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Java Auto Grader

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Abstract

The aim of the project is to develop a “Java Automatic Grader” for java project assignment. It ensures that every assignment or work given to the students is done in the right way. The student should get automatic evaluation after submitting the assignment. We are implementing each test case in such a way that student should only get marks for satisfying all the requirements of the project assignment in fruitful manner i.e. If the student submits the assignment by reaching all the requirements and the expected result is achieved in the right way, then only the student will get full marks.

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1 feature description

In this project we are developing a website with the help of moodle, which will help the teachers and professors in grading student's assignments automatically when they submit the assignment. This will have done based on the test cases written by the professor for each assignment he/she posted on the website.

1.1 Competitive Information

SWAD (Shared Workspace at Distance) is the competitor for moodle. But moodle is more user friendly compared to SWAD

1.2 Relationship to other application

This project does not relate any other projects

1.3 Assumptions and Dependencies

Moodle is an open source software, so anyone can make changes to the functionalities of the website and make it better to use.

1.4 Future Enhancements

As of now we are concentrating only on auto grading of the assignments, apart from this the moodle software can offer so many features like a complete blackboard software

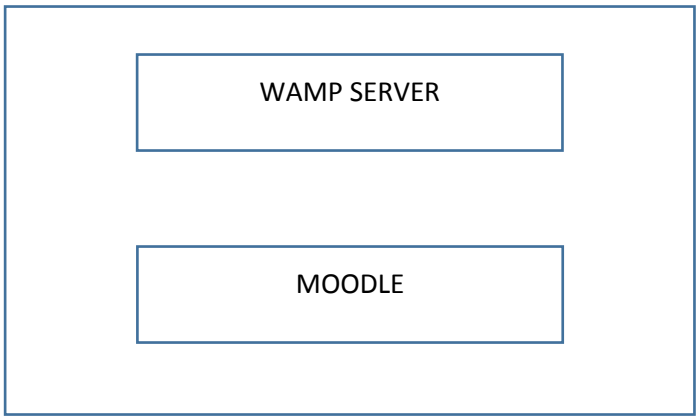
1.5 Definitions and Acronyms

We did not use any acronyms in this project

2 Technical Description

2.1 Application Architecture

In order to work the moodle software we need WAMP server and moodle server to be installed in the system.



2.2 Application Information flows

When the professor posts the assignment then the student must submit it within the deadline by logging through his account, also student can access the resources that are available under the course in which he/she enrolled.

2.3 Interactions with other Projects

This project does not interact with any other projects

2.4 Interactions with other Applications

This project does not interact with any other applications

2.5 Capabilities

All the plugins must work properly i.e. VPL should be able to add any number of assignments and Junittest plugin must test the programs correctly

2.6 Risk Assessment and Management

The test cases should write in a proper way that any student must awarded with full points if and only if he/she submits the work by fulfilling all the requirements

3 Project Requirements

3.1 Identification of Requirements

This project requires following software to be installed

Moodle Installation:

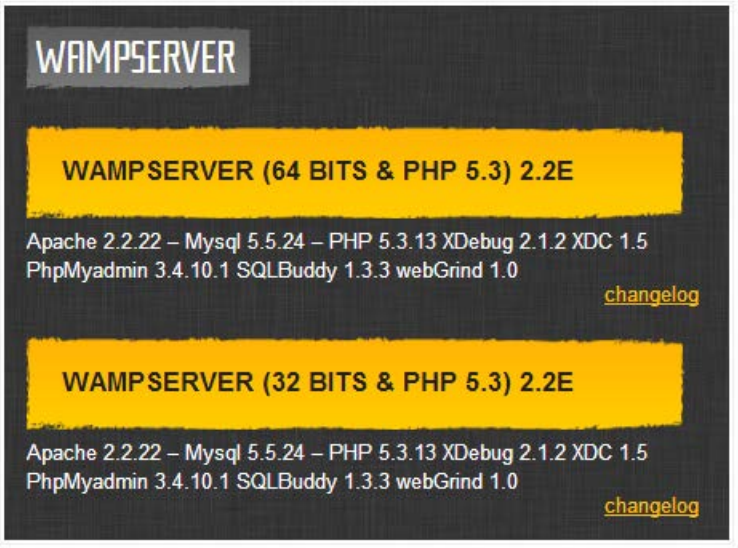
To install moodle we need three things

1) WAMP server
2) Moodle software
3) Visual C++

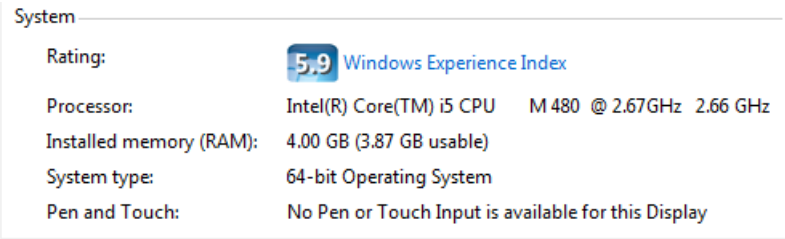
WAMP server installation

- Downloading WAMP server

Download the installer file for the latest version of WampServer from http://www.wampserver.com/en/#download-wrapper , and save the file to your computer



Make sure you select the correct installer file for your version of Windows. If you don't know if your system is 32-bit or 64-bit, **right-click on My Computer**, and then **click Properties**.

