
EcoCache Foss4g Hackathon Documentation

Release 0.1

Foss4g Hackathon Group

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About EcoCache Foss4g Hackathon

The idea behind the Ecocache project was to capture useful information about the environment across the UK using easily identified object. An example of this would be the flowering dates of Daffodils across the UK, which starts in the south of the UK and travels north. By making this as an app for children the aim was to make something fun and engaging that would encourage kids to examine their environment more closely whilst providing valueable data as the result. The aim is to mimic the “Got to catch them all” style of games with achievements and goals in a simple to use app that can be used while in the car or out for a walk.

Contents:

INSTALL

Prerequisites to install ecocache web application:

- Apache Web server [Apache](#)
- Backend Database [Mysql](#)
- Mako is a lightweight UTF-8 compatible and easy to use PHP framework [Mako](#)
- Sleek, intuitive, and powerful front-end framework for faster and easier web development. [BootStrap](#)

1.1 WAMP/LAMP Environment

1.1.1 Windows Install

Tutorial to install WAMP (Windows Apache Mysql PHP) can be found [here](#)

1.1.2 Linux Install

Install Apache

To start off we will install Apache.

1. Open up the Terminal (Applications > Accessories > Terminal).
2. Copy/Paste or type the following line of code into Terminal and then press enter:

```
sudo apt-get install apache2
```

3. The Terminal will then ask you for you're password, type it and then press enter.

Testing Apache To make sure everything installed correctly we will now test Apache to ensure it is working properly.

1. Open up any web browser and then enter the following into the web address:

<http://localhost/>

You should see a folder entitled apache2-default/. Open it and you will see a message saying “*It works!*” , congrats to you! or something like that!

Install PHP

In this part we will install PHP 5.

Step 1. Again open up the Terminal (Applications > Accessories > Terminal).

Step 2. Copy/Paste or type the following line into Terminal and press enter:

```
sudo apt-get install php5 libapache2-mod-php5
```

Step 3. In order for PHP to work and be compatible with Apache we must restart Apache. Type the following code in Terminal to do this:

```
sudo /etc/init.d/apache2 restart
```

Test PHP

To ensure there are no issues with PHP let's give it a quick test run.

Step 1. In the terminal copy/paste or type the following line:

```
sudo gedit /var/www/testphp.php
```

This will open up a file called testphp.php.

Step 2. Copy/Paste this line into the phptest file:

```
<?php phpinfo(); ?>
```

Step 3. Save and close the file.

Step 4. Now open your web browser and type the following into the web address: code:

```
http://localhost/testphp.php
```

(It will show you the page that has all information about your php. If you have prior experience of installing php in some other OS, you must have seen this page.)

Congrats you have now installed both Apache and PHP!

Install MySQL

To finish this guide up we will install MySQL.

Step 1. Once again open up the amazing Terminal and then copy/paste or type this line:

```
sudo apt-get install mysql-server
```

Step 2 (optional). In order for other computers on your network to view the server you have created, you must first edit the "Bind Address". Begin by opening up Terminal to edit the my.cnf file.

```
gksudo gedit /etc/mysql/my.cnf
```

Change the line

```
bind-address = 127.0.0.1
```

And change the 127.0.0.1 to your IP address.

(In Linux Mint 11, terminal itself asked to set password, But if it doesn't follow the step 3.)

Step 3. This is where things may start to get tricky. Begin by typing the following into Terminal:

```
mysql -u root
```

Following that copy/paste or type this line:


```
mysql> SET PASSWORD FOR 'root'@'localhost' = PASSWORD('yourpassword');
```

(Make sure to change yourpassword to a password of your choice.)

Step 4. We are now going to install a program called phpMyAdmin which is an easy tool to edit your databases. Copy/paste or type the following line into Terminal:

```
sudo apt-get install libapache2-mod-auth-mysql php5-mysql phpmyadmin
```

After that is installed our next task is to get PHP to work with MySQL. To do this we will need to open a file entitled php.ini. To open it type the following:

```
gksudo gedit /etc/php5/apache2/php.ini
```

Now we are going to have to uncomment the following line by taking out the semicolon (;).

Change this line:

```
;extension=mysql.so
```

To look like this:

```
extension=mysql.so
```

Now just restart Apache and you are all set!

```
sudo /etc/init.d/apache2 restart
```

If you get a 404 error upon visiting <http://localhost/phpmyadmin>: You will need to configure apache2.conf to work with Phpmyadmin.

```
sudo gedit /etc/apache2/apache2.conf
```

Include the following line at the bottom of the file, save and quit.

