bold, black font. Below the logo are five small green squares, each containing a white icon representing different types of organisms: a leaf, a flower, a bird, a fish, and a butterfly. To the right of the header is a large, detailed image of a cluster of orange and yellow flowers. Below the header is a navigation bar with links: Home, Lookup Lists, Custom Attributes, Entered Data, Admin, and Logged in as joe_bloggs. The main content area is titled 'New Survey' and contains a form for creating a new survey. The form has three main sections: 'Title' with a text input field containing 'Damselflies', 'Description' with a large text area containing 'Survey for the tutorial data.', and 'Website' with a dropdown menu showing 'Tutorial'. At the bottom of the form are three buttons: 'Save', 'Cancel', and 'then go back to the list'. The footer of the page indicates 'Indicia Version 0.7.0'.

6. Click the **Save** button.

5.1.3 Setting up a list of species to record against

Indicia does not stipulate that you use any particular list of species when recording. You might want to setup a form for professional ecologists using a complete species dictionary on the one hand, or you might want to setup a form for primary schoolchildren to record at a higher level (e.g. tickboxes for Frog, Bird, Hedgehog). It is up to you to setup the species list you want to record against. Also note that Indicia does not force you to record only species, as you can record higher level taxa such as families if you deem it appropriate. Therefore the “list of species” might be more correctly termed “list of taxa”.

Indicia does provide tools for importing species lists from CSV (comma separated values) files as well as a module for importing species information from the NBN Species Dictionary web services in the UK. CSV is a format for files containing tables of data represented as simple text with commas separating the values. If you are using the warehouse provided by the Biological Records Centre in the UK then you will find a species list called UK Master Species List which is available for you to record against, which uses the NBN Species Dictionary as its basis. In Indicia, there is currently basic support for creating taxonomic hierarchies as well as flat lists. To facilitate reporting and data entry, all taxon records in the system have an associated **taxon group** which provides a descriptive label for the group which the species or taxon falls into. For example, by setting up taxon groups called birds and flowering plants, it is possible to distinguish between the bird called redshank and the plant called redshank both during data input and reporting.

For this tutorial we will assume you want to setup your own species list to record against and we will look at the process of inputting species directly as well as importing a species list from a file. The species list will be a list of common names of some damselflies:

Banded Demoiselle, Beautiful Demoiselle, Dainty Damselfly, Small Red Damselfly, Northern Damselfly, Irish Damselfly, Southern Damselfly, Azure Damselfly, Variable Damselfly, Common Blue Damselfly, Red-eyed Damselfly, Blue-tailed Damselfly, Scarce Blue-tailed Damselfly, Large Red Damselfly

Before you can import or input a species record, you need to prepare the list of taxon groups you need for your list of species. There are options to import the list from CSV files or using a module to import from the list of reporting categories used by the NBN Species Dictionary. In our case we only need one taxon group called Damselflies so we will create it by hand.

1. Select **Lookup Lists > Taxon Groups** from the menu in the warehouse to view the list of existing taxon groups.
2. If your warehouse already has some taxon groups populated into it, it is a good idea to first check that the taxon group does not already exist using the Filter For box at the top. Enter “damsel” into the box then click the **Filter** button. If Damselflies is already in the list then it will appear in the grid and you can skip the next 2 steps. If not proceed with the following steps to create it.
3. Click the **New taxon group** button.
4. A taxon group needs only to have a title filled in. If the group is being imported from an external system then the External Key field allows you to keep a unique identifier from that system against the taxon group – we can ignore this for now. So, fill in the title Damselflies and click the **Save** button.

Next, you need to create a species list to import the species names into. Hopefully by now the steps required to do this should be becoming familiar as they are similar to creating websites, surveys, taxon groups and so forth. Note that an Indicia species list has a concept of ownership – it is either owned by the warehouse and available for use by all websites, or it can be owned by a registered website and only available for use by that website.

1. Select **Lookup Lists > Species Lists** from the menu in the warehouse then click the **New species** list button.
2. Fill in the title of the list as Damselflies and provide an optional description.
3. In the **Owned by** drop-down, select the website registration you are using if it is not already selected then click **Save**.

[Home](#) >> [Species lists](#) >> Taxon List

New Taxon List

List Details

Title

Description

Owned by

then

This takes you back to the list of species lists page, from where you can click the **edit** link to begin working on the list. You will find the edit link in the **Actions** column, to the right of the table listing the species lists.

The Edit page for a list has several tabs depending on the optional modules that are installed on your warehouse. At the very least there is a General tab with the main list details on it, plus a Taxa tab and a Child Lists tab where you can define lists that are subsets of their parents. For now we are interested in populating the Taxa tab.

So, click on the tab and you will see that it displays another grid, this time of the taxa in the list and initially empty. Notice at the bottom that there is a New taxon button as well as a CSV file upload facility; the former for single species input and the latter for bulk upload.

5.1.3.1 Inputting a single species

Start by clicking the New taxon button and fill in the following details:

Taxon name = Banded Demoiselle

Click the **Save** button. You will see that Indicia's validation has detected that you also need to fill in at least the language and taxon group:

Indicia

Home Lookup Lists Custom Attributes Entered Data Admin Logged in as joe_bloggs

Home >> Species Lists >> http://localhost/indicia/index.php/taxon_list/edit?tab=taxa >> Taxon in List

New Taxon in List

The record could not be saved.

Naming

Taxon Name: Banded Demoiselle

Authority:

Language: <Please select>

The language is required.

Common Names: ?

Synonyms: ?

Other Details

Taxon Group: <Please select>

The taxon group is required.

General description:

Description specific to this list:

External Key: ?

Taxon Meaning ID: ?

Parent Taxon:

Sort Order in List:

Search Code:

Allow Data Entry: ☐

Save Cancel then go back to the list

So, fill in the following additional bits of information.

Language = English

Taxon Group = Damselflies

There are a few other fields available but these are the basic essentials that are required. Press the Save button.

Note: If you were setting up a more formal species list with latin and common names, then you might fill in the details as below:

Taxon name	Calopteryx splendens
Authority	(Harris, 1780)
Language	Latin
Common Names	Banded Demoiselle eng Banded Agrion eng
Taxon Group	Damselflies

Because you can specify as many common names as you like in any languages, you need to provide the language for each name by putting a pipe (|) character after each common name followed by the code for the language (which can be found by following the Admin > Languages menu item).

After pressing **Save**, you will return to the Damselflies list and should see your new species entry in the list on the Taxa tab, ready to record against. All very exciting, but in the real world we need a way of getting long lists of species names into the system. The primary way of doing this is to use the CSV upload facilities of Indicia.

5.1.3.2 Uploading a list of species

The first thing to do when uploading a list of items into Indicia is to prepare the upload file in a format which Indicia can understand. Because it is designed to run on a web server which does not understand proprietary spreadsheet file formats it is not possible to upload spreadsheet files directly into Indicia. However if you are using Microsoft Excel, OpenOffice Calc or any other reasonable spreadsheet tool you will find that it is possible to save a file as *.CSV format. This is a text based file format which the web server can easily read. The file should have column titles on the first row. To create our file for upload, simply copy the following into a text editor such as Notepad on Windows or TextEdit on a Mac:

Species
Beautiful Demoiselle
Dainty Damselfly
Small Red Damselfly
Northern Damselfly
Irish Damselfly
Southern Damselfly
Azure Damselfly
Variable Damselfly
Common Blue Damselfly
Red-eyed Damselfly
Blue-tailed Damselfly
Scarce Blue-tailed Damselfly
Large Red Damselfly

Make sure there are no blank lines at the end of your file. Now, save this file to a suitable location on your hard disk with a file extension *.csv. If you are using Notepad to do this, then make sure you

change the **Save as type** drop down to All Files (*.*). Otherwise Notepad will create a file called *.csv.txt which is quite confusing!

Return to the list's Taxa tab in your web browser if you are not already there and select the file you have just saved in the CSV upload facility at the bottom of the tab. Click Upload when done.

In order for a species to be created, we noted earlier that the very least we need is to specify the species name, language and taxon group. Our upload file only contains a list of names. Fortunately Indicia lets you specify certain appropriate fields on a global basis at the start of the import – you can set a value for each of these which applies to every single row that is uploaded. The exact fields available for setting in this way will depend on the type of data you are uploading; for species upload the species list, language and taxon group are all available. So, the first step of the Import process lets you select values for these fields to apply to every single row. Set the species list to Damselflies, the language to English and the Taxon Group to Damselflies:

Home >> Species Lists >> Damselflies >> Taxon in List import
Species Import

Before proceeding with the import, please specify the following settings that will apply to every record in the import file. Any settings that you do not specify here can be supplied in the import file on a row by row basis by mapping the setting to the appropriate column in the next step.

Import Settings

Species List: Select the list to import into.

Language: Select the language to import preferred taxa for.

Taxon Group: Select the taxon group to import taxa for.

Next

Note: If you left any of these fields unset, then you can still import data by including a value for them on each and every row of the import file. This lets you do things like import a list of species names of mixed languages or from different taxon groups.

Click **Next** when you have set these fields. The following page allows you to map columns in your import CSV file to attributes in the database. Notice on the right hand side there is a message listing any attributes you must map to before you can proceed.

Home >> Species Lists >> Damselflies >> Taxon in List import
Species Import

Please map each column in the CSV file you are uploading to the associated attribute in the destination list.

Column in CSV File	Maps to attribute
Species	<input type="text" value="<Please select>"/>

Upload

The following fields must be matched before you can continue:

- Taxon

Our import file has a single column called Species. In the drop down box next to this, you can choose from the various database fields that the Species column can be mapped to during import.

[Home](#) >> [Species Lists](#) >> [Damselflies](#) >> Taxon in List import

Species Import

Please map each column in the CSV file you are uploading to the associated attribute in the destination list.

Column in CSV File	Maps to attribute
Species	<div>Taxon</div> <div> <Please select> Taxa Taxon List Parent (lookup existing record) Taxonomic Sort Order Preferred Description Common Taxon (lookup existing record) Allow Data Entry Taxon Taxon External Key Authority Search Code Scientific Description Other Fields Synonyms CommonNames </div>

Upload

The list of database attributes you can select from is broken down by database table – in our case we want to map to the Taxon field (which stores the taxon/species name), part of the definition of a Taxon. Once you have selected the mapping, the message on the right hand side will disappear and you can press the Upload button.

With any luck you will get a message that the upload was successful. Otherwise, the Indicia uploader will upload the rows from your CSV file which it could accept, and keeps a copy of the others in a separate file along with the error message that occurred. For example, if you tried to import a taxon without a taxon name, then a validation error would occur and this row of the CSV file would be copied to the separate errors file. In this instance you are told that the errors occurred and given the chance to download the errors, correct them and re-upload just the rows which failed, completing the cycle shown in the following diagram.

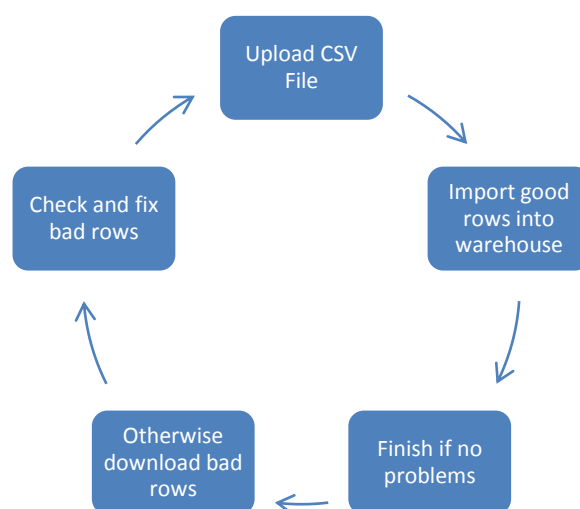


Figure 2 - illustration of the workflow when uploading data with invalid rows

Having successfully completed the import, you should see the following message:

[Home](#) >> [Species Lists](#) >> [Damselflies](#) >> Taxon in List import
Species Import
The upload was successful.

You can then use the breadcrumb trail at the top of the page shown below to return to the Damselflies species list details page.