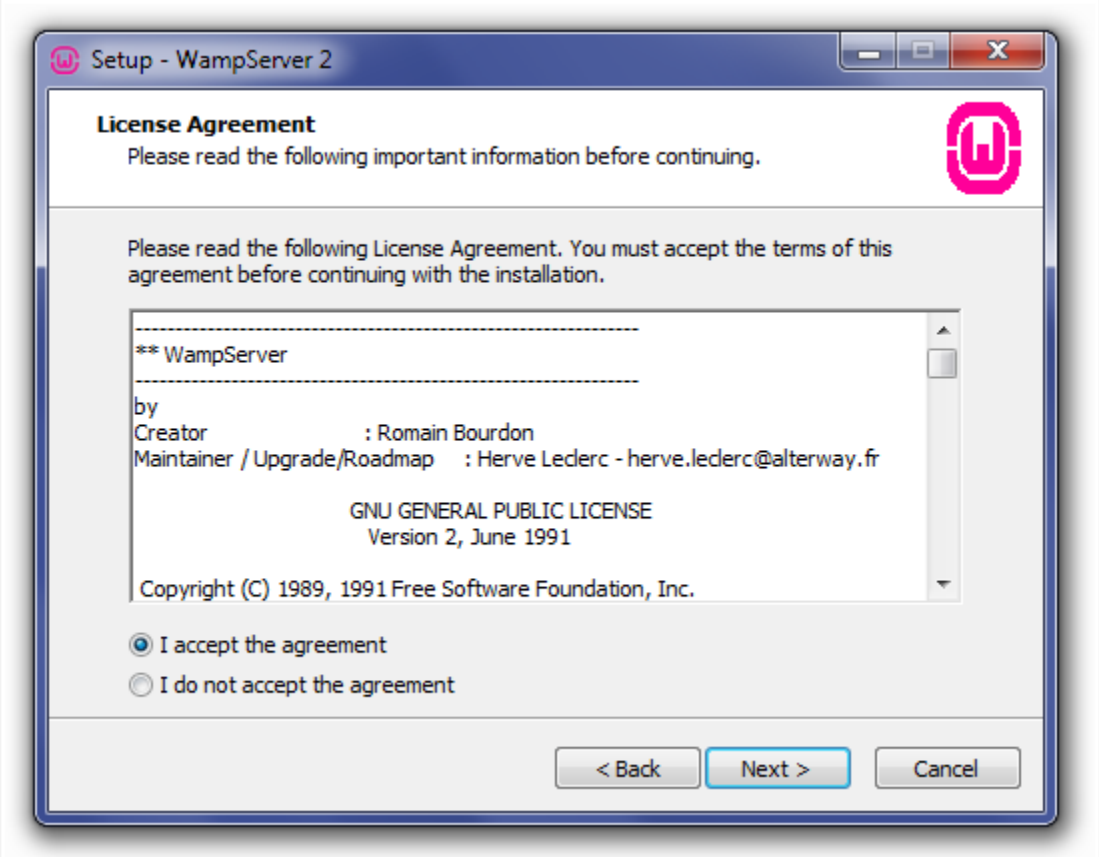


- **Installing WAMP server**

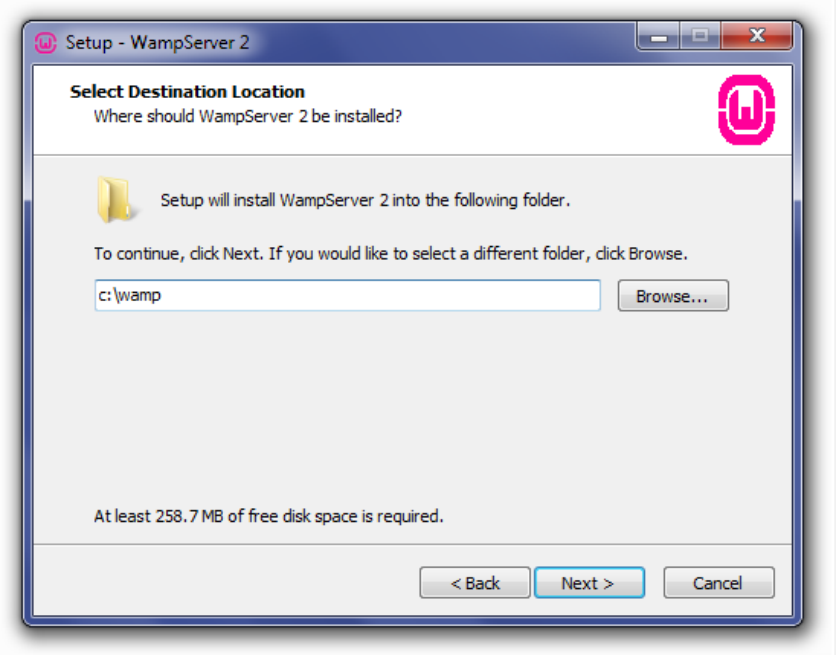
To start the installation process, you need to open the folder where you saved the file, and **double-click the installer file**. A security warning window will open, asking if you are sure you want to run this file. **Click Run** to start the installation process.

Next you will see the Welcome to The WampServer Setup Wizard screen. **Click Next** to continue the installation.

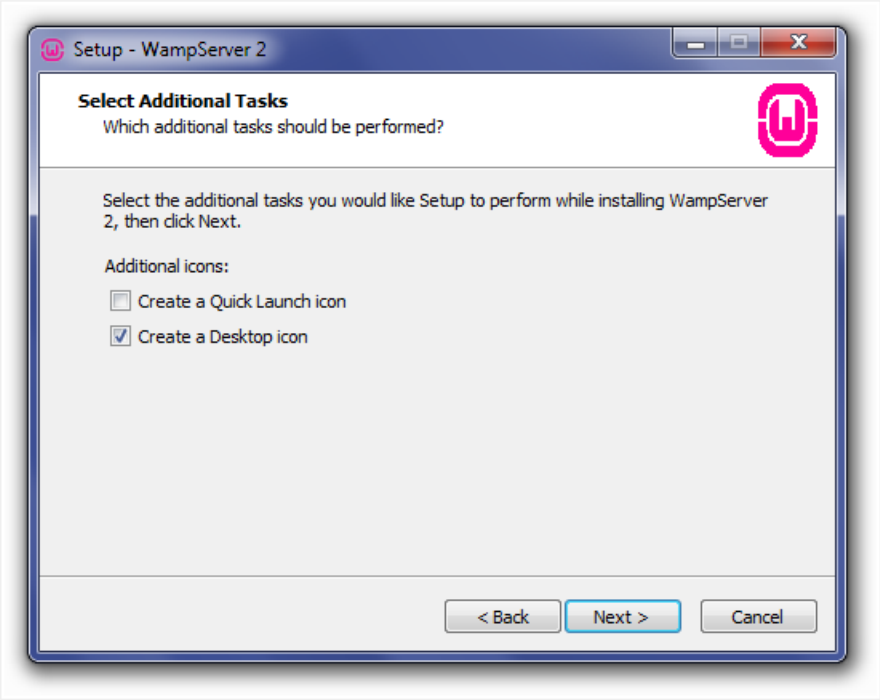
The next screen you are presented with is the License Agreement. Read the agreement, check the radio button next to **I accept the agreement**, then **click Next** to continue the installation.



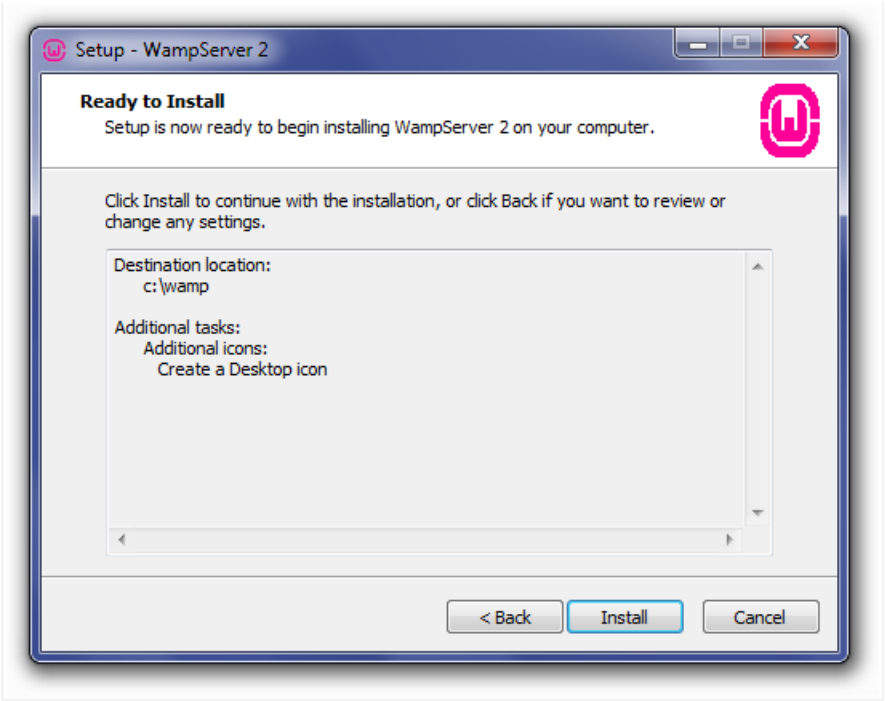
Next you will see the Select Destination Location screen. Unless you would like to install WampServer on another drive, you should not need to change anything. **Click Next** to continue.



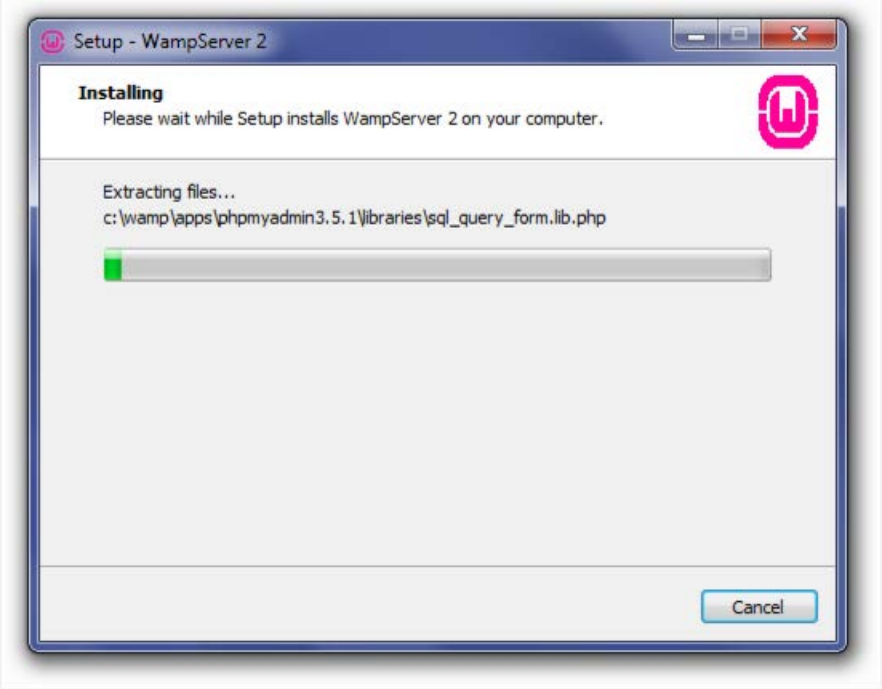
The next screen you are presented with is the Select Additional Tasks screen. You will be able to select whether you would like a Quick Launch icon added to the taskbar or a Desktop icon created once installation is complete. Make your selections, then **click Next** to continue.



Next you will see the Ready to Install screen. You can review your setup choices, and change any of them by **clicking Back** to the appropriate screen, if you choose to. Once you have reviewed your choices, **click Install** to continue.