Include /etc/phpmyadmin/apache.conf

Then just restart Apache

```
sudo /etc/init.d/apache2 restart
```


TABLE STRUCTURE

The table structure to store and manage data acquisition are described below:

```
1  #Create DB
2  CREATE DATABASE `geo_cache` /*!40100 COLLATE 'utf8_unicode_ci' */;
3
4  #environment table - description of area user is spotting from
5  CREATE TABLE `environment` (
6      `environment_id` INT(10) NOT NULL AUTO_INCREMENT,
7      `environment_name` VARCHAR(150) NOT NULL DEFAULT 'Unnamed Location',
8      PRIMARY KEY (`environment_id`)
9  )
10
11
12  #category table - collective name for objects
13  COMMENT='Area category; description of area user is spotting from'
14  COLLATE='utf8_unicode_ci'
15  ENGINE=MyISAM;
16  CREATE TABLE `category` (
17      `category_id` INT(10) NOT NULL AUTO_INCREMENT,
18      `category_name` VARCHAR(150) NOT NULL DEFAULT 'Unnamed category',
19      PRIMARY KEY (`category_id`)
20  )
21
22
23  COMMENT='Name for a collection of objects'
24  COLLATE='utf8_unicode_ci'
25  ENGINE=MyISAM;
26  #object table - definition for individual objects
27  CREATE TABLE `object` (
28      `object_id` INT(10) NOT NULL AUTO_INCREMENT,
29      `object_name` VARCHAR(150) NOT NULL DEFAULT 'Unnamed Object',
30      PRIMARY KEY (`object_id`)
31  )
32
33
34  COMMENT='Living or inanimate object to record discovery of'
35  COLLATE='utf8_unicode_ci'
36  ENGINE=MyISAM;
37  #Discovery table - individual submissions from users, links everything together
38  CREATE TABLE `discovery` (
39      `discovery_id` INT(10) NOT NULL AUTO_INCREMENT,
40      `environment_id` INT(10) NOT NULL DEFAULT '0',
41      `category_id` INT(10) NOT NULL DEFAULT '0',
42      `object_id` INT(10) NOT NULL DEFAULT '0',
```

```
43     `object_size_id` INT(10) NOT NULL DEFAULT '0',
44     `location_id` INT(10) NOT NULL DEFAULT '0',
45     PRIMARY KEY (`discovery_id`)
46 )
47
48
49 COMMENT='Table for recording individual discoveries of objects'
50 COLLATE='utf8_unicode_ci'
51 ENGINE=MyISAM;
52 #Describes object sizes
53 CREATE TABLE `object_size` (
54     `object_size_id` INT(10) NOT NULL AUTO_INCREMENT,
55     `object_size_description` VARCHAR(150) NOT NULL DEFAULT '',
56     PRIMARY KEY (`object_size_id`))
57
58 COMMENT='Record possible sizes for object'
59 COLLATE='utf8_unicode_ci'
60 ENGINE=MyISAM;
61 #Object category linking table
62 CREATE TABLE `object_category` (
63     `object_id` INT(10) NOT NULL DEFAULT '0',
64     `category_id` INT(10) NOT NULL DEFAULT '0',
65     PRIMARY KEY (`object_id`, `category_id`)
66 )
67
68
69 COMMENT='Links objects to categories'
70 COLLATE='utf8_unicode_ci'
71 ENGINE=MyISAM;
72 #Category environment linking table
73 CREATE TABLE `category_environment` (
74     `category_id` INT(10) NOT NULL DEFAULT '0',
75     `environment_id` INT(10) NOT NULL DEFAULT '0',
76     PRIMARY KEY (`category_id`, `environment_id`)
77 )
78
79 COMMENT='Links categories to environments'
80 COLLATE='utf8_unicode_ci'
81 ENGINE=MyISAM;
82
83
84 #Location date storage
85 CREATE TABLE `location` (
86     `location_id` INT(10) NOT NULL AUTO_INCREMENT,
87     `geolocation` POINT NOT NULL,
88     PRIMARY KEY (`location_id`)
89 )
90 COLLATE='utf8_unicode_ci'
91 ENGINE=MyISAM;
```

INDICES AND TABLES

- *genindex*
- *modindex*
- *search*