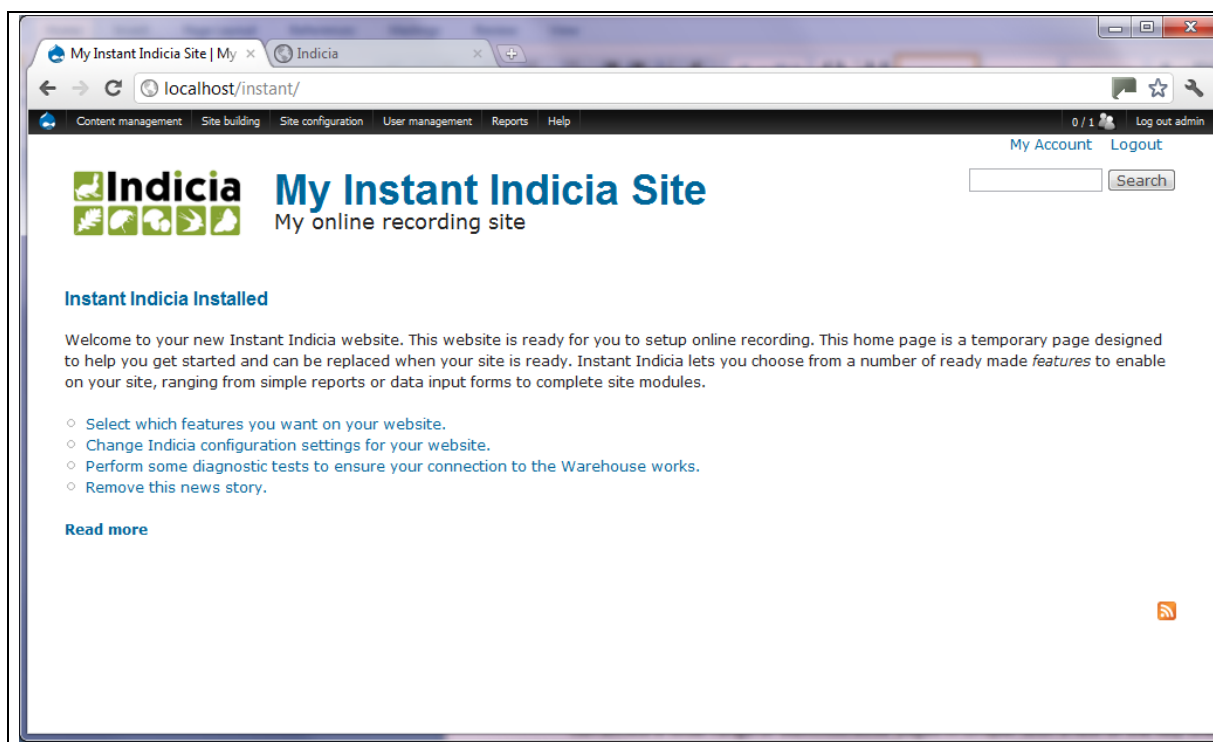
Note: A breadcrumb trail is typically shown at the top of a web page to show the hierarchy of pages you have come to in order to get to the current page. Each page in the hierarchy is represented as a link back to that page for quick navigation. For example:

[Home](#) >> [Species lists](#) >> [UK Hymenoptera](#) >> *Bombus terrestris*

Then, click on the Taxa tab and check that the species have imported successfully.

5.2 Quick Site Familiarisation

We'll now take a quick tour of the various parts of your new Instant Indicia site. In your web browser, start a new tab and navigate to the folder of your Instant Indicia installation (e.g. <http://localhost/instant/> if you are running it on your local machine). If you are not already logged in, then please log in with the admin **Drupal login** using the **Login** link in the top right corner. This login was the one you set up during installation of Drupal, or will have been provided for you.



5.2.1 Admin Menu



You will notice a black bar across the top of the page containing a rather complex looking set of menu options. This is the Drupal admin menu which has been inserted at the top of your page by the **Admin Menu** module. If a normal user accesses the site they will not see this menu. From here you can access a wide range of administrative pages in Drupal with a few of the key ones mentioned below:

Menu item	Description
Content management > Content > List	Displays a list of all the content you have created on the site.
Content management > Create content	Provides access to the facilities for creating various types of content on your website. This includes normal pages and stories as well as Indicia powered pages.
Site building > Features	Provides access to the Features management page where you can enable the various building blocks of an Instant Indicia site. More on that later.
Site building > Menus	Provides access to Drupal's menu management tools. Drupal divides its menus into several units, the ones you are likely to want to use at some point are called Primary

	Links and Secondary Links.
Site building > Modules	This page lists the various modules available on your Drupal installation with checkboxes for enabling or disabling them. More information o this can be found at http://drupal.org/documentation/install/modules-themes .
Site building > Themes	This section of Drupal lets you configure the appearance of the entire site. There are many Drupal themes available which are free to download and install, or you can select an existing one and customise it to your needs. For more information see http://drupal.org/documentation/install/modules-themes .
Site configuration > IForm > Settings	Provides access to the settings page for the IForm module, where you can configure warehouse access, maps, API keys (which are required to allow usage of various services such as the Bing map layers and GeoPlanet place search service) and so forth.
Site configuration > IForm > IForm diagnostics	This page runs some quick checks on your Indicia configuration, for example it tests that the connection to the warehouse works.
Site configuration > Site information	This page lets you change various Drupal specific site settings such as the logo, title and slogan.
User management > Users	This page lets you view a list of all your site users, from where you can modify their permissions, ban them or remove them etc.
Reports > Recent log entries	This report provides a list of entries in the Drupal log. Events and other significant events which occur on your Drupal site are all written to this log.

Before going any further spend a few moments looking through these menu items to familiarise yourself with what is on offer.

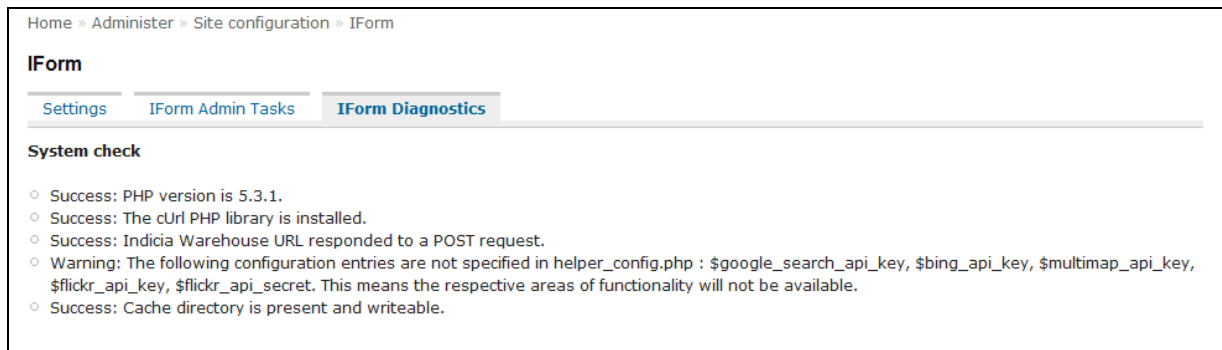
5.2.2 Configure Indicia to use your website registration

Before your web pages can communicate with the warehouse, you need to configure Instant Indicia to use the website registration you created on the warehouse earlier. Go to the **Site configuration > IForm > Settings** page. We need to provide the information required to let our copy of Instant Indicia use the website registration we just created on the warehouse. On this page, there is a control for the Indicia **website ID** and subsequent controls for setting the **password** (an initial default value was set up in section 4.2.5 “Install Instant Indicia” on page 28).

Please fill these in with website ID and password of the website registration which you created on the warehouse earlier and noted at the back of this document (in section 5.1.1 “Setting up a website registration” on page 32) then save the page.

More information on the other settings on this page can be found in the Installing Instant Indicia section on page 16.

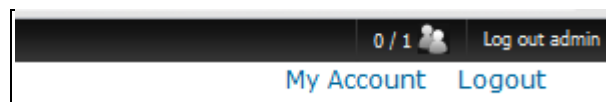
Now, visit the **Site configuration > IForm > IForm diagnostics** page to check everything is working OK. You should see something like this:



There are a few warnings about missing API keys but don't worry about these for now as they are optional and only affect the respective areas of functionality. For example, without the Bing API Key you cannot access Bing maps, but the Google map layers are still available as they do not require a key. However if you have any other warnings, then you will need to review and resolve them before proceeding.

5.2.3 Secondary links & user logins

Working down the page, the next section on our page is the Secondary Links menu (called secondary because there is a Primary Links menu on the page as well, though we are not using that yet).



The default theme provided with Instant Indicia puts these as links in the top right of the page, though with a different theme selected they may appear elsewhere on the page. Instant Indicia uses the Secondary Links menu to provide access to the site login functionality, including registration, logout and access to a My Account page. Follow these steps to create a new user for accessing Drupal and familiarise yourself with this part of the system:

- Select **User Management > User settings** from the admin menu.
- This page provides various options regarding how user accounts are handled. There are also various modules which further extend the functionality, for example the CAPTCHA module (<http://drupal.org/project/captcha>) requires the user to fill in a code displayed on the screen during the registration process and helps to prevent automatic spam bots from signing up to the website to post spam. The built in functionality is more than adequate for this tutorial.
- Untick the box titled **Require e-mail verification when a visitor creates an account** then click the Save configuration button at the bottom of the page. Disabling this box allows users to sign up to your site without an email account confirmation – since this tutorial does not cover setting your website up for email this is the simplest approach.

- Click the **Logout** link. You will be returned to the Home page, but note that the secondary links menu has changed to show links for **Register** and **Login** instead of **My Account** and **Logout**.
- Click the **Register** link. This takes you to the registration page with boxes to input your username, email address and password. Fill these in and click **Create new account**. There is a space for keeping a note of your **Drupal login** usernames and passwords at the back of this tutorial.
- You've now created the new user. Notice that although you are now logged in as the new user and the secondary links menu is showing **My Account** and **Logout** again, the admin menu does not appear because you do not have any administrative rights over the system.
- Click the **Logout** link. Log back in as the admin **warehouse login** (you will either have set up during installation if you installed the warehouse yourself, or will have been given this login).
- Select the **User management > Users** menu item. Click the edit link alongside the new user you have just registered.
- You are now viewing the profile of the selected user. A little way down the page there is a section title **Roles** which lets you choose which roles the user is allowed to undertake. The default, called **authenticated user**, is a fixed one present in all Drupal installations which means any logged in user. Tick the box for **admin user** and press Save at the bottom of the page.
- Now logout and log back in again as the newly registered user. This time, the user has access to administrative functions in Drupal so can now see the full admin menu, because they are a member of the admin user role.

5.2.4 Site Search

By default the site search facilities are displayed at the top right of the page template but like anything else on the page this can be changed by your theme. This provides site wide search facilities.

You might imagine that typing in a word from the Home page such as welcome and clicking search would take you to search results that include the Home page. Try it and you will see that you actually get an empty results page. Why? Put simply, if you wanted to search every bit of content across the whole database then the web server would grind to a halt if you searched anything other than a very small website. The information that can be displayed on the page is held in so many different places in the database it is not practical to search it in this way. The answer is for Drupal to build an index which lists all the words used on the site with links to the pages that contain them. Doing this is just like using the index at the back of a book as opposed to looking through the book page by page. Drupal does not build this index unless you ask it to. To do this, you must access a special page called **cron.php** which sits at the root of your website. This page fires off any tasks that need to be run periodically on your website, including indexing the site search.

Try visiting the cron.php page which is at the root of your site's path. To find the correct page you need to append cron.php to the site path, so for example:

- if your site pages are accessed under the URL <http://www.mysite.com> then access <http://www.mysite.com/cron.php>
- if your site pages are accessed under <http://localhost/instant> then go to <http://localhost/instant/cron.php>.

This will show a blank white page which seems pretty unhelpful, even if the site re-index has been performed as requested. The reason for this is that `cron.php` is not really designed to be accessed manually in this fashion, rather it is designed to be accessed by a scheduled automated task, e.g. once per hour or once a night. This means the search index will be kept up to date for you. Although setting up automatic running of `cron` is beyond the scope of this tutorial, if you need more information on this you can find it at <http://drupal.org/node/120625>.

Once you have accessed the `cron.php` page, try searching for Welcome again to see what happens:

5.2.5 Home page content area

Aside from the banner, the remainder of the web page consists of the *content area* which displays the content that changes depending on which page you are on. Visit the Home page and you will see that the content area shows a note about Instant Indicia being installed and offering a few handy links to help get you started:

Instant Indicia Installed

Welcome to your new Instant Indicia website. This website is ready for you to setup online recording. This home page is a temporary page designed to help you get started and can be replaced when your site is ready. Instant Indicia lets you choose from a number of ready made *features* to enable on your site, ranging from simple reports or data input forms to complete site modules.

- [Select which features you want on your website.](#)
- [Change Indicia configuration settings for your website.](#)
- [Perform some diagnostic tests to ensure your connection to the Warehouse works.](#)
- [Remove this news story.](#)

[Read more](#)

We'll have a look at these links later, but first it's worth spending a bit of time to understand how Drupal manages site content such as web pages and news stories.

