Course Name : Open source Technologies

Course Type: DSE   Course Credits: 3+1 credits

Course objectives: To expose students to free open source software environment and introduce them to use open source packages.

Learning outcomes :

After successful completion of this course student will be able to:

1. Understand the concept of open-source technologies
2. Analyze PHP scripts and determine their behavior.
3. Construct PHP scripts to create dynamic web content.
4. Create PHP scripts capable of inserting and modifying data in a MySQL database.
5. Design web pages with the ability to retrieve and present data from a MySQL database.

Unit I
Introduction to Linux, History, Difference Between Linux and Windows., Difference Between Linux and Unix, Linux is Virus proof, Various Linux Distributions, Pros and Cons Understanding Files and Directories in Linux - File Structure and hierarchy, File Permissions, root, shell, Using VI editor and command associated with it.Basic Commands –mkdir, touch, ls, pwd, cd, chmod, df, du, dd, adduser, passwd, rm, rmdir, date.

Unit II
Introduction to PHP- History of web programming; how PHP fits into the web environment; installation and configuration, syntax, variables, operators, flow control structures
More language basics; using GET and POST input, working with HTML, forms; built-in and user-defined functions; variable scope; using the PHP manual, getting help

Unit III
Input validation, string manipulation and regular expression functions; date and time functions, code re-use, require(), include(), and the include_path; filesystem functions and file input and output; file uploads; error handling and logging; sending mail, HTTP headers and output control functions; HTTP cookies; maintaining, state with HTTP sessions; writing simple web clients

Unit IV
Introducing MySQL; database design concepts; the Structured Query, Language (SQL); communicating with a MySQL backend via the PHP, MySQL API

References

1. N. B. Venkateshwarlu (Ed); Introduction to Linux: Installation and Programming, B S Publishers; 2005.

2. Matt Welsh, Matthias KalleDalheimer, Terry Dawson, and Lar Kaufman, Running Linux, Fourth Edition, O'Reilly Publishers, 2002

3. Programming PHP. RasmusLerdorf, Kevin Tatroe., (O'Reilly, ISBN 1565926102)

4. Learning PHP 5. David Sklar, (O'Reilly, ISBN 0596005601)

5. Core PHP Programming. Leon Atkinson, (Prentice Hall, ISBN 0130463469)

Course Name : Lab on Open Source Technologies

List of Practical

- Install a Linux distribution (e.g., Ubuntu).
- Compare and contrast the user interface of Linux with that of Windows.
- Explore the Linux directory structure and identify key directories like /home, /etc, and /var.
- Modify file permissions of a given file and explain the different permission sets.
- Add a new user using adduser and change its password with passwd.
- Install PHP and set up a local development environment.
- Explore PHP variables by storing and displaying different data types.
- Create a PHP script that receives GET and POST input and displays it.
- Build a simple form in HTML that sends data to a PHP script.
- Define and invoke user-defined functions in PHP.
- Investigate variable scopes: global vs. local.
- Build a registration form and validate user inputs (like ensuring an email is in the correct format).
- Use string functions to manipulate and format strings in PHP.
- Use require() and include() in a multi-page PHP application.
- Write a PHP script that reads and writes to a file.
- Design a custom error handling system for a PHP application.
- Use PHP to send an email with a given subject and message.
- Design a simple login system that uses PHP sessions.
- Install MySQL and set up a local database.
- Design a simple relational database (e.g., a user database with fields for username, password, and email).
- Perform CRUD (Create, Read, Update, Delete) operations on the database using PHP and SQL.
- Design a simple web application (like a blog) that uses PHP for the frontend and MySQL for the backend.