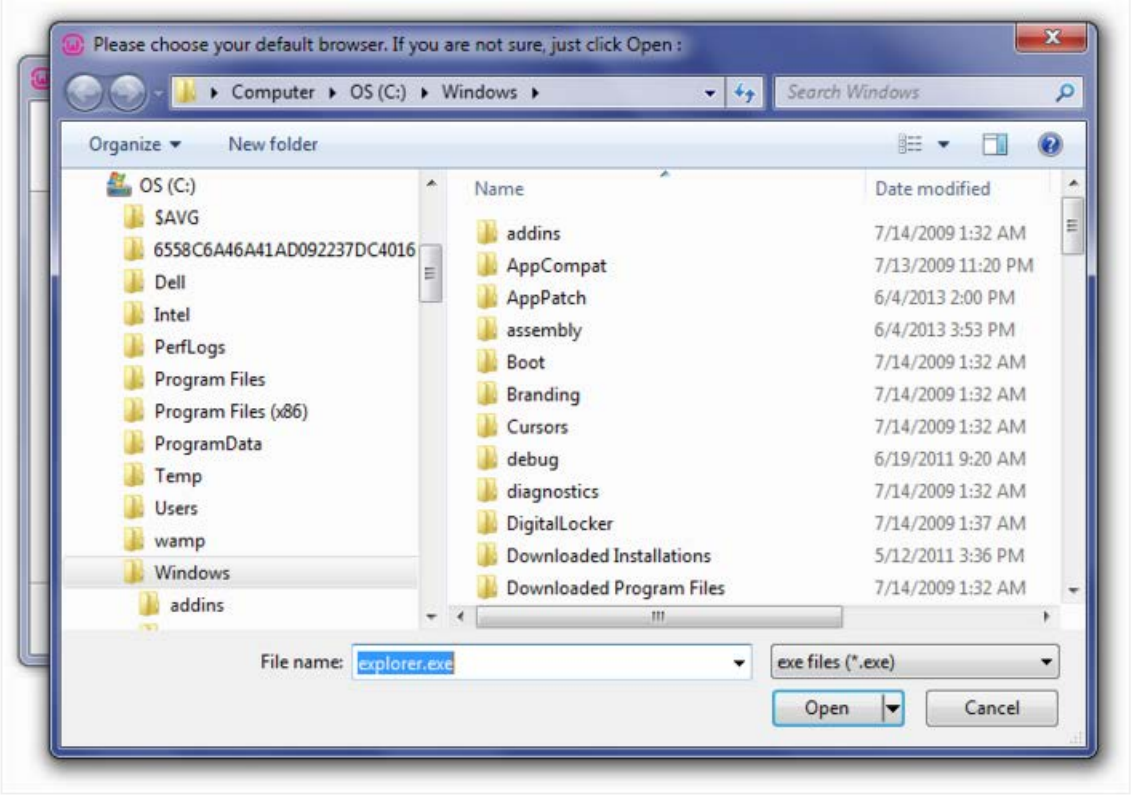
WampServer will begin extracting files to the location you selected.



Once the files are extracted, you will be asked to select your default browser. WampServer defaults to Internet Explorer upon opening the local file browser window. If your default browser isn't IE, then look in the following locations for the corresponding .exe file:

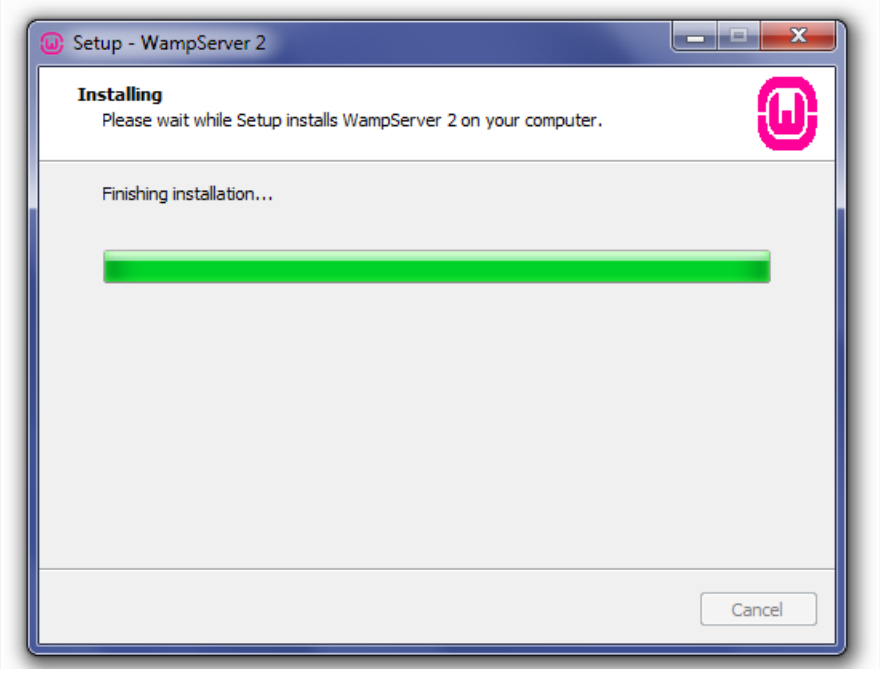
- **Opera:** C:\Program Files (x86)\Opera\opera.exe
- **Firefox:** C:\Program Files (x86)\Mozille Firefox\firefox.exe
- **Safari:** C:\Program Files (x86)\Safari\safari.exe
- **Chrome:** C:\Users\xxxxx\AppData\Local\Google\Chrome\Application\chrome.exe

Select your default browser's .exe file, then **click Open** to continue.

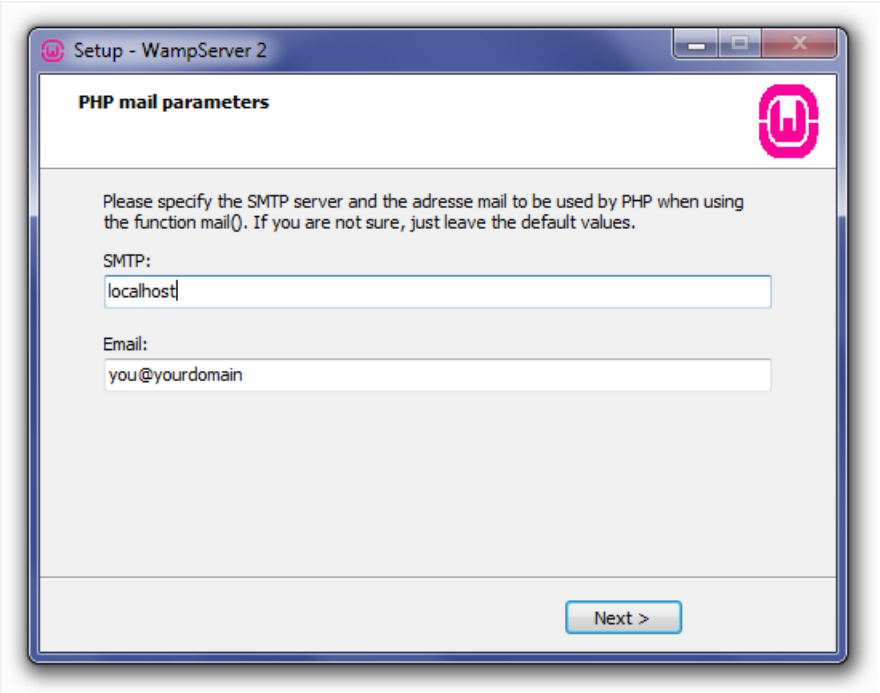


A Windows Security Alert window will open, saying that Windows Firewall has blocked some features of the program. Check whether you want to allow Apache HTTP Server to communicate on a private or public network, then **click Allow Access**.

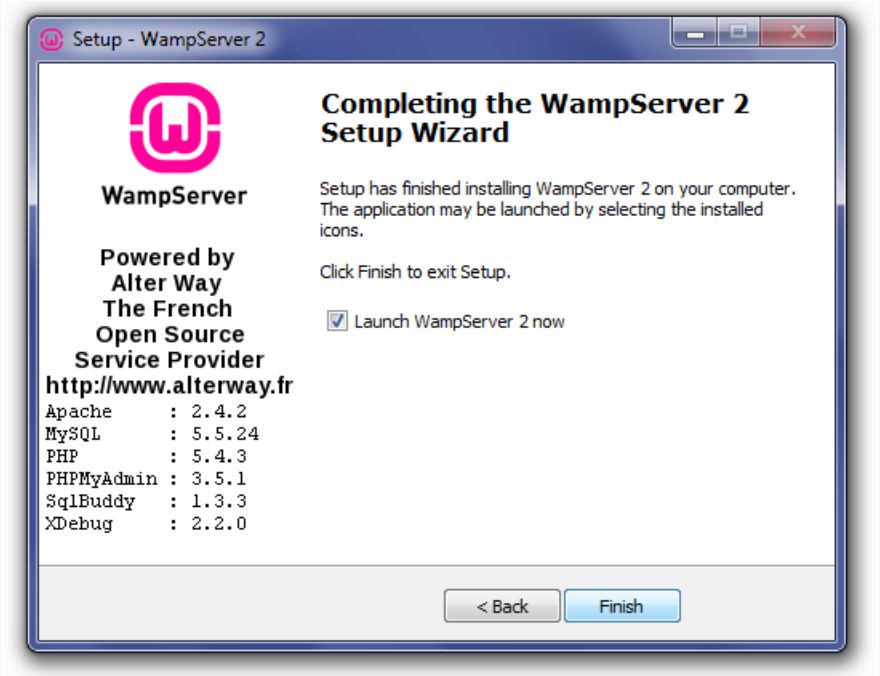
The Setup screen will appear next, showing you the status of the installation process.