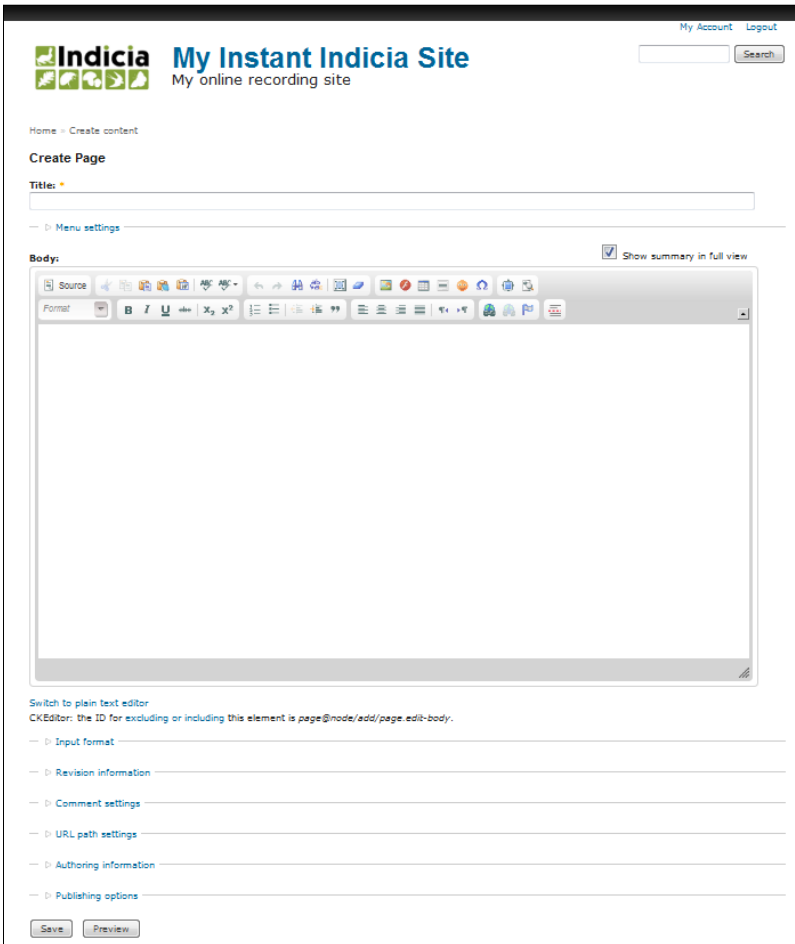
5.3 Adding content

In Drupal, creating content normally involves creating **nodes**. A node is a piece of content usually at least with a title and body text. A node could map directly to a page on your website, or could just be a snippet of information used to build a composite page. The full power of Drupal's nodes system is outside the scope of this course but if you are interested in learning more some key modules you could look into include:

- Content Construction Kit (CCK) - <http://drupal.org/project/cck>
- Views - <http://drupal.org/project/cck>
- Panels - <http://drupal.org/project/panels>

As a quick introduction to the content side of Drupal, follow these steps to create a page for a fictitious Wimborne Natural History Society:

1. Select **Content management > Create content** from the admin menu.
2. The page you are on shows the available **content types** which you are allowed to create. We want to create a normal page, so select the link to create a **Page** (do not choose '**Indicia Page**' as we will tackle this later), which displays the Drupal page for editing content:

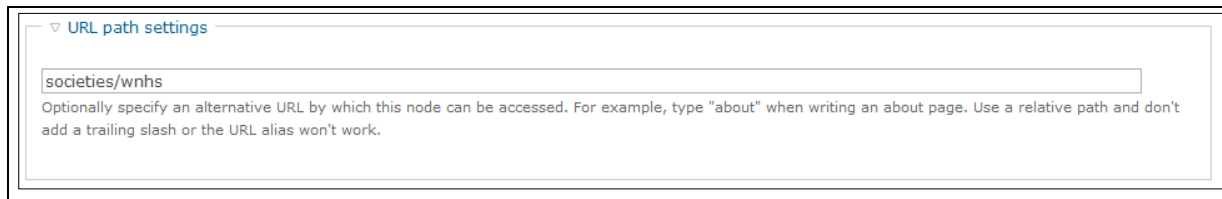


The screenshot shows the 'Create Page' form in the Indicia interface. The header includes the Indicia logo, the site name 'My Instant Indicia Site', and the tagline 'My online recording site'. There are links for 'My Account' and 'Logout', and a search bar. The breadcrumb trail is 'Home > Create content'. The form has a 'Title' field with a red asterisk indicating it is required. Below the title is a 'Menu settings' link. The 'Body' field is a large text area with a rich text editor toolbar. A checkbox labeled 'Show summary in full view' is checked. Below the body field is a link to 'Switch to plain text editor' and a note about CKEditor. At the bottom, there are several expandable sections: 'Input format', 'Revision information', 'Comment settings', 'URL path settings', 'Authoring information', and 'Publishing options'. At the very bottom are 'Save' and 'Preview' buttons.

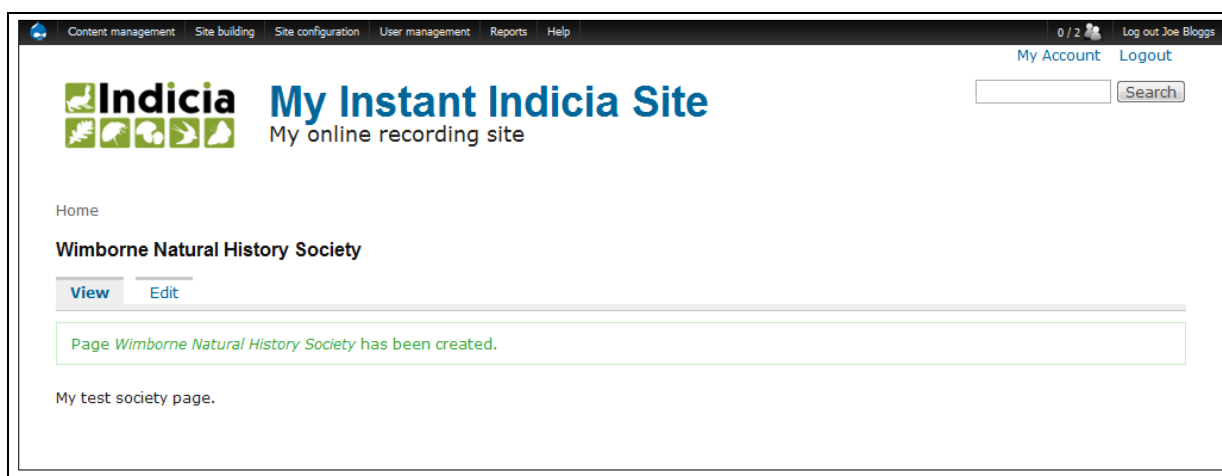
3. Enter the title, Wimborne Natural History Society, and fill in a brief description. Instant Indicia has installed a toolbar for editing text such as the description, so you can easily set

text formatting such as bold, italic, underline and other font styles. If you are interested, this is provided by a module called CKEditor.

4. There are a bunch of other settings on this page. For now we will use the **URL path settings** section to specify the path as “societies/wnhs” and leave the other settings in their default state. Note that the **pathauto** module could be installed to automate this setting.



5. Once you are done, press the Save button and that's it, your page is created!



If your site is running from a URL such as <http://www.mysite.com> then you would expect that Drupal would create your new page at a path <http://www.mysite.com/societies/wnhs>. Indeed, Drupal will do this if it can. However, you may find your page has appeared at a path along the lines of <http://www.mysite.com/?q=societies/wnhs>. If so, this means that your Drupal setup is not configured to use the clean URLs setting, which makes site URLs easier to read and remember by omitting the ?q= part.

This setting is found by selecting **Site configuration > Clean URLs** from the admin menu. However, enabling this setting depends on the server configuration so it may not be possible to enable it without performing some configuration tasks on the server. For more information on this see <http://drupal.org/getting-started/clean-urls>.

Now, for a comparison try adding another piece of content by creating a **Story** about your new site being launched. The steps are the same as before apart from you are selecting a different content type. Once you have created the content, visit your home page and you should see that the story has been added to the page, but not the **Page** you created earlier. The reason for this is that the **Publishing Options** configuration setting, available when you edit or create the node, has different

default settings for stories than pages. For stories, the **Promoted to front page** option starts off ticked:

▼ Publishing options

☒ Published

☒ Promoted to front page

☐ Sticky at top of lists

5.4 An introduction to Features

As we have seen, the majority of what you see on a Drupal website consists of content stored in nodes. In fact, Indicia powered forms and reports are themselves just special types of nodes. One of the key selling points of Instant Indicia is that it is supplied with a list of ready-made **Features**, each of which forms a building block that can be used to construct your site. A feature can include Indicia forms and reports as well as other node content, but it can also do things like install Drupal modules, provide configuration settings and so forth.

5.4.1 Tabbed Data Entry Form

Let's make a start to Indicia enable our site by adding some features. To do this, first select **Site building > Features > Manage** from the admin menu. On the left of the page you can see a number of different categories of feature with the contents of each category listed on the right:

My Account Logout

Indicia My Instant Indicia Site
My online recording site

Home » Administer » Site building

Features

Manage Review IForm Features Create feature

A "Feature" is a certain type of Drupal module with contains a package of configuration that, when enabled, provides a new set of functionality for your Drupal site. Enable features by selecting the checkboxes below and clicking the Save configuration button. If the configuration of the feature has been changed its "State" will be either "overridden" or "needs review", otherwise it will be "default", indicating that the configuration has not been changed. Click on the state to see more details about the feature and its components.

[more help...]

Feature	Signature	State	Actions
<input type="checkbox"/> Verification A report listing incoming records with facilities for reviewing, verifying and rejecting them.	Unavailable 6.x-1.0-alpha1	Disabled	Recreate

Save settings

Have a quick look through the categories to see what is on offer. We'll start by enabling a simple data entry form, **Tabbed Data Entry Form**. Tick the box to enable this feature (under the **Indicia Input Forms**) section then click Save settings.

Although Instant Indicia does its best to let you set up these building blocks of your site with as little effort as possible, there are still a few bits of configuration that cannot be avoided such as which species list to use for data entry. In fact, at the top of the page you will now see a message providing you with a link to the **Indicia Features Review** page which lets you check through the recently enabled Indicia forms and provide configuration settings.

You have activated a feature which contains some Indicia pages. Please visit [Indicia Features Review](#) to check the settings that are specific to the site.

Follow the link and you will see a list of the forms which need configuration and review:

We'll take a look through each of the configuration settings required for our new form. First, expand the **Georeferencing** section. This is the section which configures the place search control that is provided alongside the map, allowing you to quickly zoom the map to a town or village for example. The default settings provided are for searching anywhere in Great Britain. If you wanted to force the place search to prioritise a county, for example, you could input it in the **Preferred area for georeferencing** box as follows:

You can, of course, just leave the default settings on this section if they are appropriate. Next, expand the **Species** configuration section. This is where you configure the species list that will be used for data input. Because we are using a grid input system on this form there are actually 2 lists here – the first is the list which will be pre-populated into the grid, the second is the list which the user can pick from to add extra rows to the grid. You can set up the input grid in one of several ways:

- Provide a grid with a list of species to tick off, such as a list of Damselflies.
- Provide a grid with a list of species to tick off, plus a list of additional species that you can pick from to add to the bottom of the grid. For example, the list of Damselflies could be added to the grid by default, but the recorder is able to add anything from a list of all “river flies” to the grid depending on what else they recorded.
- Provide an empty grid, with a list of species that they can add to the grid as required.

We'll use the latter approach, by setting the **Extra species list** option to the Damselflies list we created earlier.

Species

Initial Species List:

<please select>

The Indicia ID for the species list that species can be selected from. This list is pre-populated into the grid when doing grid based data entry.

Extra Species List:

Damselflies

The Indicia ID for the second species list that species can be selected from. This list is available for additional taxa being added to the grid when doing grid based data entry.

The final configuration section required for this form is the **Other IForm Parameters** section. Expand this section and select the survey you want to input data into from the drop down (there should be an option to select the Damselflies survey you created earlier).

Other IForm Parameters

Survey:

Damselflies

The survey that data will be posted into.

Tip: If this option does not appear, then the most likely cause is that you did not fill in the website registration details correctly under **Site configuration > IForm > Settings** on the admin menu. Refer to section 5.2.2, “Configure Indicia to use your website registration” for more information.

