Web Application Development II (IT3505)

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Agenda

- Main objectives of the course
- Prerequisites
- Recommended Reading Material
- Syllabus
- LMS Content
- Final Examination

Main objectives of the course

Provide knowledge and skills essential for the development of real-world web applications.

LEARNING OUTCOMES

After successful completion of this module students will be able to:

- Describe the fundamental and advanced concepts of PHP
- Describe the MVC architecture
- Employee PHP frameworks to create web applications
- Employ Advanced features of client-side programming using JavaScript and Ajax to add interactivity to web pages
- Employee JavaScript libraries in web pages

Prerequisites

1) Knowledge in Programming Languages and Programming.
   - Semester II - Programming I (IT2205)

2) Knowledge in Web Application Development. (HTML)
   - Semester I - Web Application Development I (IT2205)

3) Knowledge in Databases and SQL
   - Semester II – Database Systems I (IT2305)

4) Object Oriented Programming
   - Semester III – Object Oriented Analysis and Design(IT3105)

Recommended Reading Material

1) PHP, MySQL, JavaScript & HTML5 All-in-One For Dummies , John Wiley & Sons, Inc. 2013

2) HTML 5 Black Book , Kogent Learning Solutions Inc ,2011

3) Useful links to a number of websites

- http://www.w3schools.com

Syllabus

Topic	Hours
Server Side Web Development (PHP & MySql)	30
Fundamentals of Asynchronous JavaScript and XML (AJAX)	10
Advanced Client Side Development	15
Introduction to Information Security	05
Total	**60**

Server Side Web Development (30 Hours)

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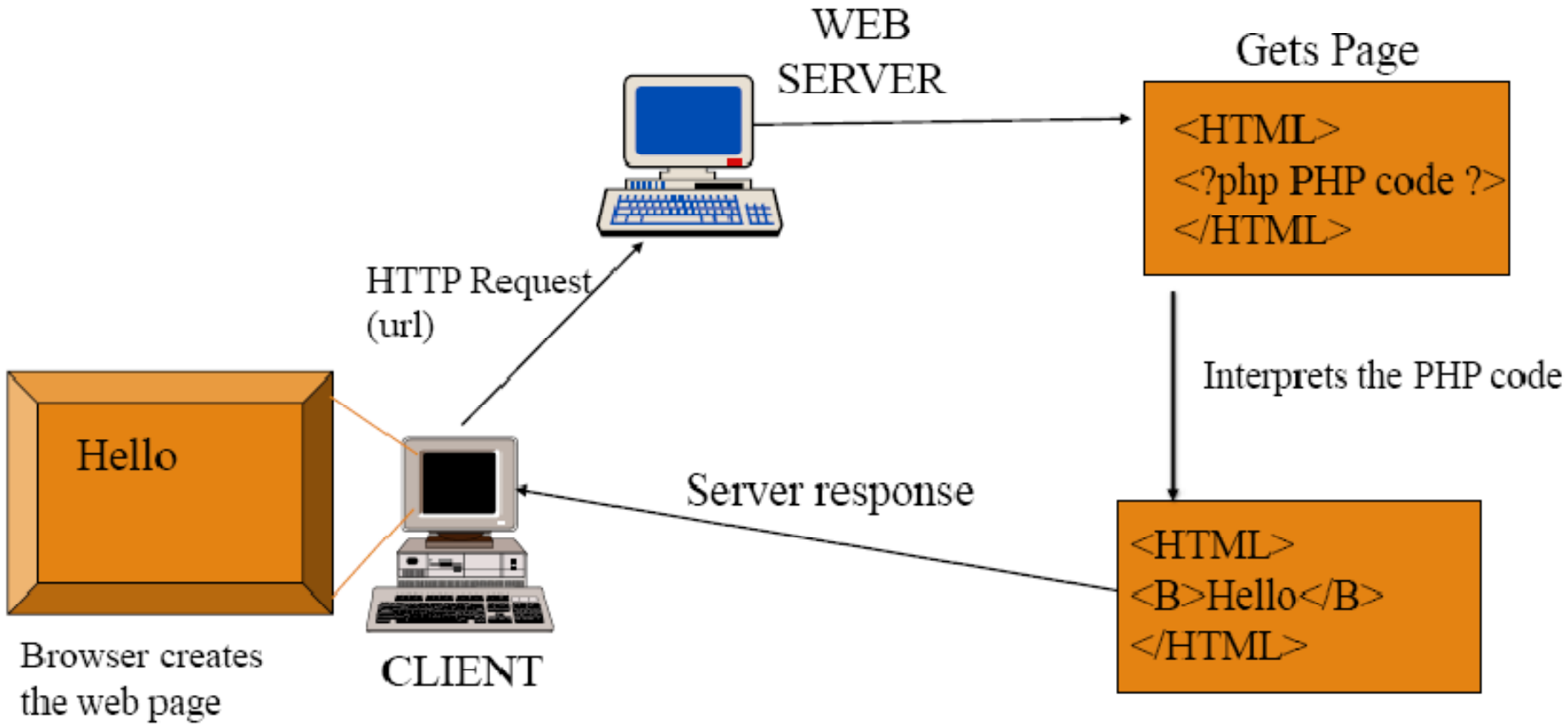

Server Side Web Development (30 Hours) ……

Several different languages can be used for server side application

- Main Emphasis is on PHP (Hypertext Preprocessor)
  - How PHP scripts can be used to build stand-along applications
  - How PHP scripts can be embedded in HTML pages

PHP Programming

- Structure of a PHP script
- Comments
- Variables and Constants, Scope of variables
- Control Structures
  - If .. else
  - Nested if ..else
  - Switch
  - While
  - do .. While
  - for
- Functions
- Data structures – Strings,Arrays

OO Programming with PHP

- Structure of a class
- Class attributes and methods
  - Constructors and Destructors
  - Static attributes/methods
  - Class constants
- How to extend classes(class inheritance)
- Creating class objects
- Building applications by using classes

Form processing with PHP

- How a HTML form can send data to the server?
  - POST
  - GET
- PHP Global variables
  - $_POST
  - $_GET

PHP programming

- Session control and Cookies.
- PHP data input-output mechanisms
  - echo, print
  - Reading and writing data to files
  - File system management

Working with MySQL Database

- Typical steps to be taken in a PHP script to manage data in a Database.
- How to use the PHP library `mysqli`
  - How to establish a connection to a MySQL database server.
  - How to execute a SQL query over a MySQL database.
  - How to process the result of a SQL query.

PHP Frameworks and Web Services

- Why you need a Framework
- How a Framework is different from software libraries.
- Model-View-Controller (MVC) design pattern.
- How PHP applications can be developed by using CodeIgniter Framework (version 2.2)
- How to build Web Services by using PHP

Advanced Client Side Development (Section 2 and 3)

- XML
- DOM (Document Object Model)
- How JavaScipts can be used in HTML pages
  - How to get and set values of DOM objects.
  - How eventListeners can be linked with DOM objects.
- Advantages in using AJAX
- How AJAX can be used in a web application
- AJAX libraries – jQuery
- Building single page applications (eg. Facebook)

Introduction to Information Security (Section 4)

- No questions from this section at the final examination

LMS Content

- Provides only a guideline
- PowerPoint slides on section 1
- Few PowerPoint slides on section 3
- References to relevant pages in the recommended reading.

Final Examination

- Held at the end of the semester.
- Two hour question paper.
- Final Paper comprises of two parts.
  - First Part – 20 MCQs
  - Second Part – 4 Structured Questions