Once the progress bar is completely green, the PHP Mail Parameters screen will appear. Leave the SMTP server as **localhost**, and change the email address to one of your choosing. **Click Next** to continue.

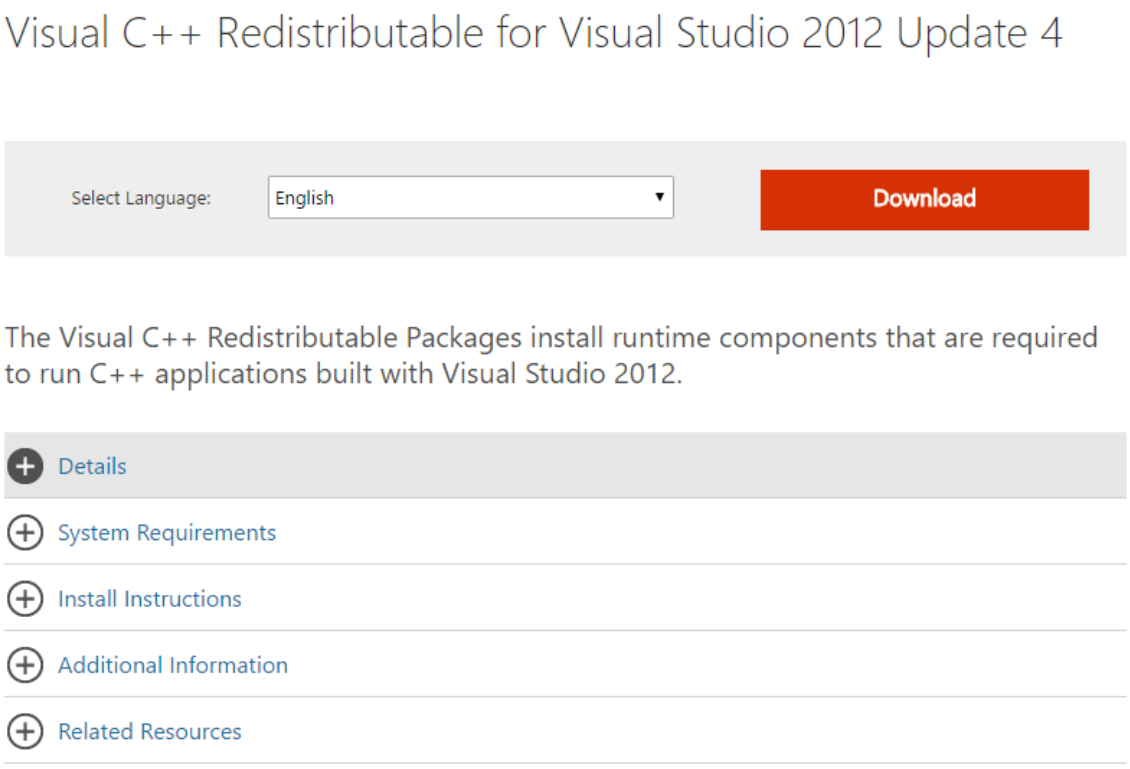


The Installation Complete screen will now appear. **Check the Launch WampServer Now** box, then **click Finish** to complete the installation.

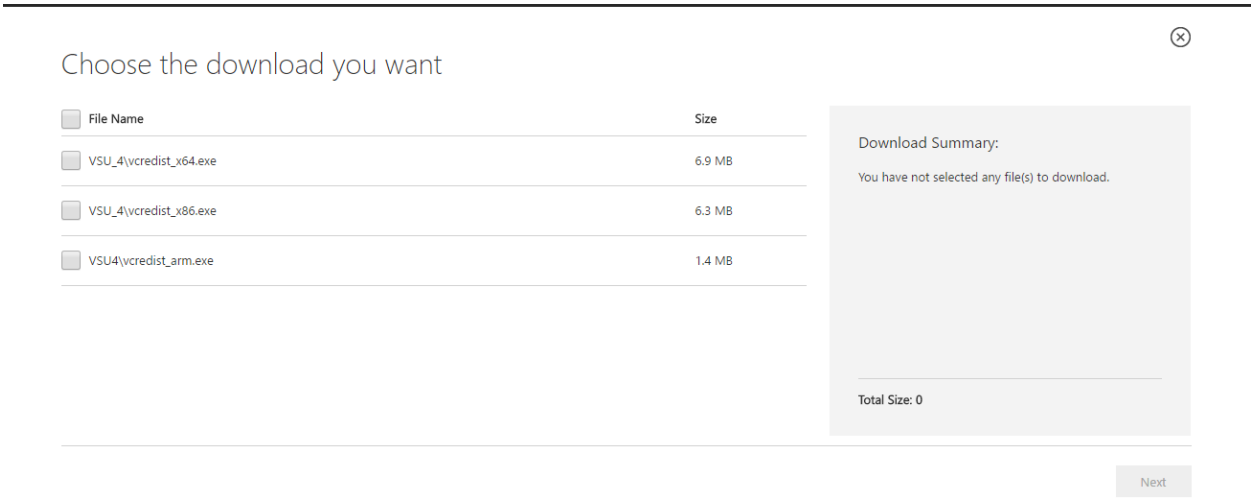


Downloading Microsoft visual C++ redistributable file

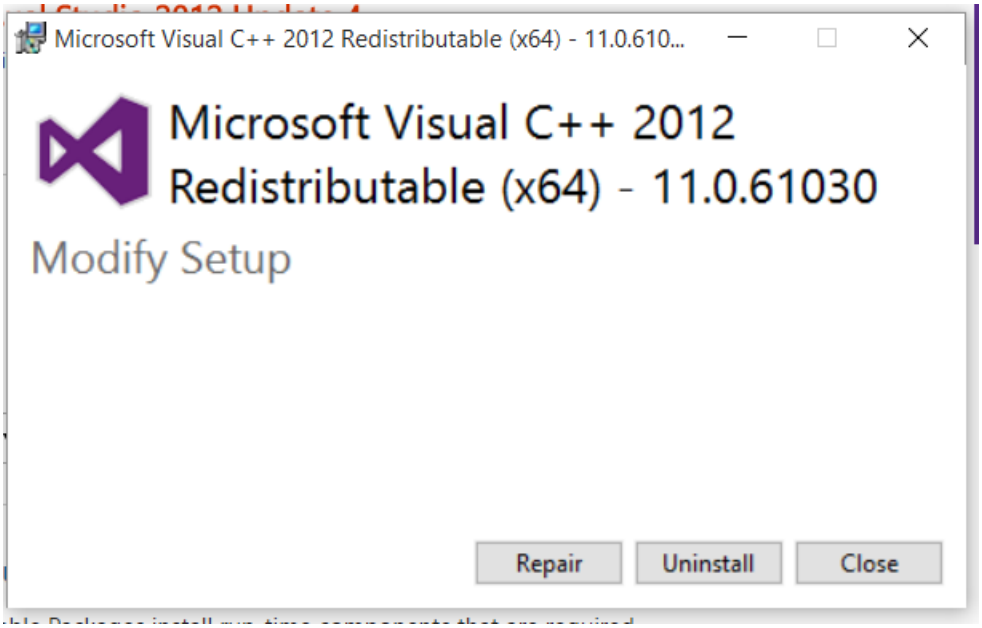
Go to https://www.microsoft.com/en-us/download/details.aspx?id=30679 and download visual C++



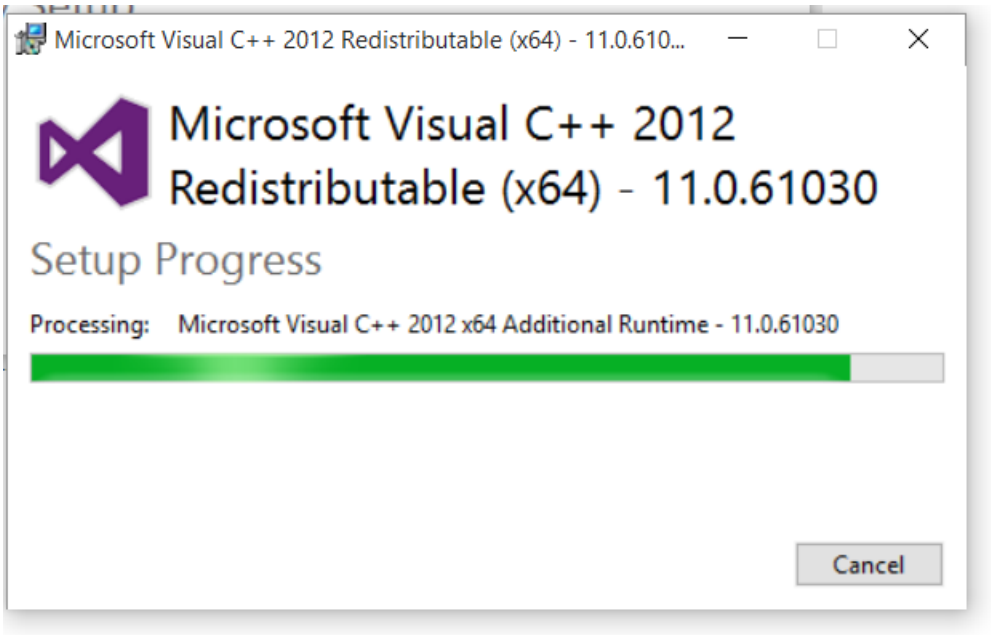
Select the windows version and click on download