Now, press the **Save Form Settings** button at the bottom of the page. The page will reload, but this time with a message that this form does not need further configuration. You can follow a link from here to **view the form** and check it works (note it has also been added to your Primary links menu just beneath the page banner). Let’s try it out now:

1. Click **view the form** or the **Submit Sightings** menu option. The form will load. Note that this is a fairly simple form with 3 tabs, roughly corresponding to the what, where and when aspects of a biological record.
2. Start typing ‘a’ into the box in the Species column of the grid. Indicia will search the species list and find any matches, then present them for you in a drop down below the box. In this case, the only match is Azure Damselfly so select that.

Tip: for rapid keyboard input, you can use the up down arrows to navigate in the list then press Return when over the species you want. This will add a new row with the input focus in it ready to type the next species in.

3. On the **Where was it?** tab, type the name of a town or village in the **Search for place on map** box then click Search. If there are multiple matches found you will see a panel expand on the page letting you select from one of them (click Close when you have finished), but if there is only one place then the map will zoom straight in.
4. Click on the map to set an exact grid ref. You can drag the map to pan, double-click to zoom, or shift-drag to zoom to a bounding box. The size of the grid ref selected will change depending on how zoomed in you are. Alternatively you can type in a grid reference directly.

Submit Sightings

[View](#)
[Edit](#)

What Did You See?
Where Was It?
Other Information

Please provide the spatial reference of the record. You can enter the reference directly, or search for a place then click on the map.

Search for Place on Map:

Spatial Ref:

- On the **Other Information** tab, click on the **Date** input box and pick a date.
- Click the **Save** button when you are done.

As the feature we have enabled is minimalistic, the page will reload with a simple message thanking you for the submission, and letting you continue and enter a new record. It is of course possible to configure Indicia to take you to a dedicated “thank you” page, perhaps showing a report of recent records or a map of your record in the context of other submitted records.

Now, add a second record of Azure Damselfly, but this time once you have picked the species, click the **Add images** link that appears in the grid. This will expand the grid row to let you upload photographs pertaining to the record in question. Click the **Select file(s)** button and browse to find an image to upload. Click the **Open** button when you have selected the right file. You can also input a caption for the image:

Submit Sightings

View

Edit

What Did You See?

Where Was It?

Other Information


Please enter the species you saw and any other information about them.

Species	Present	Images
X Azure Damselfly Damselflies	<input checked="" type="checkbox"/>	

Files

Select file(s)

azure_damselfly.jpg (141 KB)



Caption:
Resting on grass

select a species first

Now, proceed to fill in the rest of the record details and click **Save** when done.

5.4.2 An Introduction to Custom Attributes

It's about time to introduce one of the more powerful aspects of Indicia to you. In Indicia, the information that is required to capture a biological record is absolutely minimal – simply “what”, “where” and “when”. These are the things which all records have in common. You might expect there to be a “who” aspect to this to capture the recorder information but remember that Indicia can be configured to run a data entry form for an anonymous survey (e.g. you would not necessarily want to force school children to input their name if running on a kiosk in a museum for education rather than recording purposes). Also, when the “who” bit of the record is actually captured, the nature of the information will depend on the setup surrounding your survey. For example, the survey might be running on Instant Indicia and require a login, in which case the user is identified by ID or username, or the survey might run on a standalone page in which case the user has to input their first name and surname.

The data model by default has no provision for additional attributes such as weather, abundance, habitat information, nor does it include attributes for the user information mentioned above. But there is a powerful mechanism for extending the information you can capture with each record called **custom attributes**.

This means that you can define your own attributes and add them to the definition of an occurrence record, sample or site within the context of your specific survey.

Follow these steps to add a custom attribute for Weather to your survey:

- 1) Using a new tab in your browser, log in to the Indicia Warehouse you are using with the user account you created earlier.
- 2) Select **Lookup Lists > Surveys** from the menu.
- 3) Click the **Setup attributes** link in the grid next to your Damselflies survey. The screen should show this:

- 4) At the top of the form there is a **Display attributes for** drop down which lets you select from attributes for samples, occurrences and locations. The **Go** button reloads the page for each type. When viewing samples, select the existing attribute called **Weather** and click **Add existing attribute**.
- 5) The attribute is displayed in the area above. We'll take a look at the mechanics of this area later, but for now click the **Save** button that has appeared.

Now, return to your Instant Indicia tab and reload the Submit Sightings form by clicking the link in the menu under the banner. If you look on each of the 3 tabs, you will probably find that the Weather attribute has *not* appeared, despite the fact that the data entry form we are using is designed to automatically display the attributes you add to the survey. Why?

When Indicia loads information from the warehouse it normally has to do so across the internet because the server hosting your website and the warehouse can be in two completely separate locations. This is never going to be as fast as loading information direct from a local database. To help improve performance, when Indicia accesses information from the warehouse that does not often change it *caches* the information locally. In effect, after the first time this information is requested, it creates a local copy of the information and uses that in future, at least until the information is considered too old and *expires*. This caching mechanism includes the definition of the survey.

To get round this you need to temporarily disable the cache when loading the current form, or you can completely empty the cache.

To temporarily disable the cache:

Modify the URL of the current page so that it includes a parameter called **nocache**. There is no need to specify a value. For example:

<http://www.mysite.com/submit-sightings-tabbed> becomes <http://www.mysite.com/submit-sightings-tabbed?nocache>

or

<http://www.mysite.com/?q=submit-sightings-tabbed> becomes <http://www.mysite.com/?q=submit-sightings-tabbed&nocache>

Notice that we are appending &nocache or ?nocache to the URL depending on whether the URL already contains query parameters or not.

To completely empty the cache:

Select **Site configuration > IForm > IForm Admin Tasks** from the admin menu. Click the **Clear Indicia cache** button.

Once this is done, check the Submit Sightings page Other Information tab and you should see that a box for inputting the weather has magically appeared.

5.4.3 My Images

Hopefully you can see that creating a data input form using Instant Indicia is pretty quick and easy, especially once you have got round the initial learning curve of using Drupal. So far our site lets us capture biological records but not to do anything with them. There is also no incentive for recorders to input data, since the records go into a “black hole” which they can’t get anything out of.

To remedy these issues, return to the Features page (**Site building > Features** on the admin menu, or there is a link on the home page). Select the **Indicia Reports** section and enable **My Images**. Click the **Save settings** button when done. When the page reloads you will see a **My Images** menu item has appeared, but you will also see the following message:

- You have enabled the My Images feature, which adds a My Images report to the menu allowing a logged in user to browse their own images. In order for this to work, please ensure that the survey you are recording against has the *CMS User ID* attribute linked to it. Otherwise the My Images report will display no records. You might also like to link the *email* and *CMS Username* attributes in order to store enough information against the record to be able to identify the recorder.

The **My Images** feature needs the survey you are using to have an attribute called CMS User ID attached to it, otherwise **My Images** cannot work out which records belong to which user and therefore cannot filter records to the current logged in user.

In order to add this attribute to your survey, return to the warehouse and use the same steps that we undertook earlier for the Weather attribute to add the CMS User ID attribute, the CMS Username attribute and the Email attribute to your survey. The latter two attributes are optional but allow the user’s **Drupal login** name and email address to be stored with the record. Note that all 3 of these attributes are handled in a special way because the information required to populate them is

available in the user's profile. Therefore there is no need for them to appear on the form during data entry – they are handled “behind the scenes”.

The records we created earlier do not have the CMS User ID tagged against them so will not appear in **My Images**. In order to test the **My Images** page, make sure you clear the Indicia cache again so that the survey picks up the newly enlarged attribute list - select **Site configuration > IForm > IForm Admin Tasks**, and click the **Clear Indicia cache**. Then submit another test record of an Azure Damselfly with an image. If you follow the My Images link then you should see a report showing you your uploaded image with some basic filtering functions.



Indicia My Instant Indicia Site
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Home

My Images

View Edit

Report Parameters

Date From:

Date To:

Taxon Group: Select the taxon group to return data for, or leave for all groups

Run Report

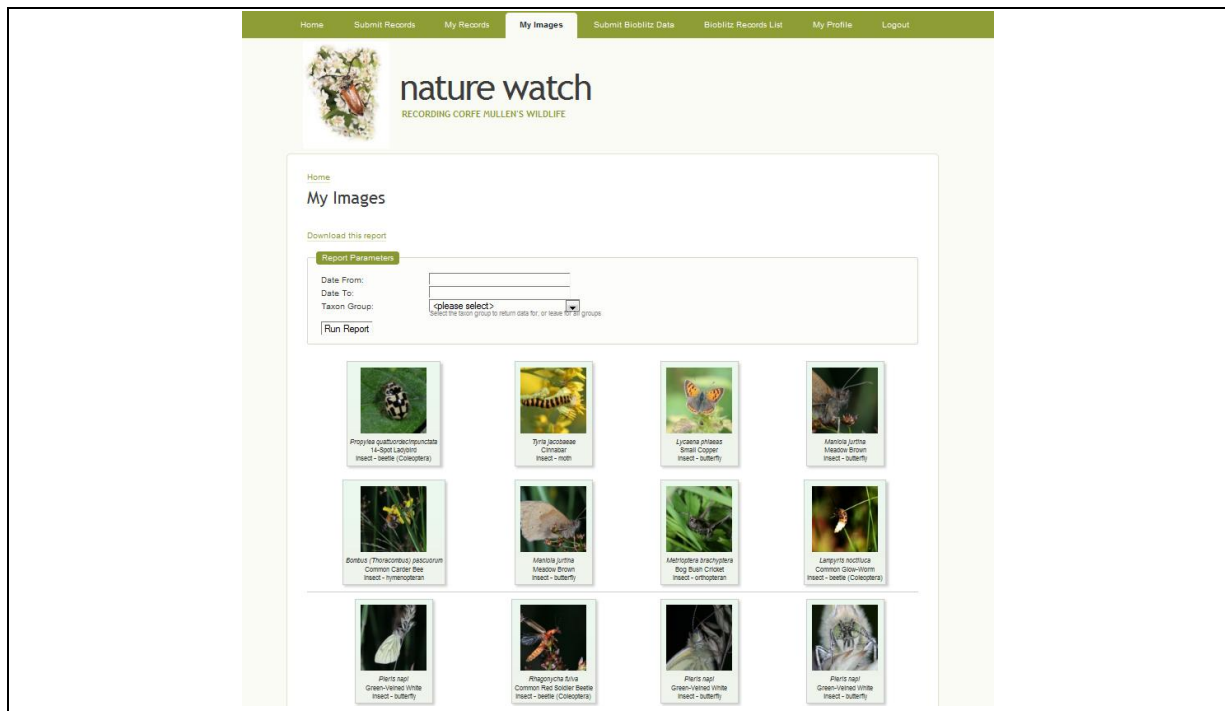


Azure Damselfly

first prev 1 next last Showing records 1 to 1 of 1


Download this report


It's a bit dull with only one image, but to this can be quite a way for recorders to keep tabs on their photos. If you found that the image did not appear, please make sure you cleared the Indicia cache before entering the record otherwise the form does not contain the hidden information linking it to the logged in user. Here's a view of part of my own photo-stream to whet your appetite:




There are a few bits of out-of-the-box functionality on this page. Firstly, the filter form lets you filter by date or taxon group (the options here can of course be changed). Secondly once the number of images goes over a single page, a pagination footer is added automatically. Also, clicking on any image displays a zoomed in “lightbox” of the image:


[Home](#)
[Submit Records](#)
[My Records](#)
[My Images](#)
[Submit Bioblitz Data](#)
[Bioblitz Records List](#)
[My Profile](#)
[Logout](#)


nature watch

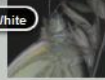





Pieris napi
Green-Veined White
Insect - butterfly



Rhagonycha fulva
Common Red Soldier Beetle
Insect - beetle (Coleoptera)



Pieris napi
Green-Veined White
Insect - butterfly



Pieris napi
Green-Veined White
Insect - butterfly

5.4.4 Using the Discussion Forum feature

Later we'll take a look at some of the more advanced ways you can configure your survey input forms but first let's take a look at how you might extend your site's facilities to include a discussion forum.

The Features page Indicia Miscellaneous Features section lists a feature called Discussion Forum. So, from the site Home page select the link **Select which features you want on your website**. From the Features page select the **Indicia Miscellaneous Features** section:

My Account Logout

 **My Instant Indicia Site**
My online recording site

Search

Submit Sightings My Images

Home » Administer » Site building

Features

Manage Review IForm Features Create feature

A "Feature" is a certain type of Drupal module with contains a package of configuration that, when enabled, provides a new set of functionality for your Drupal site. Enable features by selecting the checkboxes below and clicking the Save configuration button. If the configuration of the feature has been changed its "State" will be either "overridden" or "needs review", otherwise it will be "default", indicating that the configuration has not been changed. Click on the state to see more details about the feature and its components.

