Programming in PHP/MySQL
PHP/MySQL Beginner: Level 1

Nature of the Course: Theory + Practical
Total Hours per Day: 2 Hours
Course Duration: 4 Weeks

Course Summary

This level of the course targets beginners who want to learn how to think and write meaningful piece of codes in PHP/MYSQL, understand how to read PHP/MYSQL codes that have been written by somebody else and how to map literary description of a problem (requirement) to an application/library coded in PHP/MYSQL. In summary, this course teaches how to program using PHP/MYSQL programming language. This is a core basic level course that is essential for anyone who has no prior programming experience but wishes to be a professional PHP/MYSQL engineer in future.

Completion Criteria

After fulfilling all of the following criteria, the student will be deemed to have finished the Module:

1. Has attended 90% of all classes held.
2. Has received an average grade of 80% on all assignments
3. Has received an average of 60% in assessments.
4. The tutor believes the student has grasped all of the concepts and is ready to go on to the next module.

Required Text Books

1. Lynn Beighley and Michael Morrison, "Head First PHP & MySQL", O'Reilly.
2. Vikram Vaswani, "PHP: A Beginner's Guide", McGraw Hill.

Prerequisites

- Fundamental understanding of programming, bits/bytes, procedures, classes, and computer architecture. It's absolutely acceptable if you only have a theoretical understanding of programming, but you should be certain about what programming is and what you intend to gain from this session.
- If you are only interested in theory and have no interest/patience in spending at least 10 hours every week throughout the duration of the course, then this course might not be for you.

- If you have absolutely no idea about programming or do not see yourself doing programming in the next six -odd months, then this class may not be for you.

Course Details

WEEK 1

UNDERSTANDING THE PHP / MYSQL BASICS

- How PHP Works
- The PHP.ini File
- PHP Tags
- PHP Statements and Whitespaces
- Comments
- PHP Functions

VARIABLES

- Variable Types
- Variable Names
- Constants

WEEK 2

FLOW CONTROLS

- If Statements
- For Loop
- While Loop
- Case Statements

WEEK 3

REUSING CODE AND WRITING FUNCTIONS

- Including Files and Writing Functions
- Require
- Require Once
- Include
- User Functions
- Defining and Calling Functions

WEEK 4
INTRODUCTION TO DATABASE

- Basic Difference between Database and File System
- Introduction to MySQL
- Connection Mechanism using PHP and MySQL
- Creating Table, Select, Insert, Update and Delete Command
- Making Form with jQuery Validation and Inserting in Table
- Displaying all Rows of Table and Disable in HTML Table Format
- Edit Records using HTML Form
- Deleting Records
- Single-Dimensional Arrays
- Multi-Dimensional Arrays
- Casting Arrays
- Associative Arrays
- Accessing Arrays
- Getting the Size of an Array
- Looping through Arrays
- Looping through Associative Arrays
- Examining Arrays
- Joining Arrays
- Sorting Arrays
- Working Examples

LABS

Lab assignments will focus on the practice and mastery of contents covered in the lectures; and introduce critical and fundamental problem-solving techniques to the students.

Intermediate PHP/MySQL: Level 2

Nature of the Course: Theory + Practical
Total Hours per Day: 2 Hours
Course Duration: 4 Weeks

Course Summary

The DTC – PHP/MYSQL – Level 2 course is targeted for trainees who have had some prior beginner level hands-on programming experience in PHP/MYSQL programming language or in some other programming language (e.g., Java, Obj-C, PHP, C, C++, etc.) and want to learn PHP/MYSQL. This course teaches you how to utilize the PHP programming language and MySQL database server to construct dynamic web pages and interactive websites. This course walks you through the process of building a comprehensive website that can dynamically show data from a MySQL database, with clear, step-by-step instructions and templates.

Completion Criteria

After fulfilling all of the following criteria, the student will be deemed to have finished the Module:

1. Has attended 90% of all classes held.
2. Has received an average grade of 80% on all assignments
3. Has received an average of 60% in assessments.
4. The tutor believes the student has grasped all of the concepts and is ready to go on to the next module.

Required Text Books

1. Paul Gibbs, "PHP Tutorials: Programming with PHP and MySQL", Paul Gibbs.
2. Kevin Tatroe and Peter MacIntyre, "Programming PHP", O'Reilly Media.

Prerequisites

- Successfully complete the entrance test with score of at least 40% (for trainees directly applying to this level).
- Successfully complete the DWIT Training – PHP/MYSQL – Level 1 course (not applicable to trainees directly applying to this level).
- Successfully complete the interview.

- Willing and eager to spend at least 10-20 hours (varying from student-to-student) per week outside of the training class to read/write codes in PHP/MYSQL (self-study and practice).