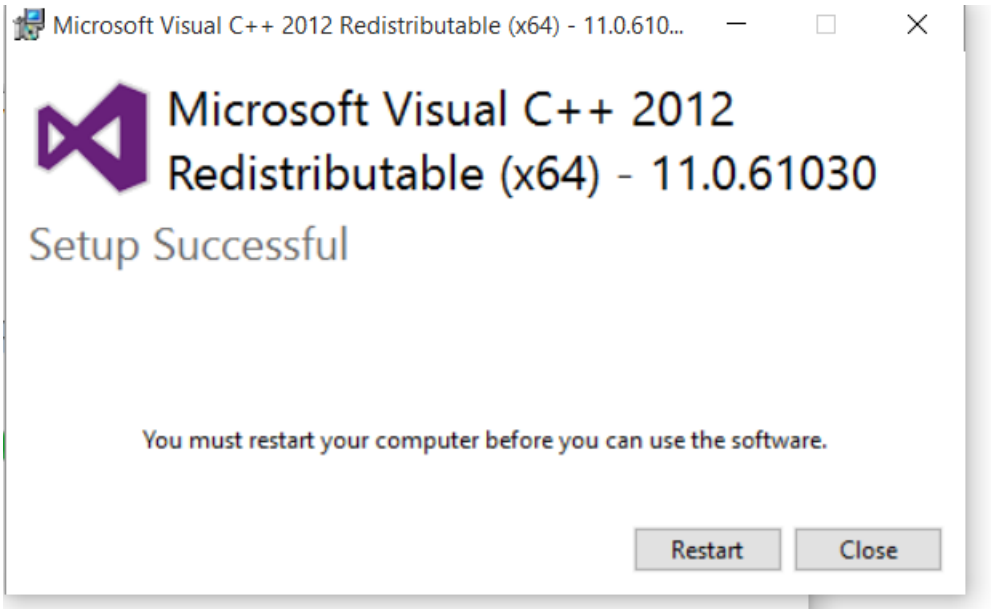
Click on Repair if you already installed it otherwise click install



Installer will begin installing the software

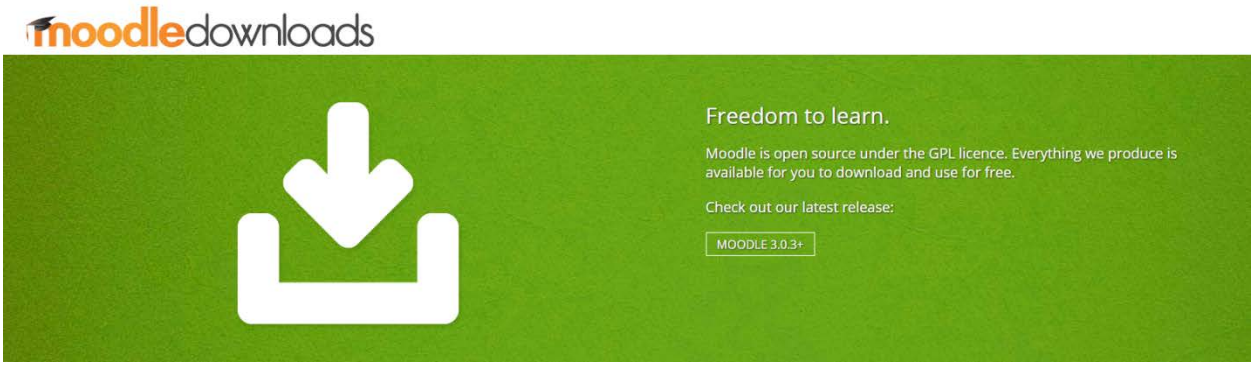


After the installation it will ask to restart the computer click on restart

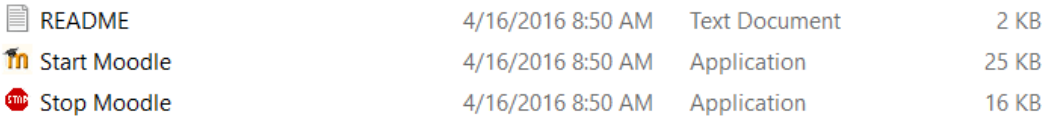


- **Moodle installation**

Download moodle from downloads.moodle.org



Extract the file and click start moodle

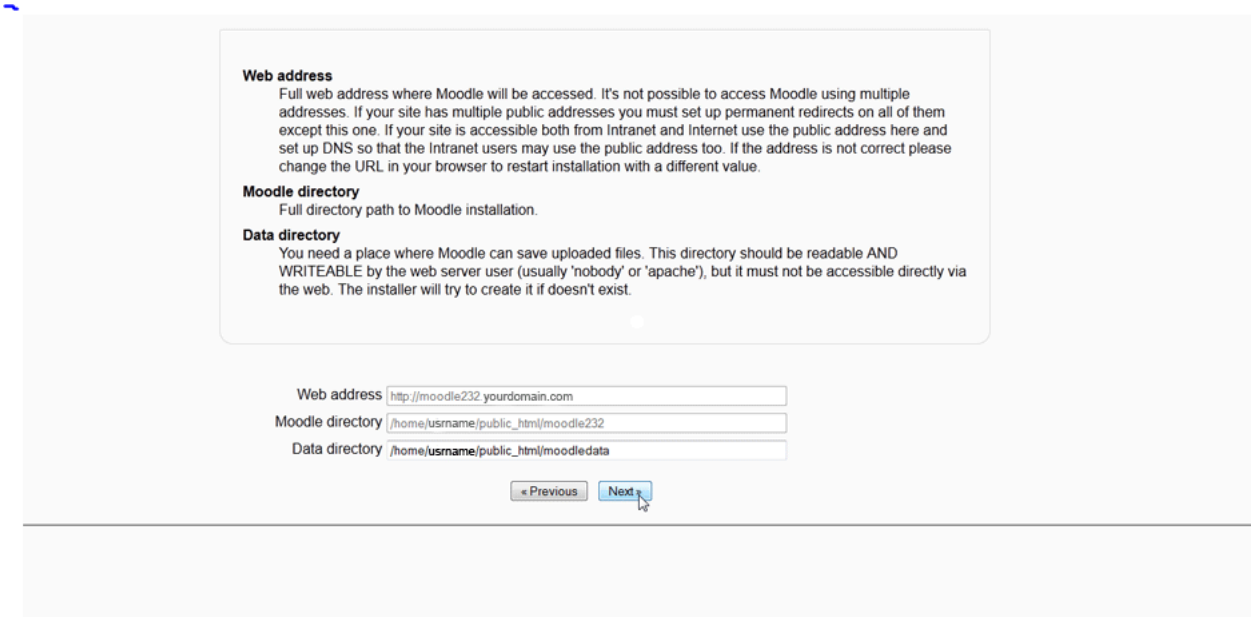


Enter localhost/moodle in the browser and follow the instructions to set up

Choose language as English

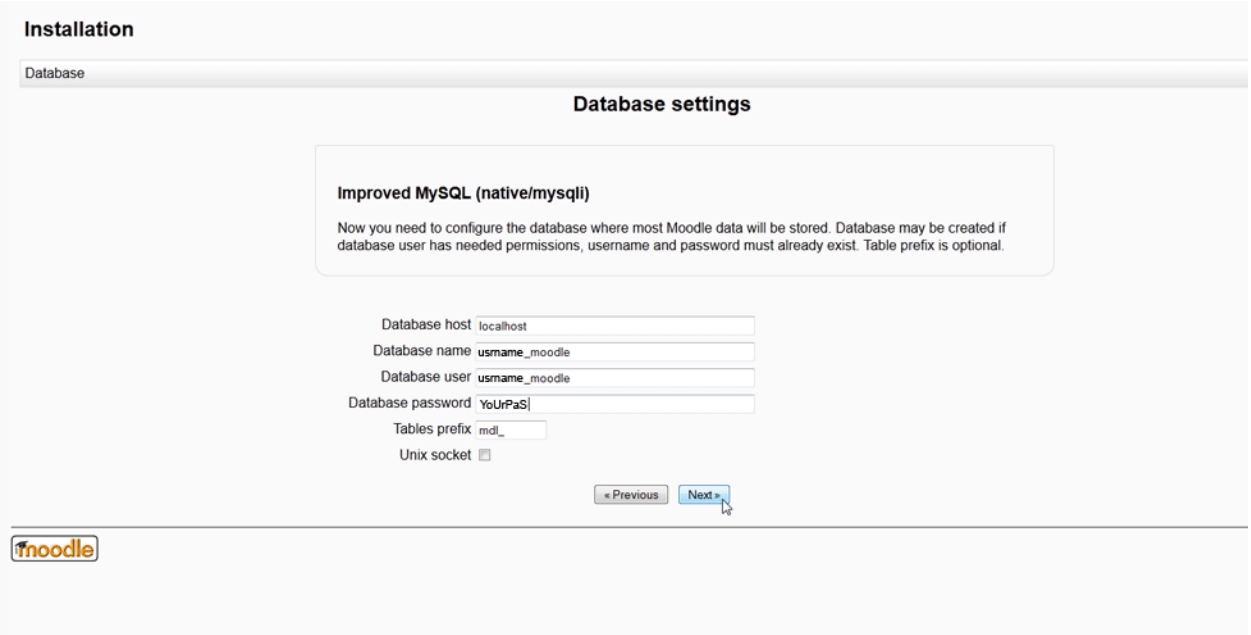
Confirm paths

The next screen will prompt you to Confirm the installation paths for the Moodle installation. The**Web Address** and the **Moodle directory** should be set by the install script by default. The **Data Directory**Will be set as well; except it can be changed if you want the installation in a different directory location on your server. Leave the default paths and click **Next**.