[more help...]

[Indicia Data Management](#)
[Indicia Input Forms](#)
[Indicia Miscellaneous Features](#)
[Indicia Reports](#)
[Testing](#)

Feature	Signature	State	Actions
<input type="checkbox"/> Discussion Forum A basic template for a discussion forum on your site	Unavailable 6.x-1.0-alpha1	Disabled	Recreate
<input type="checkbox"/> Home Page A default home page including latest news and photos.	Unavailable 6.x-1.0-alpha1	Disabled	Recreate
<input checked="" type="checkbox"/> Indicia Quickstart A feature that provides user roles and other configuration useful for all Indicia sites. Does not provide any pages in itself. It is recommended that you leave this feature enabled.	Unavailable 6.x-1.0-alpha1	Default	Recreate
<input checked="" type="checkbox"/> Indicia Welcome A news story introducing Instant Indicia with some handy links for getting started	Unavailable 6.x-1.0-alpha1	Default	Recreate
<input type="checkbox"/> Registration Terms of Use Sets up some terms of use that must be agreed with before a user can register on the site.	Unavailable 6.x-1.0-alpha1	Disabled	Recreate

Save settings

Tick the box for the Discussion Forum and click Save settings. After a few seconds the page will reload but with a new link, **Forum**, in the primary links menu area.

Follow the forum link to view your new forum:

The screenshot shows the Indicia website interface. At the top, there's a header with the Indicia logo, the site title 'My Instant Indicia Site', and the tagline 'My online recording site'. Navigation links include 'Submit Sightings', 'My Images', and 'Forum'. A search bar is also present. Below the header, there's a 'Home' link and a 'Forums' section. A 'Mark All Read' button is visible. A table lists forum categories: 'Miscellaneous' with 0 topics and 0 posts. Below the table, there's a 'What's Going On?' section showing 1 active user and a welcome message for 'Joe Bloggs'. At the bottom, there are three status icons: 'Forum Contains New Posts', 'Forum Contains No New Posts', and 'Forum is Locked'.

The forum is divided into sections though after installation, there is only one section called **Miscellaneous**. We'll look at setting up our own sections later, but first let's do a test post. Click on the **Miscellaneous** link to view this section of the forum. You'll see a pretty simple page showing that the Miscellaneous forum section is empty:

The screenshot shows the 'Miscellaneous' forum page. It has a breadcrumb trail 'Home > Forums'. The title 'Miscellaneous' is at the top. There are two buttons: 'New Topic' and 'Mark All Read'. Below these are four columns: 'Topic', 'Replies', 'Created', and 'Last reply'. The table is currently empty. An RSS feed icon is in the bottom right corner.

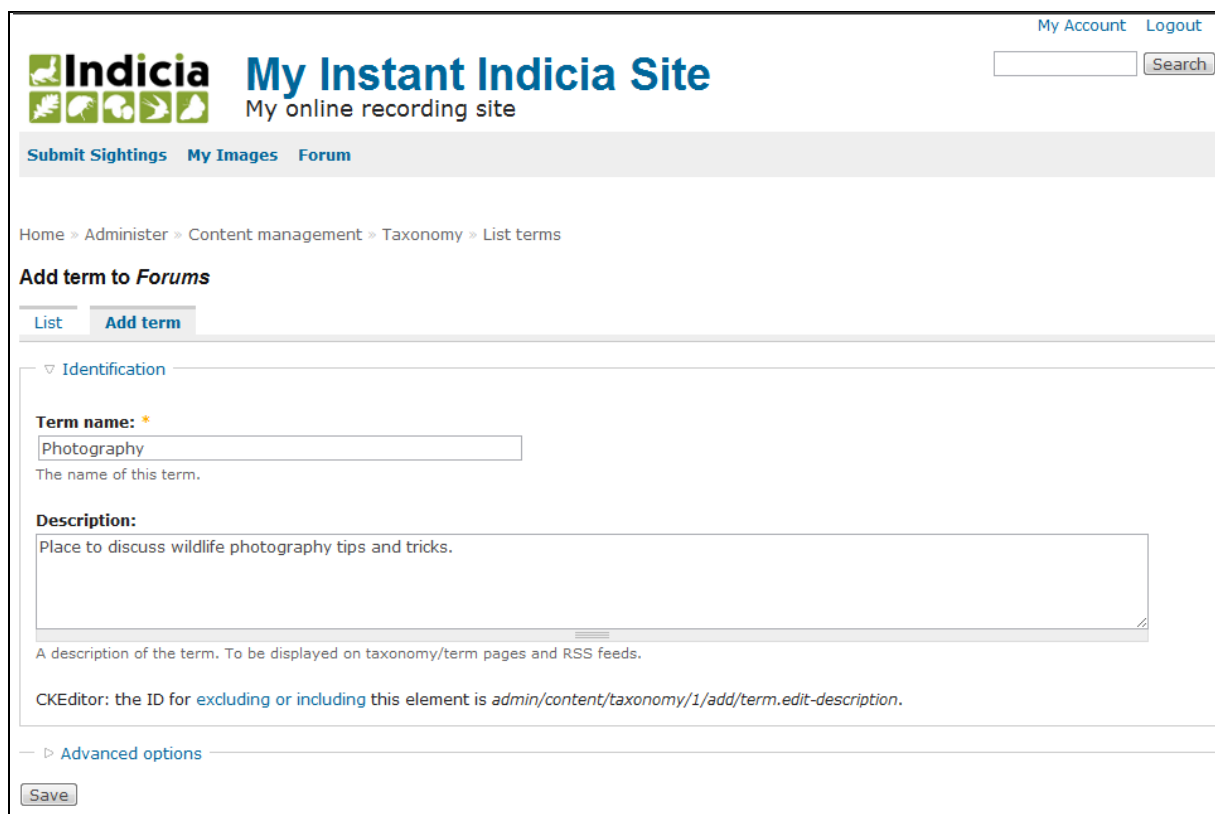
Click the New topic button. This takes you to the Create forum topic page. Fill in a post subject and body. Note that there are quite a few extraneous options on the page, such as a section letting you make this post appear as an entry on the menu. You would not expect your normal users to see these - don't worry as you are only seeing the options because of the level of permissions that Drupal is granting you. If you were logged in as a normal user then you would see a far simpler version of the form. Save the topic you have created, then feel free to try creating a new user and logging in as them to see what the form would look like. Make sure you log back in with admin rights before proceeding if you do this.

Next, we want to take a look at the process for creating your own list of forum sections. The Drupal Forum module, which this feature is based on, uses the Taxonomy module provided with Drupal, to control the list of sections. Taxonomy in the Drupal sense does not mean taxonomy as applied to biological classification, rather it relates to the classification of content. Think of it as a glorified form of tagging. The traditional way of using Taxonomy in Drupal is to create one or more lists of terms

(called vocabularies) and to tag them against content. Tags can then be used to search, filter and otherwise organise the content. In the case of the forum module, the terms in Taxonomy will be used to define a structure for the forum content, with each post being “tagged” with the relevant term.

Select **Content management > Taxonomy > List** from the admin menu to access the Taxonomy page, then click the **List terms** link by the Forums vocabulary. You will see there is a single term, Miscellaneous, which matches our existing forum section. Click the **Add term** link near the top.

In the Add term page, enter Photography in the Term name box, then fill in a description along the lines of “Place to discuss wildlife photography tips and tricks.”.



The screenshot shows the 'Add term to Forums' page in the Indicia site admin interface. The page has a header with the Indicia logo, 'My Instant Indicia Site', and navigation links like 'Submit Sightings', 'My Images', and 'Forum'. The breadcrumb trail is 'Home > Administer > Content management > Taxonomy > List terms'. The page title is 'Add term to Forums'. There are two tabs: 'List' and 'Add term', with 'Add term' being the active tab. The 'Identification' section contains a 'Term name' field with the value 'Photography' and a 'Description' text area with the value 'Place to discuss wildlife photography tips and tricks.'. Below the description is a note about the CKEditor ID. At the bottom, there is an 'Advanced options' section and a 'Save' button.

My Account Logout

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Submit Sightings My Images Forum

Home > Administer > Content management > Taxonomy > List terms

Add term to Forums

List Add term

Identification

Term name: *
Photography
The name of this term.

Description:
Place to discuss wildlife photography tips and tricks.

A description of the term. To be displayed on taxonomy/term pages and RSS feeds.

CKEditor: the ID for excluding or including this element is admin/content/taxonomy/1/add/term.edit-description.

Advanced options

Save

Now, return to the Forums link on the menu and you will see that the forum now reflects the structure of the Forums vocabulary, with the added Photography section.

What if we want a more complex forum structure, with sections and sub-sections? The Discussion Forum feature supports this too. Try adding 2 new terms to the Forums vocabulary, one for Macro Photography and one for Bird Photography. Return to the List terms page for the Forums vocabulary and it should look like this:

Home » Administer » Content management » Taxonomy

Terms in *Forums*

List Add term

Forums is a single hierarchy vocabulary. You may organize the terms in the *Forums* vocabulary by using the handles on the left side of the table. To change the name or description of a term, click the *edit* link next to the term.

[more help...]

Name	Operations
+ Bird Photography	edit
+ Macro Photography	edit
+ Miscellaneous	edit
+ Photography	edit

Save Reset to alphabetical

Now, use the crosshair icon to the left of the Macro and Bird Photography terms and drag them as children of the Photography term:

Home » Administer » Content management » Taxonomy

Terms in *Forums*

List Add term

Forums is a single hierarchy vocabulary. You may organize the terms in the *Forums* vocabulary by using the handles on the left side of the table. To change the name or description of a term, click the *edit* link next to the term.


[more help...]

Name	Operations
+ Miscellaneous	edit
+ Photography *	edit
+ Bird Photography *	edit
+ Macro Photography *	edit

* Changes made in this table will not be saved until the form is submitted.

Save Reset to alphabetical

Click **Save** when you are done then click on the Forums menu item. You will see that the forum now shows the hierarchical relationship between the sections.



My Instant Indicia Site





My online recording site

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[Logout](#)




[Submit Sightings](#)
[My Images](#)
[Forum](#)

Home

Forums

Forum	Topics	Posts	Last post
 Miscellaneous	1	1	Anyone seen ... by Joe Bloggs 5 min 56 sec ago
 Photography Place to discuss wildlife photography tips and tricks.	0	0	n/a
 Bird Photography	0	0	n/a
 Macro Photography	0	0	n/a

What's Going On?
 Currently active users: 1 (1 users and 0 guests)
[Joe Bloggs](#)
 Statistics
 Topics: 1, Posts: 1, Users: 2
 Welcome to our latest member, [Joe Bloggs](#)

 Forum Contains New Posts
  Forum Contains No New Posts
  Forum is Locked

There are lots of ways to modify the forum functionality provided, which initially is fairly basic. We'll take a look at a couple. We'll rename the Forum link in the menu to something like Chat to make our site more informal.

- 1) First, select **Site building > Menus > List menus** from the admin menu. Follow the link to view the **Primary links** menu.
- 2) Select the **edit** link in the row for the Forum menu item.
- 3) On the edit page there is a box for inputting the **Menu link title**. Change this to Chat then press the Save button at the bottom of the page. You should see the Forum menu link has now changed to display Chat.

Next, let's take a look at the options available to the forum. The Discussion Forum feature is based on a Drupal module called Advanced Forum, which in itself is an extension of the Drupal core module called Forum. Select **Site configuration > Advanced forum** from the admin menu to access the Advanced Forum configuration page. Have a quick look through the options on this page to get an idea of what is supported, then try changing the Advanced forum style to one of the other options and pressing Save configuration. Now visit your forum to see the difference:



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[Logout](#)

[Submit Sightings](#)
[My Images](#)
[Chat](#)

Home

Forums

Forum	Topics	Posts	Last post
 Miscellaneous	1	1	Anyone seen ... by Joe Bloggs 8 min 36 sec ago
 Photography Place to discuss wildlife photography tips and tricks.	0	0	n/a
 Bird Photography	0	0	n/a
 Macro Photography	0	0	n/a

What's Going On?

Currently active users: 1 (1 users and 0 guests)

Joe Bloggs

Statistics

Topics: 1, Posts: 1, Users: 2

Welcome to our latest member, Joe Bloggs

 Forum Contains New Posts
  Forum Contains No New Posts
  Forum is Locked

This is the blue lagoon style, which shows that the forum is starting to look a lot more like a “proper” forum!

