COWB50137 Open Source Web Programming (2016)

Credits: 15
Total Learning hours: 150
Section: Computing, Engineering and Technology

Aims and Summary

This subject looks at open source web programming and possible languages used. It will also address database connectivity and computing design issues and testing.

Intended Module Learning Outcomes

On completion of this module the student should be able to:

1. Plan and program open source web applications with database connections
2. Devise test plans to test web programs
3. Reflect upon the current open source programming/scripting used to create web applications

Indicative Content

- Further PHP programming including the use of OO-principles
- Connection via PHP to external data sources
- Javascript/XML (for AJAX and Web Programming)
- Testing and test plans for web sites
- Testing processes

Teaching and Learning

The lecture will support the one lab session of two hours. The lab sessions will support the underlying knowledge and skills required to complete the module, and will be facilitated with booklets, course texts and the Internet. Group discussions will also take place in these sessions.

Method of Assessment

100% coursework
Assignments:(Learning outcome 1, 2, 3)

A portfolio showing various examples of open source web programming/scripting
(worth 72%).
A report to support the examples and underlying principles of open source web programming/scripting
(worth 28%)

Recommended Reading

- Directed reading will be given in lectures
- Brinzarea-Iamani , B. AJAX and PHP: Building Modern Web Applications", 2nd Edition. Publisher: PACKT PUBLISHING, ISBN-10:1847197728
- MySQL – http://www.mysql.com/

Indicative Schedule

Two lectures (2 hrs) and one tutorial (1 hr) per week

Week 1	Scope of the course. Set up the environment. Installation of Apache web server, MySQL and PHP. Javascript and DOM. XMLHttpRequestObject. Construction of test cases.
Week 2	AJAX Form Validation
Week 3	PHP sessions, cookies, classes and objects.
Week 4	OO principles. Javascript OOP. XML. JSON.
Week 5	Using PHP and MySQL on the server

Week 6	Debugging and profiling AJAX applications
Week 7	Advanced Patterns and Techniques
Week 8	AJAX with jQuery
Week 9	AJAX Grid
Week 10	Objectives of testing. Testing classifications: unit, functional, usability, regression, performance.
Week 11	Testing: server-side interface, client-side compatibility. Test plans
Week 12	Testing Processes: Process organization/Process management/Best industrial practices

Tutorials/Assignments

Topics of assignments

1. Basic AJAX PHP programming, AJAX Form validation and PHP programming WK 3
2. AJAX PHP session programming, AJAX PHP cookies programming WK 6
3. AJAX jQuery PHP MySQL, XML/JSON application WK 9
4. AJAX jqGrid jQuery PHP database application, Test plan. WK 12

Web Programming (Total: 100 marks)

Exercise One (25 marks)
Exercise Two (25 marks)
Exercise Three (25 marks)
Exercise Four (25 marks)