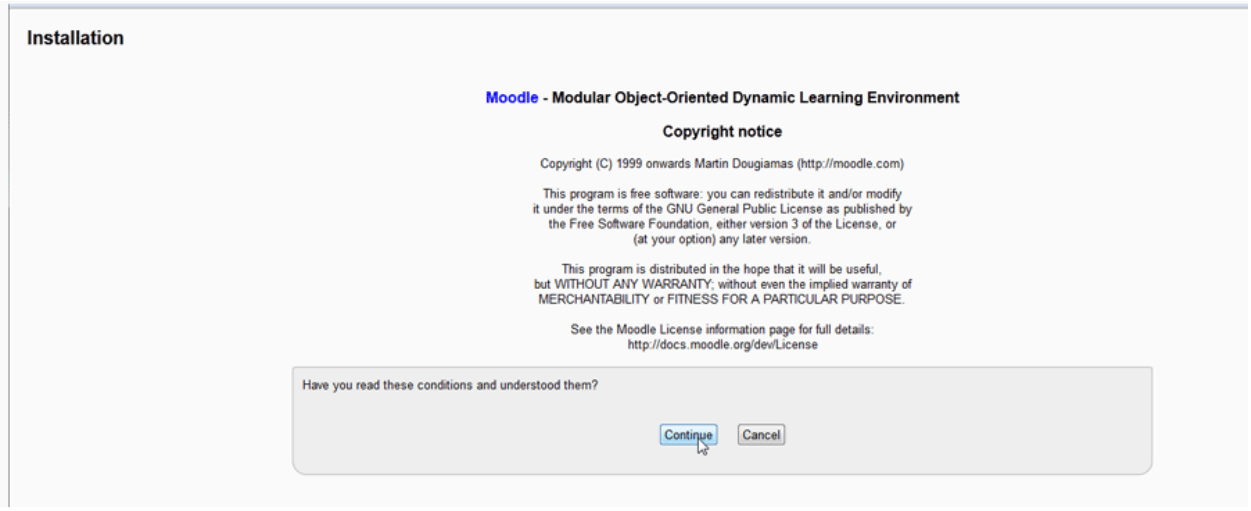
Database settings

Use the Database settings that were set on **step 3 Create the Database for the Installation**. Enter the database name, username, and password. Leave the table prefix as is as this is set for the database table names. Leave the **Unix Socket** setting unchecked and click **Next**.



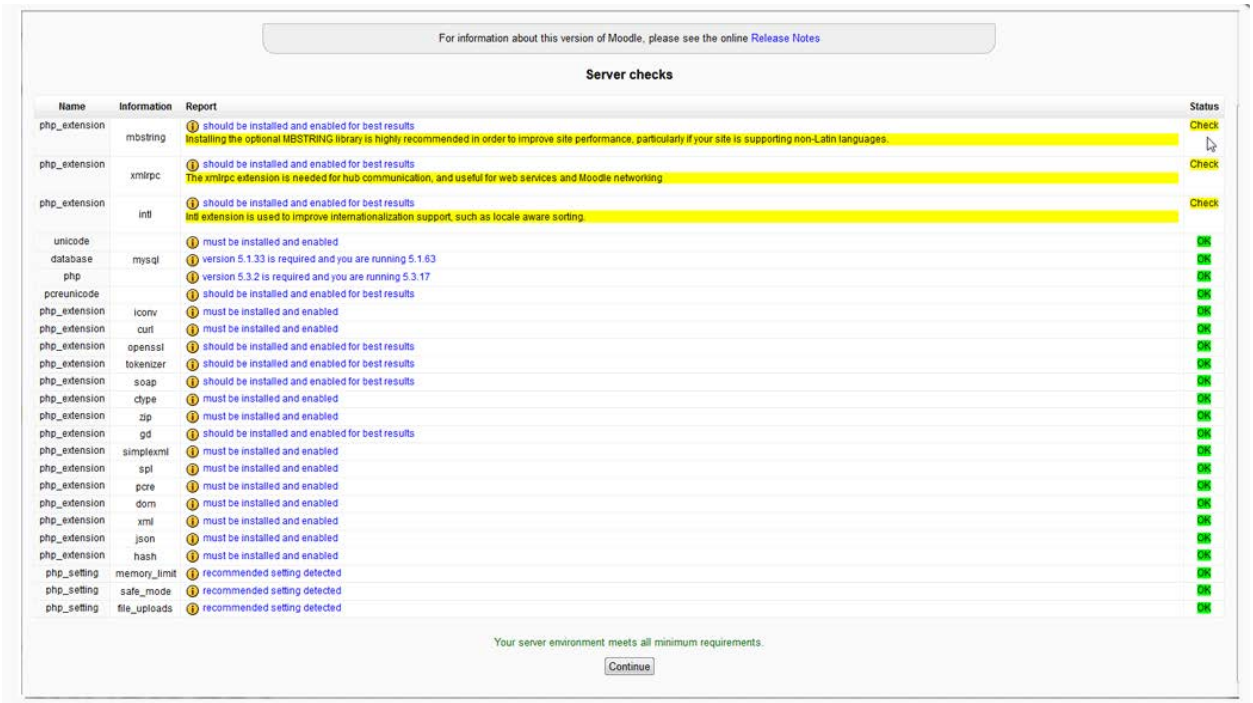
Copyright notice

This page is for accepting the General Public License. Select **Continue** to go to the next install screen.



Server checks

It checks for the required settings



For information about this version of Moodle, please see the online Release Notes