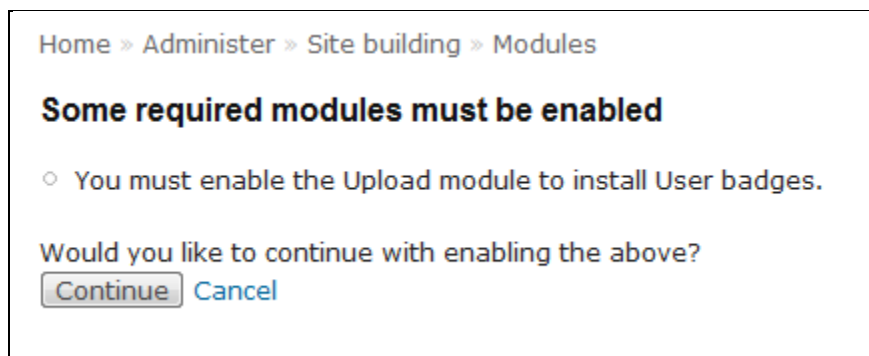
5.5 Installing additional Drupal modules

Next, we’ll do something a bit more advanced. Let’s see if we can extend our forum to support “User badges”, letting us tag up users who belong to different schemes and societies. This is not part of the built in functionality of the Advanced Forum module, so we will use a module fortuitously called User Badges (see http://drupal.org/project/user_badges). For this section please ensure that you are logged into Instant Indicia using the admin account, not the account that you created which you gave admin rights to. This is because the admin account will automatically pick-up rights to use any new permissions added by the modules you install, whereas the user belonging to the admin group has rights to all the *current* permissions, not to all the *future* permissions. You can of course set the permissions for the admin role on the page **User management > Permissions**.

You will need to download the User Badges Module from the main Drupal Website. To do this, open a new tab on your web browser, and go to the URL http://drupal.org/project/user_badges. At the bottom of this page, you will find several possible downloads; identify the recommended version 6 release zip file (e.g. 6.x 1.6, as we are using Drupal 6) and download the zip file. You should save the download, and then unzip this file, extracting all the files. Within the resulting folder there will be a further folder called “user_badges”: copy or FTP this user_badges folder to the sites/all/modules folder within your Drupal installation folder, alongside the other existing modules. Next, visit the **Site building > Modules** page from Drupal, making sure that you are first logged in as the admin user.

Some way down the page you will find an entry for the **User Badges** module. Tick the box for this module then click the **Save configuration** button at the bottom of the page.

Incidentally the steps you have just gone through are the same for installing any module into Drupal - download the file, decompress it and copy the folder into the modules folder (normally sites/all/modules) then visit the Modules page to install it. Generally a module will come with a readme.txt or install.txt file that provides instructions if there are any special steps you need to go through, so it is worth looking out for these files and checking before installation. When you install a module, Drupal first checks if there are any dependencies between modules that are not satisfied. For example, you cannot install the Advanced Forum module if the Forum module is not enabled (the Feature page took care of that for you earlier). In this case, Drupal realises that the User Badges module needs the Upload module to be enabled and asks you if it is OK to enable it:



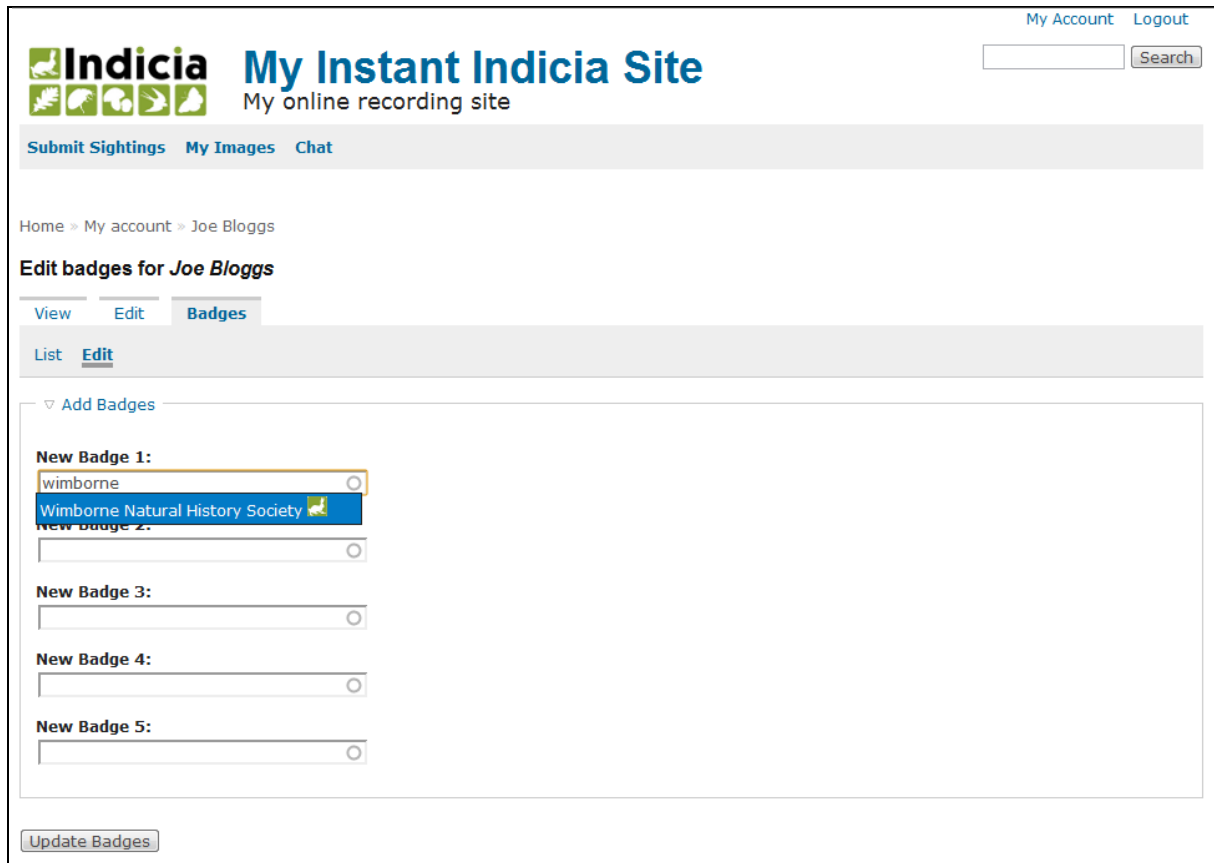
Click the Continue button to proceed. Note that in some cases the required module might not be present in your Drupal installation's modules folder, in which case you will have to find the download file for the module, then unzip it and copy or FTP it to the sites/all/modules folder as we did with the user_badges folder.

Once the module installation is complete, we need to create some badges. The User Badges module has created a new menu option, **User management > Badges**. Before actually creating a badge we need to upload the image for that badge, so select **User management > Badges > Images** from the menu. Click the Choose file button and browse to find an image of dimensions 16x16 pixels then upload it.

Now, choose the Add tab at the top of the page to add a new badge. Give the badge a name (e.g. Wimborne Natural History Society). We can leave the Image URL and Weight fields as they are. The Description URL could be used to provide a URL of the society's web page if it were existed, but as we created a page for Wimborne Natural History Society earlier we can provide the path to that (societies/wnhs). There are a few other options regarding the configuration of the user badge, but the only one we are concerned with at the moment is to associated the user badge with the image we uploaded to the Image Library earlier. At the bottom of the page select the radio button next to the image then click Submit.

Ok, let's see if we can put the badge into action. There are several ways of assigning a badge to a person such as defining rules or associating the badge with a particular user role, but we will use the direct method of assignment direct to the user. Select the **User management > Users > List** menu item then choose the **edit** link for the user you created earlier, which should be the one you were

logged in as when you created a forum post. Above the edit form, there are 3 tabs, for **View**, **Edit** and **Badges** (the latter was added when we installed the User Badges module). Select the **Badges** tab then select the **Edit** sub-tab. Start typing “wimborne” into the **New Badge 1** input box then select from the drop down:



The screenshot shows the Indicia website interface. At the top, there's a header with the Indicia logo and the text "My Instant Indicia Site" and "My online recording site". Navigation links include "Submit Sightings", "My Images", and "Chat". A user account section shows "My Account" and "Logout" with a search bar. Below the header, a breadcrumb trail reads "Home » My account » Joe Bloggs". The main section is titled "Edit badges for Joe Bloggs" and has tabs for "View", "Edit", and "Badges". The "Badges" tab is selected, and within it, the "Edit" sub-tab is active. A "List" link is also visible. Below the tabs, there's a section for "Add Badges" with a dropdown arrow. Under this, there are five "New Badge" input fields. The first field, "New Badge 1:", has a dropdown menu open showing "wimborne" and "Wimborne Natural History Society" as suggestions. The other four fields are empty. At the bottom of the form is an "Update Badges" button.

Click Update Badges to save the new badge. To check that this has worked, go to the forum (now called Chat) and drill down to see the topic you created earlier. You should see the badge listed in the “author pane” on the left. Hovering over the badge shows a hint for the name of the society; clicking the badge takes you to the society’s web page.

The important thing to take away from this exercise is not that you can create a system that supports user badges, since this is only likely to be useful in some circumstances. What is more important is that you are comfortable with the finding of, installation of and configuration of modules. There are loads of ways of configuring and extending the Advanced Forum module and we could write a course on that in itself. If you are interested in learning more, a good place to start is the Advanced Forum documentation, at <http://drupal.org/node/227108>. This includes a list of other modules that further extend the forum functionality.

5.6 Advanced Custom Attributes

There's a lot more to custom attributes than simply adding a box to a form. You can control validation, placement and various other parameters of the attribute and you can also create your own attributes entirely from scratch. First we'll take a look at creating our own attribute to capture the % sunshine at the time of the sample, since this is likely to affect damselfly activity.

5.6.1 Creating your own attributes

1. In the warehouse, log in (if you are not already) and select **Custom Attributes > Sample Attributes** from the menu. This gives a list of all the sample attributes that are available to you, irrespective of the survey.
2. Click the **New sample custom attribute** button near the bottom of the page.
3. Fill in the following details:

Caption = % sun

Data Type = Integer (a whole number)

Available to other websites – ticked

Minimum value – ticked and set to 0

Maximum value – ticked and set to 100

Tutorial:Damselflies - ticked

Your form should now look like the following:

Home >> Sample Custom Attributes >> Sample Attribute

New Sample Attribute

This page allows you to specify a new or edit an existing custom attribute for sample data.

Sample Attribute details

Caption: % sun

Data Type: Integer

Termlist: <Please Select>

Allow Multiple Values: ☐

Available to other Websites: ☒

Applies to location: ☐

Validation Rules

Required: ☐

Numeric: ☐

Formatted Decimal: ☐

Regular Expression: ☐

Minimum value: ☒ 0

Maximum value: ☒ 100

Sample Attribute Website/Survey Allocation

Demonstration Website

Demonstration Website: non survey specific: ☐

Demonstration Website: Demonstration Survey: ☐

Tutorial

Tutorial: non survey specific: ☐

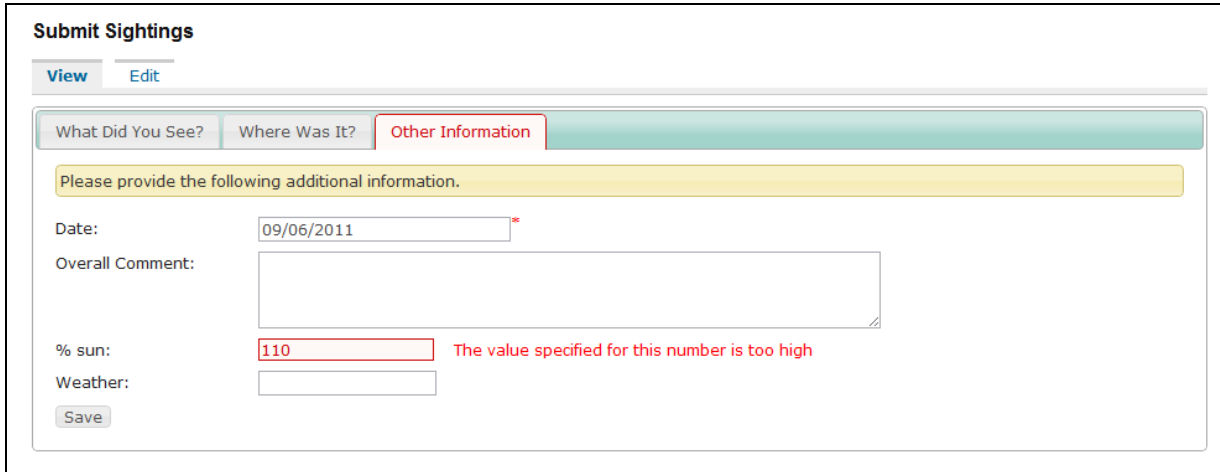
Tutorial: Damselflies: ☒

Save **Cancel** then go back to the list

4. Press the **Save** button.

At the bottom of the form you ticked a box to allocate the attribute to the Tutorial Website's Damselflies survey. This was a shortcut to adding the attribute via the survey's Setup Attribute page as you did for the Weather attribute earlier, saving you the additional step.

