Course : Web Application Development

Department of Computer Science

Semester: 04

Methodological Teaching Unit (UEM)

Credits: 4
Coefficient: 2

Teaching Objectives

The ultimate goal of this course is to teach students how to implement a Web application.

Recommended Prerequisites

Students should have fundamental concepts on algorithms and programming, along with basic knowledge about the Internet and Networks.

Content Overview

Chapter 1: Introduction to the World Wide Web

1. Definition and history
2. Client/Server Architecture
3. HTTP Protocol

Chapter 2: Programming Languages for the Web

Generalities

- Static page, dynamic page, and Web applications

Markup Languages

- Definition and history

HTML

1. What is HTML?
2. HTML Execution Context
3. Basic HTML
    - Structure of an HTML document (header, body, links, etc.)
    - Tables, Frames, Forms
    - HTML 5.0
    - Style Sheets (CSS 3)

- JavaScript
- Controlling HTML forms in JavaScript

XML

1. Structure of an XML document
2. DTD (Document Type Definition)
3. XML Schema
4. XSLT

Chapter 3: Server-Side Programming Language (PHP)

1. Introduction
2. Basic Syntax
   - Transitioning from HTML to PHP
   - Instruction Separators
   - Comments
3. Types, Variables, and Operators
4. Control Structures
5. Classes and Objects
6. Features
   - Error Handling
   - File Upload Management
   - Remote File Usage
   - Connection Management
   - Persistent Database Connections
   - Session Management
   - 3-tier Web Applications in PHP

Chapter 4: Web Services: Basic Concepts

1. Introduction
2. Service-Oriented Architecture (SOA)
3. Web Services Features
   - Definition of Web Services
   - Architecture of Web Services
4. Standards for Web Services
   - SOAP
   - WSDL
   - UDDI
5. Web Services Development Platforms
   (a) Development of Web Services (provider side)
   (b) Development of Web Services (consumer side)

6. .NET and Java Platforms
    - JSP
    - ASP

Chapter 5: Case Study: Development of a Web Service (provider side then client side)

Evaluation Mode

Examination: 60%
Continuous Assessment: 40%

References

- Web Development Course. Available on: `https://openclassrooms.com/courses`
- Jean ENGELS. *"PHP 5 – Course and Exercises"*. Eyrolles Editions, 2005
- Mathieu Lacroix, *"Introduction to Web: Course"*. University Paris 13, 2013.
- Digimind Company. *"Web 2.0 for Monitoring and Information Research, Utilizing the Resources of the Social Web"*. Digimind, June 2007.