Server checks

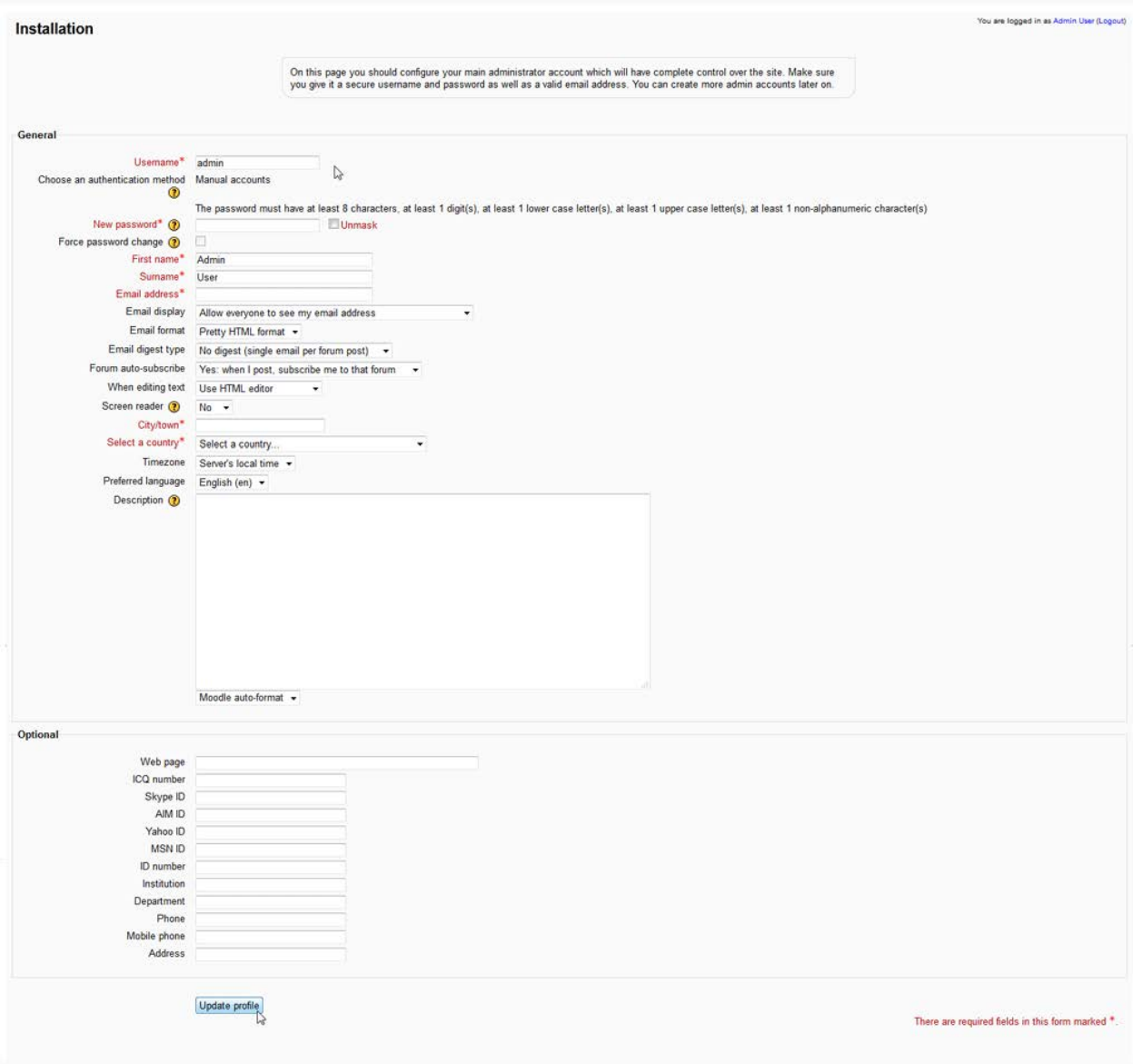
Name	Information	Report	Status
php_extension	mbstring	should be installed and enabled for best results Installing the optional MBSTRING library is highly recommended in order to improve site performance, particularly if your site is supporting non-Latin languages.	Check
php_extension	xmlrpc	should be installed and enabled for best results The xmlrpc extension is needed for hub communication, and useful for web services and Moodle networking	Check
php_extension	intl	should be installed and enabled for best results Intl extension is used to improve internationalization support, such as locale aware sorting.	Check
unicode		must be installed and enabled	OK
database	mysql	version 5.1.33 is required and you are running 5.1.63	OK
php		version 5.3.2 is required and you are running 5.3.17	OK
pcreunicode		should be installed and enabled for best results	OK
php_extension	iconv	must be installed and enabled	OK
php_extension	curl	must be installed and enabled	OK
php_extension	openssl	should be installed and enabled for best results	OK
php_extension	tokenizer	should be installed and enabled for best results	OK
php_extension	soap	should be installed and enabled for best results	OK
php_extension	ctype	must be installed and enabled	OK
php_extension	zip	must be installed and enabled	OK
php_extension	gd	should be installed and enabled for best results	OK
php_extension	simplexml	must be installed and enabled	OK
php_extension	spl	must be installed and enabled	OK
php_extension	pcre	must be installed and enabled	OK
php_extension	dom	must be installed and enabled	OK
php_extension	xml	must be installed and enabled	OK
php_extension	json	must be installed and enabled	OK
php_extension	hash	must be installed and enabled	OK
php_setting	memory_limit	recommended setting detected	OK
php_setting	safe_mode	recommended setting detected	OK
php_setting	file_uploads	recommended setting detected	OK

Your server environment meets all minimum requirements.

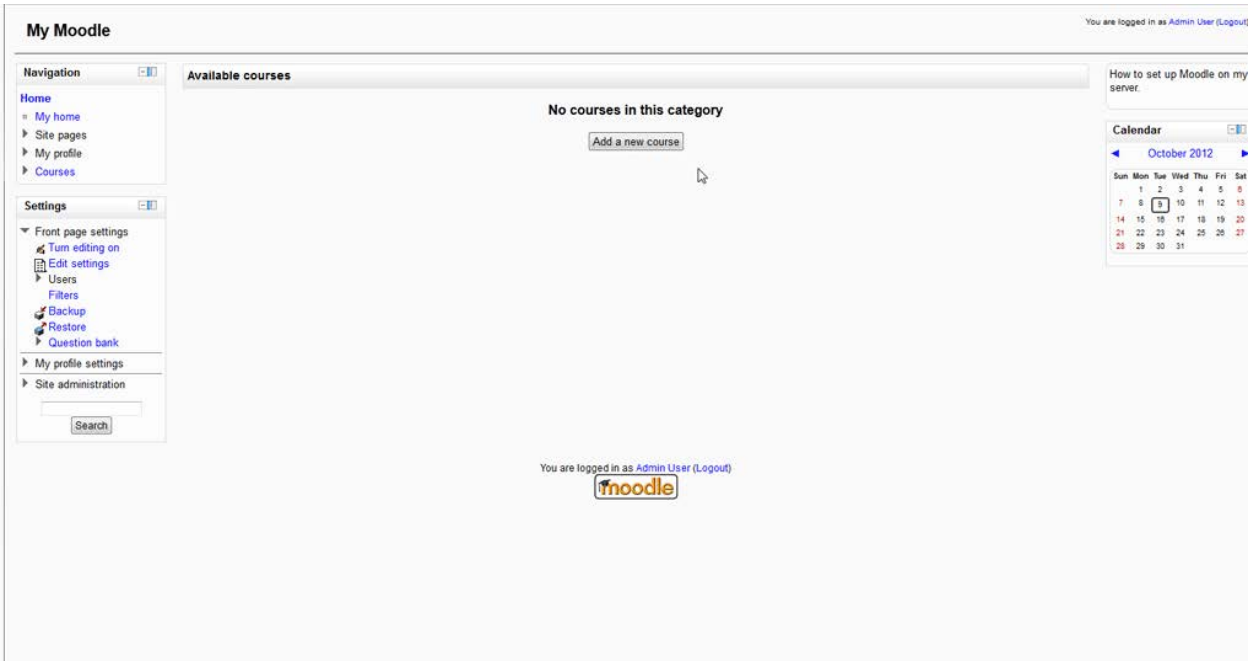
Continue

Server Installation

After the **Continue** button is clicked on the Server Checks Screen, the install script will show a list of tables that are set up for the database. Each should say **Success** in green font.
When Finished Click **Continue**. The Administration set up screen will load for setting up the main administrator account. Once completed setting the administrator, click **Update Profile**.