Now, return to the form and clear the Indicia cache as before, then visit the Submit Sightings page. This time, fill in all the details required of a test record, but specify a % sun value that is out of range, for example 110. Click the **Save** button and see what happens:



The screenshot shows the 'Submit Sightings' form with tabs for 'View' and 'Edit'. The 'Other Information' tab is active. A yellow box prompts the user to provide additional information. The form includes fields for 'Date' (09/06/2011), 'Overall Comment' (a text area), '% sun' (110), and 'Weather'. A red border and error message 'The value specified for this number is too high' are visible next to the '% sun' field. A 'Save' button is at the bottom left.

5.6.2 Survey specific attribute validation

As you can see, Indicia automatically validates attributes according to the rules we specify. You can create attributes that are shared across several surveys or even across Indicia powered websites, for example the provided CMS User ID attribute may be used by multiple sites. If you are using an attribute that is shared then it is important to consider the way that you apply validation rules to the attribute. For example, if we wanted to make our % sun attribute required and did so using the attribute edit page, then every single survey using that attribute would not be able to accept a record without a % sun value. Not good!

Fortunately Indicia provides a way of getting around this problem by supplying validation rules that are applied only when the attribute is used in the context of a specified survey. To access this facility, select **Lookup Lists > Surveys** from the menu. Click the **setup attributes** link for the Damselflies survey, then click the **edit** link for the % sun attribute. You should see a page allowing you to specify validation rules which are overlaid onto the global ones already specified. Tick the **Required** box and save the page.

Now, back in Instant Indicia, try clearing the cache then adding yet another test record, this time with the % sun value missing. Note how the form has automatically added * after the control to indicate it is mandatory. Save the record and you will see a validation message that the field is required.

5.6.3 Structuring your form

The attributes you've added so far are pretty much stuck on the end of the form with no thought for the flow through the data input process. Let's create a new tab, called Environment and add the new controls to that.

To do this, select **Lookup Lists > Surveys** from the warehouse menu again. Click the **setup attributes** link for the Damselflies survey. At the bottom of the page there is an input control called **Block name**. A block can be thought of as a chunk of form; the exact way a chunk is interpreted will depend on the data entry form code that is being used (don't forget we are currently just using the tabbed data entry form, one of many different forms that are available). In this particular case, the blocks should be structured in 2 levels, with the outermost level mapping to a tab on the form, and the innermost level being a fieldset (a term used to describe a boxed off region in a web form containing several controls). So, type "Environment" into the input and click **Create new block**. Now type "Environmental data" into the same input and click **Create new block** again. Your page should look like this:

Indicia

Home Lookup Lists Custom Attributes Entered Data Admin Logged in as joe_bloggs

[Home](#) >> [Surveys](#) >> Attributes for Damselflies

The record was saved successfully.

Display attributes for:

Environment *	Rename
Environment Data *	Rename
% sun	Delete Edit
Weather	Delete Edit
CMS User ID	Delete Edit
CMS Username	Delete Edit
Email	Delete Edit

The layout changes you have made will not be saved until you click the Save button.

Block name:

Existing attribute:

Indicia Version 0.7.0

Next, use the drag icon to the left of Environmental data to drag this block upwards. As you drag it the places you are allowed to drop it into will highlight orange. When you drag it over a box and it is ready to accept the block, it will highlight yellow. Drag the Environmental data block up into the box inside the Environment block and drop it there. Now repeat the drag operation to move the % sun and Weather attributes inside the Environmental Data block. Your page should now look like:

Home >> Surveys >> Attributes for Damselflies

Attributes for Damselflies

The record was saved successfully.

Display attributes for:

Environment *

Rename

Environment Data *

Rename

% sun *

Delete Edit

Weather *

Delete Edit

CMS User ID *

Delete Edit

CMS Username

Delete Edit

Email

Delete Edit

Finally, click the **Save** button, then empty the cache in Instant Indicia and reload the Submit Sightings form. You will find a new tab called Environment has been added to the form.

Submit Sightings

[View](#) [Edit](#)

[What Did You See?](#)
[Where Was It?](#)
[Other Information](#)
[Environment](#)

Environmental data

% sun:

Weather:

If you want to add controls to the existing tabs (What Did You See? etc), then you can do this by creating top-level blocks called Species, Place or Other Information. These special block names will automatically cause the controls to be inserted on existing tabs rather than to create new ones.

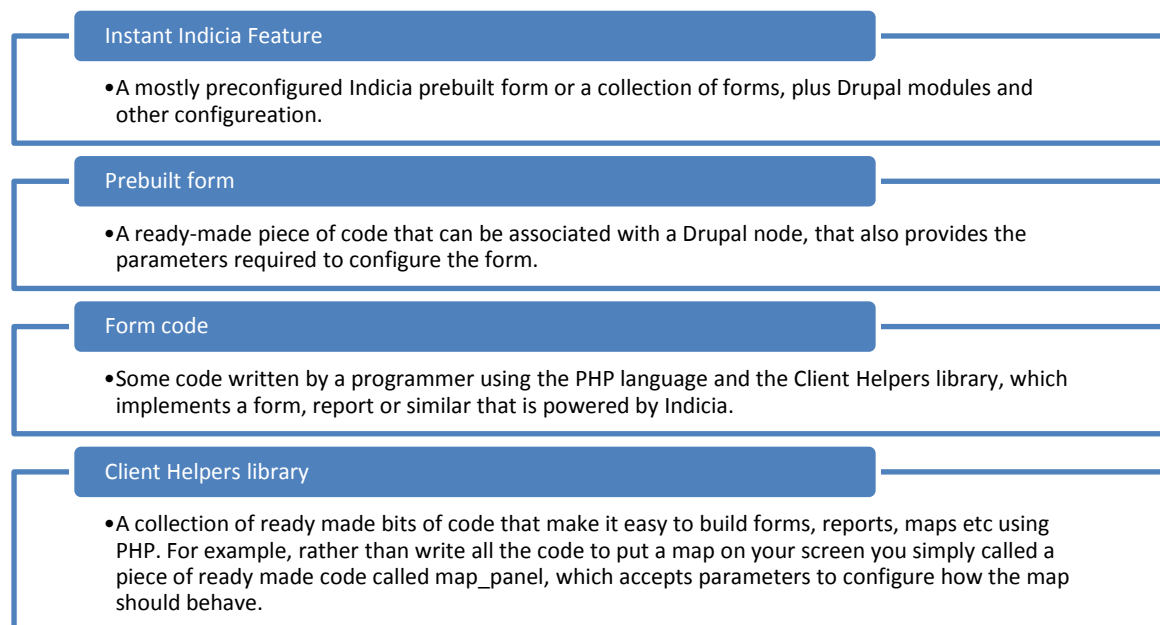
5.7 Advanced configuration of forms

5.7.1 Editing an existing form

So far, we have only looked at using our forms within the confines of Instant Indicia. To recall our quote right from the start of the tutorials:

Instant Indicia is a collection of “ready meals” built using the Indicia cooking system that you simply put together to create the meal of your choice. If you don’t like a particular aspect of a ready meal you are stuck with it, or have to cook from scratch. However, in Instant Indicia you can tweak the ready meal just as readily as if you were cooking the meal from the beginning.

Let’s take a quick peek under the bonnet and have a look at the “layers” which our form is built on top of. Here’s a list of the layers with a quick introduction to the terminology.



We’ve more or less got to grips with the first entry in this list without being aware of the underlying prebuilt form or its configuration, so we’ll take a look at that now. The last two entries, **Form code** and the **Client Helpers library** are beyond the scope of this tutorial but if you want to know more there is plenty of information on writing your own code on the Indicia Wiki (<http://code.google.com/p/indicia/>).

Go to your Submit Sightings page in Instant Indicia. You will see an Edit tab is available near the top of the page – of course this tab is not visible unless you are logged in with appropriate permissions.

Submit Sightings

[View](#) [Edit](#)

What Did You See? Where Was It? Other Information Environment

Please enter the species you saw and any other information about them.

Species	Present	Images
<input type="text"/>	<input type="checkbox"/>	select a species first

Click on this link and you will find yourself on the node's edit page. As when creating a Page or Story node, you can specify a node title and body text (here renamed to **Page introductory text**). Further down the page is a box called **Form selection**, where all the Indicia goodness lies. Each **prebuilt form** has a different set of configuration parameters, so there is no point in trying to describe them all to you now. We will take a look at a few parameters available for the **MNHNL Dynamic 1** form which we are using.

You might be wondering where the name MNHNL Dynamic 1 came from. It is named this because the form was initially developed by the *Musee d'Histoire Naturelle Luxembourg* and because the form dynamically loads the survey's attributes to build itself. It is now one of the more flexible and widely used forms available.

First, expand the **Base Map Layers** section. Here you can configure the map layers that load in the background. Untick the ones that are already set and tick Google Streets and Google Physical (both of which do not require API keys so are useful for the tutorial's purposes). Save the page and return to the **Where was it?** tab. You will see the Google physical, or terrain, layer is loaded. If you click the + button in the top right of the map you can also choose Google Streets.

Now, return to the edit view for the form and find the **Other Map Settings** section. Expand this and replace **panZoom** with **panZoomBar** in the input box, ensuring you use the correct case. Save the page and return to the second tab. Now, instead of a simple +/- button for zooming in and out, you get the familiar zoom bar for changing the map scale.

Select to edit the page again and find the **User Interface** section. Here, change the **Interface Style Option** to Wizard and also tick the box called **Show progress through Wizard/Tabs**. Save the page and you will see that our tabbed interface has been replaced by a wizard style interface, with next and previous buttons as well as a bar at the top showing us our progress through each of the wizard steps.

Submit Sightings

View

Edit

Indicia pages *Submit Sightings* has been updated.

1. What Did You See?

2. Where Was It?

3. Other Information

4. Environment

5. Submit Record

What Did You See?

Please enter the species you saw and any other information about them.

Species	Present	Images
<input type="text"/>	<input type="checkbox"/>	<i>select a species first</i>

Next Step ➔

That's just a few of the many options available, hopefully just enough to give you a tantalising glimpse of what can be done!

5.7.2 Reverting the form settings

The configuration settings you have applied are different to those supplied by the Instant Indicia feature. Instant Indicia provides a facility which allows you to rollback to the “factory settings”. To do this, access the **Site building > Features** menu item. You should see that the Tabbed Data Entry Form feature is now marked as overridden:

Features

Manage

Review IForm Features

Create feature

A "Feature" is a certain type of Drupal module with contains a package of configuration that, when enabled, provides a new set of functionality for your Drupal site. Enable features by selecting the checkboxes below and clicking the Save configuration button. If the configuration of the feature has been changed its "State" will be either "overridden" or "needs review", otherwise it will be "default", indicating that the configuration has not been changed. Click on the state to see more details about the feature and its components.

[Indicia Input Forms](#)
[Indicia Miscellaneous Features](#)
[Indicia Reports](#)
[Testing](#)

Feature	Signature	State	Actions
<input type="checkbox"/> Sectioned Transects system A data input system for creating transects divided into sections and entering abundance counts for each section.	Unavailable 6.x-1.0-alpha1	Disabled	Recreate
<input type="checkbox"/> Single or multiple record entry system A data entry system that lets the recorder choose whether to input a single record or a list of records.	Unavailable 6.x-1.0-alpha1	Disabled	Recreate
<input checked="" type="checkbox"/> Tabbed Data Entry Form A form for inputting a list of records at a single place and time, with the form split onto several tabs.	Unavailable 6.x-1.0-alpha1	Overridden	Recreate

Click on the overridden word and you are taken to a page showing you the details of the feature's current state. There are a few other bits of information on this page, don't worry about these for now as they are mainly there for developers and advanced users of the Features system.

Tabbed Data Entry Form

[View](#) [Recreate](#)

Tabbed Data Entry Form

A form for inputting a list of records at a single place and time, with the form split onto several tabs.

Dependency	Status
Indicia forms	Enabled
Menu	Enabled
UUID Features	Enabled

Menu links	Default
primary-links:72fbb6f2-ad87-11e0-aeb9-62cde1fc4d8d	
Content	Overridden
72fbb6f2-ad87-11e0-aeb9-62cde1fc4d8d	

[Revert components](#)

First, check the box outlined in red, then click the Revert components button to reset the form. Note that if you reset a form in this way, you should check if there are settings which need to be reset on the **Review Indicia Features** page, as you would immediately after the initial installation of the feature. This can be accessed on the admin menu via **Site building > Features > Review Indicia Features**.