COURSE DETAILS
WEEK 1
FUNCTIONS

- Introduction to Functions
- Returning Values from Functions
- User-Defined Functions
- Variable Scopes
- Accessing Variables with the Global Statement
- Function Calls with Static Statements
- Setting Default Values for Arguments
- Passing Arguments to a Function by Value
- Passing Arguments to a Function by Reference
- Testing for Function Existence
- Working Examples

WORKING WITH THE FILE SYSTEM

- Creating and Deleting Files
- Reading and Writing Text Files
- Working with Directories in PHP
- Checking for Existence of Files
- Determining File Sizes
- Opening Files to Write, Read or Append
- Writing Data to Files
- Reading Characters
- Working Examples

WEEK 2
COMPLEX FORM PROCESSING

- Super Global Variables
- The Server Array
- A Script to Acquire User Input
- Importing User Inputs
- Accessing USER Inputs
- Combining HTML and PHP Codes

- Using Hidden Fields
- Redirecting the User
- File Upload and Scripts
- PHP Mail Functions
- Form Security Method and Process
- Working Examples

WORKING WITH REGULAR EXPRESSIONS

- The Basic Regular Expressions
- Matching Patterns
- Finding Matches
- Replacing Patterns
- Working Examples

WEEK 3
CLASSES AND OBJECTS

- Object Oriented Programming
- Defining Classes
- Objects
- Creating an Object
- Object Properties
- Object Methods
- Object Constructors and Destructors
- Class Constants
- Class Inheritance
- Abstract Classes and Methods
- Object Serialization
- Checking for Class and Method Existence
- Exceptions
- Iterators
- Summary
- Working Examples

THE ANATOMY OF A COOKIE

- Setting a Cookie with PHP
- Deleting a Cookie
- Creating Session Cookie
- Working with the Query String

- Creating Query String
- Working Examples

WEEK 4
SESSION

- What is a Session
- Starting a Session
- Working with Session Variables
- Destroying a Session
- Passing Session IDs
- Encoding and Decoding Session Variables
- Working Examples

SIMPLE JQUERY AJAX MODULE

- Posting a Form using Ajax
- Changing Contents using Ajax
- Form Validation
- Captcha Validation in Forms

LABS

Lab assignments will focus on the practice and mastery of contents covered in the lectures; and introduce critical and fundamental problem-solving techniques to the students.

Intermediate PHP/MySQL: Level 3

Nature of the Course: Theory + Practical
Total Hours per Day: 2 Hours
Course Duration: 4 Weeks

Course Summary
This level of the course builds on the foundation required to prepare trainees for a career as a PHP/MYSQL software engineer.

Completion Criteria
After fulfilling all of the following criteria, the student will be deemed to have finished the Module:
1. Has attended 90% of all classes held.
2. Has received an average grade of 80% on all assignments
3. Has received an average of 60% in assessments.
4. The tutor believes the student has grasped all of the concepts and is ready to go on to the next module.

Required Text Books
3. Paul Gibbs, "PHP Tutorials: Programming with PHP and MySQL", Paul Gibbs.
4. Kevin Tatroe and Peter MacIntyre, "Programming PHP", O'Reilly Media.

Prerequisites
- Successfully complete the entrance test with score of at least 40% (for trainees directly applying to this level).
- Successfully complete the DWIT Training – PHP/MYSQL – Level 1 course (not applicable to trainees directly applying to this level).
- Successfully complete the interview.
- Willing and eager to spend at least 10-20 hours (varying from student-to-student) per week outside of the training class to read/write codes in PHP/MYSQL (self-study and practice).

COURSE DETAILS
WEEK 1
INTRODUCTIONTO LARAVEL
- Concept of Composer
- Installing Composer
- Installing Laravel using Composer
- Configuring Laravel
- Project Structure
- Setting Up Development and Debugging Tools

ROUTING
- Basic Routing
- Named Routing
- Routing Parameters
- Handling Invalid Routes
- Route Filtering with Middleware

WEEK 2
CONTROLLERS
- Introduction
- Basic Controllers
- Restful Resource Controllers
- Controller Routing
- Controller Middleware

REQUEST
- Handling Request Information
- Request Inputs
- Form Inputs
- Old Inputs
- Cookies
- Files

WEEK 3
DATABASE
- Introduction
- Migration
- Schema Building

- Migration Structure
- Writing Migration
- Running Migration
- Seeding
- Database Configuration
- Running Raw SQL Queries
- Model
- Eloquent ORM
- Defining Model
- Retrieving Model
- Insert & Update Model
- Deleting Model
- Eloquent Relationship
- One-to-One Relationship
- One-to-Many Relationship
- Many-to-Many Relationship

VIEW

- Passing Data to View
- Sharing Data to All Views
- Blade Template Engine
- Template Inheritance
- Displaying Data
- Implement Control Structures

WEEK 4
LARAVEL FORMS & HTML COMPONENT

- Installation
- Generating Forms
- CSRF Protection
- Form Elements
- Labels
- Text, Text Area, Password & Hidden Fields
- Checkboxes and Radio Buttons
- File Input
- Number Input
- Data Input

- Drop-Down List
- Buttons
- Custom Form Macros

LABS

Lab assignments will focus on the practice and mastery of contents covered in the lectures; and introduce critical and fundamental problem-solving techniques to the students.

Learning Outcomes

- How to install and configure MySQL
- How to install and configure Apache with PHP
- How to create MySQL users and grant privileges
- How to test PHP and MySQL installations
- How to configure PHP
- Identify basic PHP syntax
- Create basic PHP scripts