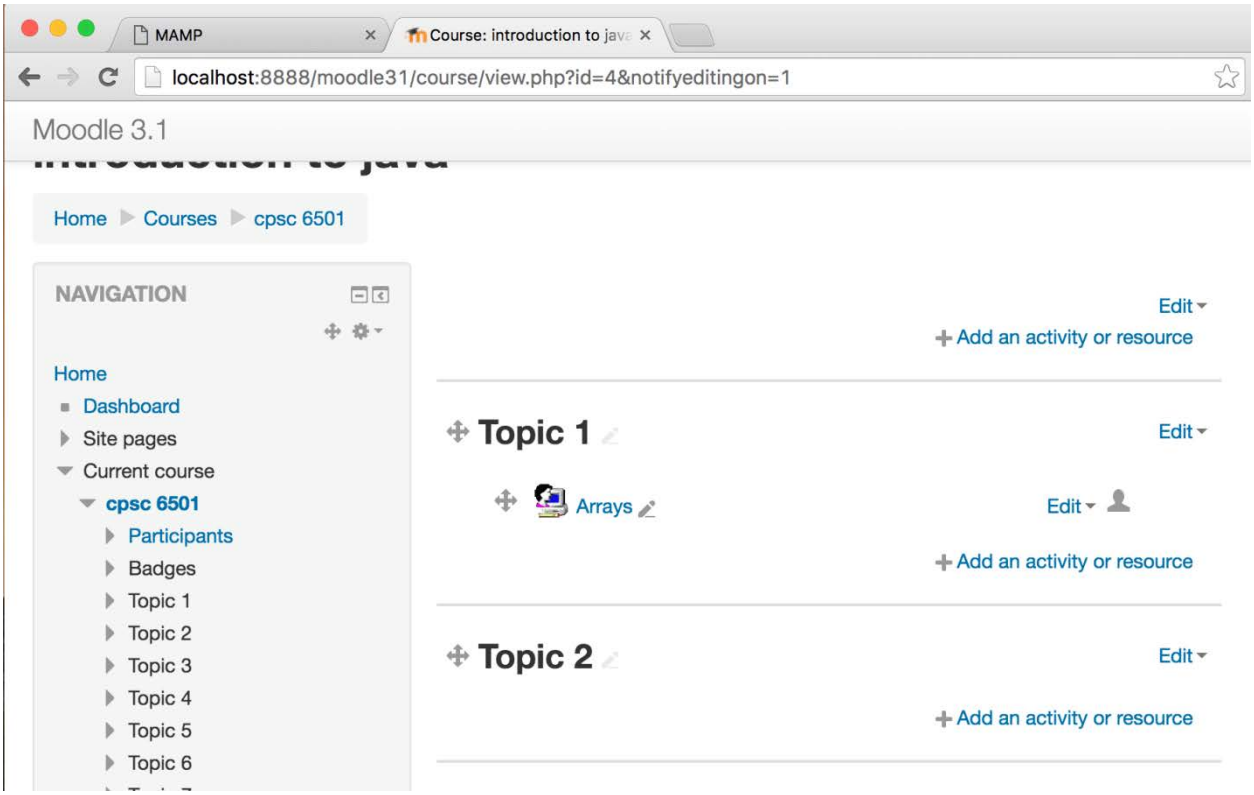
Finishing the installation



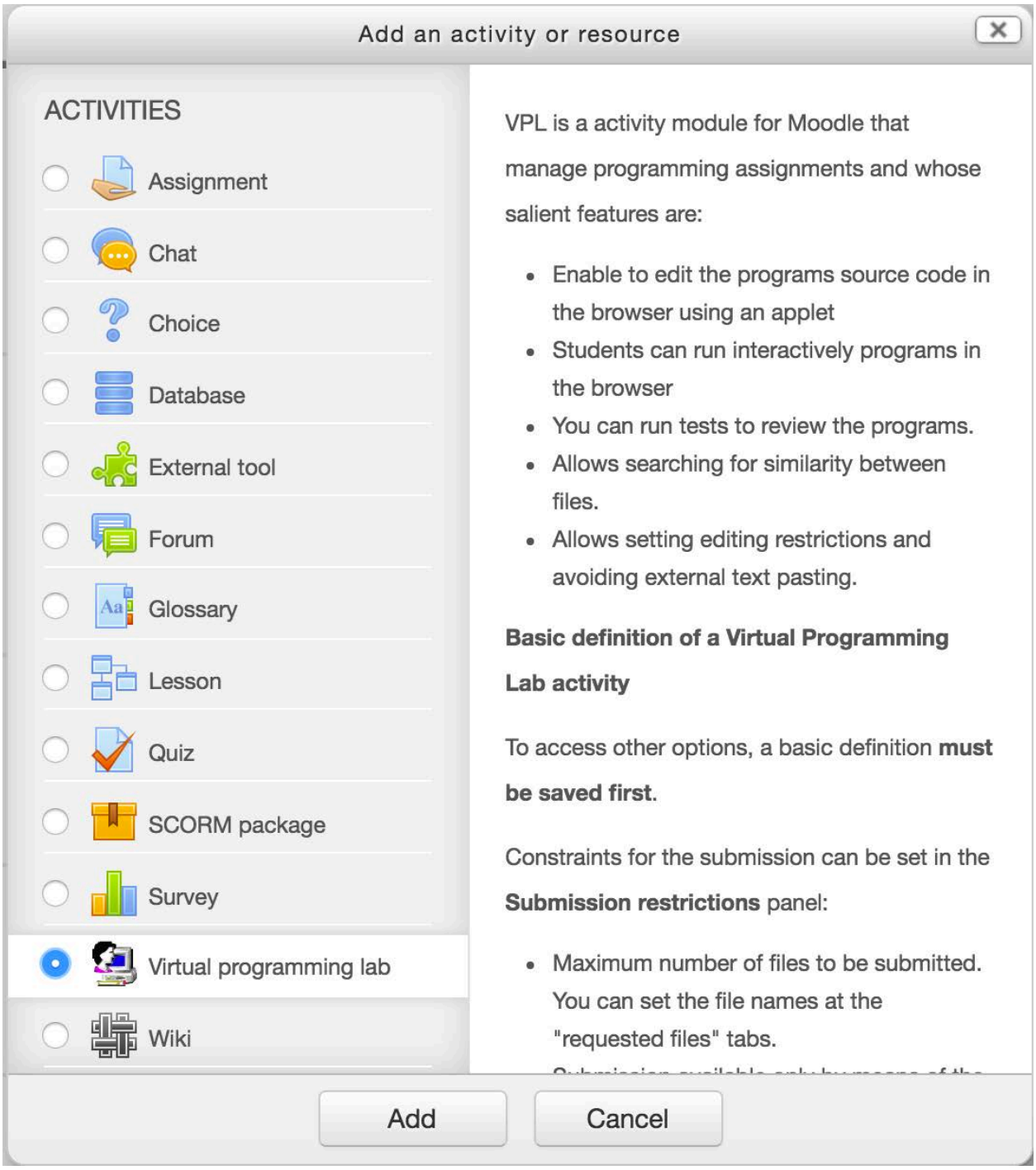
Creating Assignment Using VPL

Select the course you want to add assignment and follow these steps

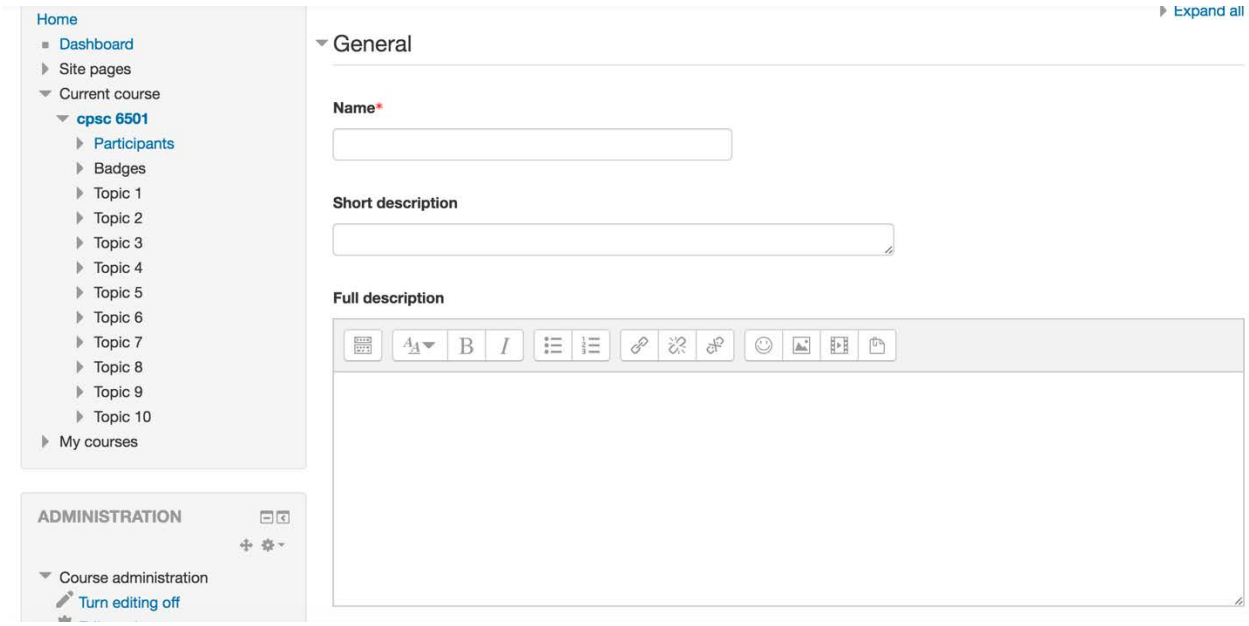
Click on add activity or resource



select virtual programming lab and click on add



enter the details of the activity like Name and Description



3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)

Regular back up and maintenance is performed at regular intervals to ensure that the website is working in the desired mechanism

3.3 Security and Fraud Prevention

All the users must change their passwords at regular intervals to ensure that the account is secured and no other person is using it.

3.4 Release and Transition Plan

After the completion of the project the software has to be installed in the client machine and follow the procedure.

4 Project Design Description

WAMP server acts as a localhost to your machine. In that WAMP server you need to add your moodle project by copying the moodle folder to the www folder of the WAMP server file folder.

5 Internal/external Interface Impacts and Specification

we need to install two plugins to accomplish project requirement. VPL used to post assignments to the course and Junittest to test the java assignments. These two plugins are available in the moodle website.

6 Project Design Units Impacts

6.1 Functional Area A

6.1.1 Functional Overview

WAMP server acts as a source machine to the moodle which is nothing but a platform to the moodle

6.1.2 Impacts

we need to start WAMP server before opening moodle

6.1.3 Requirements

system must have 500 MB RAM and 50 GB hard disk space to install the WAMP server

6.2 Functional Area B

6.2.1 Functional overview

Moodle provides platform for online Learning Management System used in universities and educational institutes

6.2.2 Impacts

provides useful software which is easy to navigate and user friendly

6.2.3 Requirements

First we need to install WAMP server and then visual C++ redistributable file to work moodle

7 Open Issues

The test cases must be written in a proper way so that any student cannot get full marks if he does not meet the requirement

8 Acknowledgements

As moodle is open source software so many developers modified the code and made it simple to use

9 References

Moodle (n.d.) Retrieved January 25th, 2016 from http://www.moodle.org

WAMP server (n.d.) Retrieved January 25th, 2016 from http://www.wampserver.com