5.7.3 Adding a new form

As well as using the features provided by Instant Indicia to setup Indicia powered forms, we are free to add our own. At this point in time, Instant Indicia does not include any mapping features, though I suspect it soon will. So, let's add one of our own.

1. Select **Content management > Create content > Indicia pages** from the admin menu in Drupal.
2. Expand the **Menu settings** section. Set the **Menu link title** to "My Map" and set the **Parent item** to "<Primary Links>". This tells Drupal to add a link to this page to the Primary Links menu.
3. Provide a page title, "My Map".
4. In the **Form Selection** part of the page, choose the category "Reporting" and the form "Report Map".

Form Selection


Select Form Category: Reporting
Select the form category pick a form from.

Select Form: Report Map
Select the Indicia form you want to use.

Outputs data from a report onto a map. To work, the report must include a column containing spatial data. Can automatically include the report parameters form required for the generation of the report.

[Load Settings Form](#)

5. Now, click the **Load settings form** button. Depending on which form you selected, this will load the controls required to configure the form into the area below.
6. Under the **Report Settings** section, set the **Report Name** to **Map a survey's occurrences** by ticking the radio button next to this report.
7. Under the **Initial Map View** section, set the **Map Width** to 75%. This gives space for the legend to appear alongside the map where we would like it to be.
8. Under the **Base Map Layers** section, tick the box for the **Google Physical** layer (this particular layer is fairly uncluttered so useful for overlaying distribution maps onto).
9. Save the form. You will see a page as follows:



My Instant Indicia Site

My online recording site

[My Account](#) [Logout](#)

[My Map](#) [Submit Sightings](#) [My Images](#) [Chat](#)

Home

My Map

View

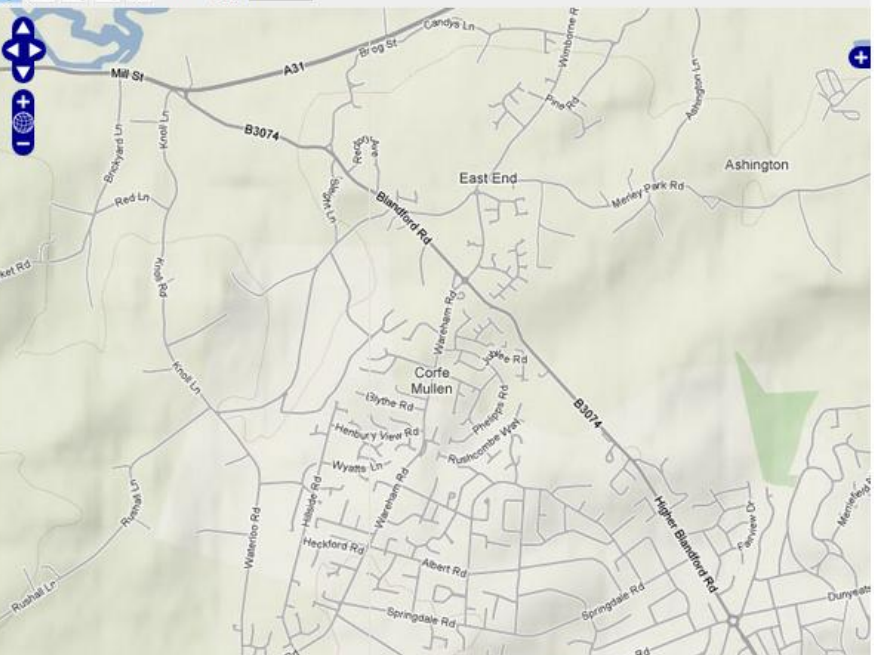
Edit

Indicia pages My Map has been created.

Report Parameters

Survey: <please select>
Select the survey to return data for

Buffer (m): 0



Google Physical

Selection layer

Note the page is divided into several regions. First there is a parameters entry form, the contents of which will depend on the specific report you are using. In this case we just need to select the survey. Next there is a map toolbar with controls for navigation, drawing a query polygon, line or point, buffering the query area, clearing the query shapes and querying the data underlying a point on the map. To test this out, draw a polygon on the map using the **Draw Polygon** tool (second from the left), by clicking on each point of the polygon then double clicking to finish. Make sure you draw the polygon over where you created records earlier. Now, click the **Run Report** button. You should find the map is redrawn with a grid square showing where the record(s) were.

You can also try a buffered polygon, line or point. Click the **Clear Selection** button (5th from the left) then select the **Draw Line** tool. Like the Draw Polygon tool, simply click to set each point then double click to finish, but this time type in a buffer of, say, 1000 to set a 1km buffer. You will see the

buffered area outlined on the map. Run the report again and you should see any records in the buffer region are shown.

6 Theming the site

The final part of this course covers some of the options for putting finishing touches on your site, in particular theming.

6.1 Site Information

The first thing to be aware is that you can update your site's title and slogan on the **Site information** page, found under the **Site configuration** menu title. Try setting these to something new to see what happens.

6.2 Tweaking the provided theme

Under **Site building > Themes > Configure > Global settings** on the menu, you will find the global theme configuration page. Here you will find various theme settings such as whether to display the site slogan, plus a section allowing you to upload your own logo. Try uploading an alternative logo image using the **Upload logo image** control then saving the settings to see what happens.

Drupal theming is quite a large topic and goes beyond the scope of this tutorial, but it is reasonably easy for a web designer to pick up. The default theme provided with Instant Indicia is designed to be a plain starting point for developing a new theme. It is based on the **Framework** Drupal theme (<http://drupal.org/project/framework>). If you take a look in the sites/all/themes/instant_indicia folder in your Drupal installation directory you will see that it introduces a couple of small tweaks such as a custom stylesheet and page template. You could for example, copy the instant_indicia folder to create your own template and modify it from there.

6.3 Installing a new theme

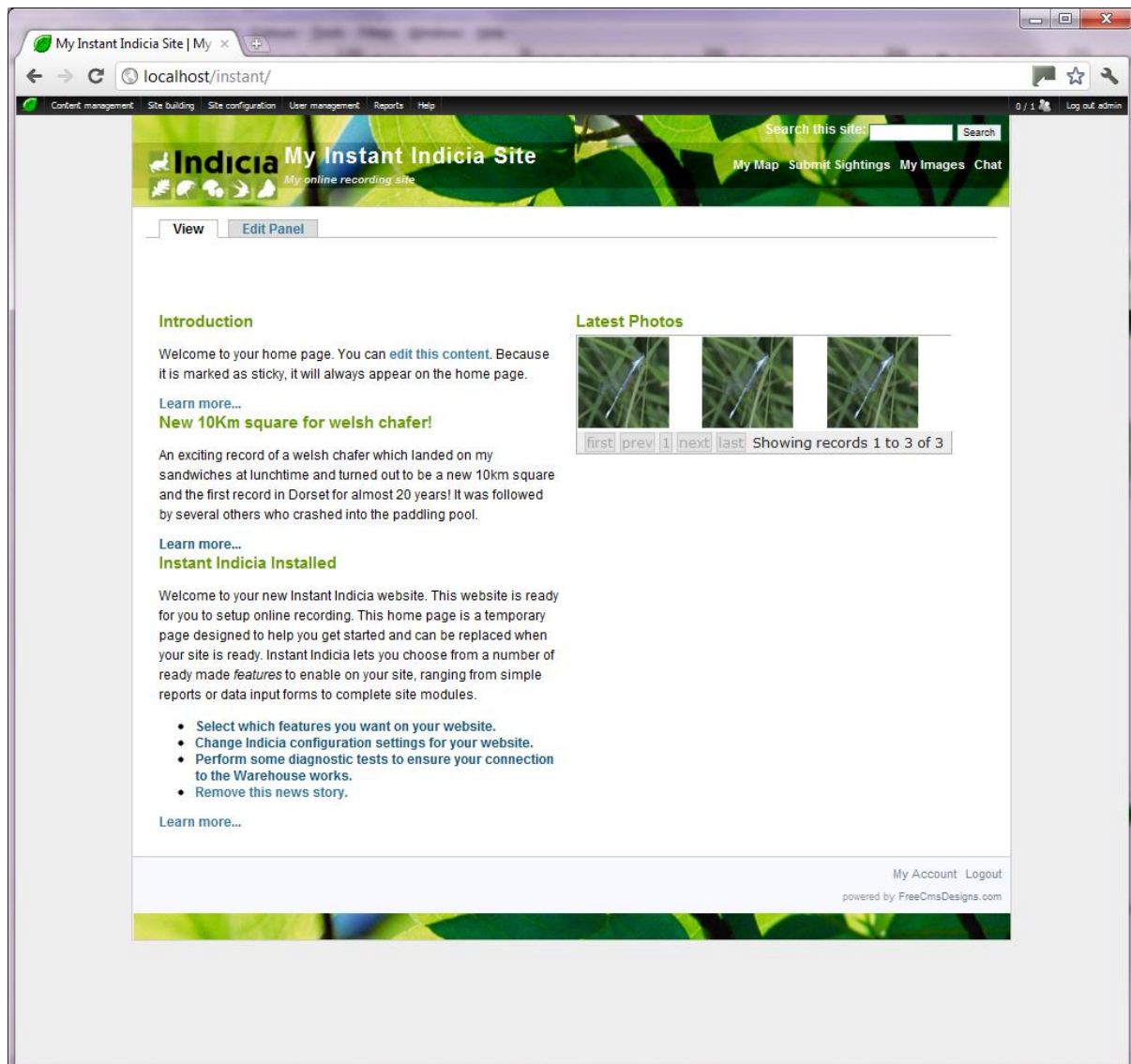
If you search for "Drupal themes" on the Web you will find several sites devoted to Drupal themes with lots of free themes available. An example theme site is Drupal Theme Garden (<http://themegarden.org/drupal6>) which lets you view the current page in any of the available themes. Once you have selected a theme the **Current Theme** section shows a link to the theme project page from where you can download the theme. When selecting a theme, remember that you are often just looking for a starting point as you could tweak the colours & banner image later.

Rather than spend too much time browsing themes we will download and install the Foliage theme, from <http://drupal.org/project/foilage>. Here are the steps:

1. Download the zip file of this theme, available near the bottom of the project page.
2. Unzip the download and copy the foliage folder to your sites/all/themes folder in your Drupal install.
3. Select **Site building > Themes** from the admin menu. This shows you the list of available themes.
4. Tick the box in the **Enabled** column and set the radio button in the **Default** column for the Foliage theme.
5. Click the **Save configuration** button to apply the theme to the site.

That's it – your site is completely restyled!

As a grand finale to the course, try using the Features system to enable the **Home Page** feature (under **Indicia Miscellaneous Features**), then take a look at your new site home page:



7 Course Summary

In this course we started by looking at the selling points of Instant Indicia before working our way through the installation of both the warehouse and the Instant Indicia site itself.

Next, we worked our way through the initial setup tasks required on the warehouse, including registering our new online recording site and survey as well as the preparation of a species list for recording against.

Then we spent some time on a basic grounding in using Drupal to build websites, since this provides a quick and powerful way to build the additional pages and site features you may want on your website.

A significant part of the course looked into the ways of using the Instant Indicia Features system to rapidly build a complete recording site. We also took a peak at the underlying system of configurable forms and learnt how to add our own from scratch.

Finally we took a brief look at some pointers to how to theme your site.

Hopefully this course has given you a solid grounding in working with Indicia and in particular Instant Indicia. If you would like to follow up on anything then you can try the following resources:

- Indicia Development Forum - <http://forums.nbn.org.uk/viewforum.php?id=19>
- Indicia Project and Wiki - <http://code.google.com/p/indicia/>

Finally, remember that Indicia is an open source project and we would love you to get involved. Whether you are able to contribute development skills, design skills or even just a few minutes to test new features please do get in touch via the forum.

I look forward to seeing the sites you build with your new knowledge!

8 List of logins

Using the following table to fill in your different authentications and logins that you create during the tutorial.

Warehouse Logins

The warehouse will have at least an admin login created during the installation and will also have other logins according to the users you create on the system.

Username	Password
admin	

Website Registration

This is the ID of the website registration you created on the warehouse and the password given to the registration. You will need it to configure the Instant Indicia installation to be able to connect to the warehouse.

Website ID	Password

Drupal Logins

The Drupal installation will have at least an admin login created during the installation and will also have other logins according to the users you create on the system.

Username	Password
admin	