Bright Star Institute

978.256.9077

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PHP Programming

Duration: 28 hours

Price: $900

Prerequisites: Basic computer skills and knowledge of HTML fundamentals equivalent to attending the **Website Development with HTML5, CSS and Bootstrap** course. Prior programming experience is helpful but not required.

Description: This hands on PHP Programming course provides the knowledge necessary to design and develop dynamic, database-driven Web pages using PHP 7. PHP is a language written for the Web, quick to learn, easy to deploy and provides substantial functionality required for e-commerce. This course introduces the PHP framework and syntax and covers in depth the most important techniques used to build dynamic Web sites. Students learn how to connect to any modern database, and perform hands on practice with a MySQL database to create database-driven HTML forms and reports.

E-commerce skills including user authentication, data validation, dynamic data updates, and shopping cart implementation are covered in detail. Course elements include implementing RESTful servers for newer more data driven sites. Students also learn how to configure PHP and the Apache Web Server.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Overview

Overview Of PHP

- Static vs. Dynamic Web Sites
- Dynamic Content from Databases
- Developing Dynamic Internet Applications
- Client-Side Scripting vs. Server-Side Scripting
- Overview of PHP Advantages and Capabilities

Basic Scripting and Looping Constructs

- PHP Scripting Fundamentals
- Print Statement
- Code Blocks
- Primitive Data Types
- Defining Constants and Variables

- Configuring `php.ini`
- PHP vs. ASP

Looping Constructs

- `while`
- `do… while`
- `for`
- `exit` and `break`

Conditional Constructs

- True and False Expressions
- `if`, `else` and `elseif`
- `switch/case` Statement
- The `?:` (Ternary) Operator

Introduction to the Windows IIS Server or Apache Web Server

- Server Configuration Files
- Configuring IIS or Apache for PHP
- WWW Sites within IIS or Apache
- Apache Virtual Hosts
- IIS Virtual Directories
- Website Properties

Modularity through Include Files

- Using Include Files
- The Require Statement
- Modularizing Code with Functions
- Defining and Using Basic Functions

PHP Operators

- Logical Operators
- Relational Operators
- Bitwise Operators
- Other Operators
- PHP7 Null Coalescing operator
- PHP7 Spaceship Operator

PHP Functions

- Introduction to Functions
- Declaring Functions
- Scope
- Passing Arguments to Functions
- Local and Global Scope
- Passing Arguments to Functions by Value and Reference
- Variable Scoping and Return Values
- Recursion
- Coercive and Strict Type Declarations for Parameters and Return Values
- Optional and Rest Parameters
- Argument Unpacking
- Generator Return Expressions
- Anonymous Functions
- Iterator functions

Working with Databases and Forms

- Configuring PHP For Database Support
- PHP's Database APIs
- PHP's SQL API
- MySQL vs. MariaDB
- Database Drivers
- Database Driver Class Wrappers
- ODBC
- Simple SQL Queries via PHP
- Tracking Visitors with Session IDs
- Populating Forms
- Retrieving Data from Forms

- Dynamic Function Calls
- Predefined PHP Functions

PHP 7 New Features

- Function Improvements
- New Operators
- Multibyte Strings
- Data Typing

Arrays in PHP

- What are Arrays?
- Usage of Arrays in PHP
- Array Indexing
- Initializing Arrays
- Operating on Arrays
- Sorting Arrays
- One-Dimensional Arrays
- Multi-Dimensional Arrays
- Associative Arrays
- Array Functions
- Forms and Arrays in Web Applications

Basic OOP in PHP

- Defining Object Oriented Programming
- Creating New Objects in PHP
- PHP Object Syntax
- Using Predefined PHP OOP Libraries

Writing OOP PHP

- Implementing New Classes
- Extending Classes
- Understanding Private, Public and Protected
- Inheriting Methods and Properties
- Overriding Methods and Properties

Working with Data Files in PHP

- Searching File Contents with Regular Expressions
- Changing and Editing File Contents
- Splitting and Joining Information Inside Files
- String Functions
- Multibyte String Functions
- Regular Expression Functions
- Reading, Writing and Deleting Files
- Handling File Permissions
- File Locking
- Reading Directory Contents
- Creating and Deleting Directories

Enabling E-Commerce

- Required Characteristics of an E-Commerce Site
- Authentication and Authorization
- Data Validation
- Building a Custom Shopping Cart
- Persisting Shopping Cart Data Over Multiple Pages
- Criteria for Evaluating Third Party Shopping Cart Solutions
- Open Source vs. Commercial Shopping Cart Solutions
- Order Processing via the Web
- Implementing Order System Security using SSL
- Using Mail Servers (SMTP and Sendmail) for Client Communication
- Configuring E-mail Output Parameters

Configuring and Using MySQL

- MySQL as a Client/Server Solution
- Introduction to MySQL Capabilities as a Powerful RDBMS
- Installing and Configuring MySQL
- Connecting to MySQL
- PHP Functions Specific to MySQL
- Executing SQL Calls
    - `SELECT`
    - `INSERT`
    - `UPDATE`
    - `DELETE`
- Fetching Results of SELECT statements
- Using PHP MyAdmin to Configure MySQL

Using Cookies with PHP

- Purpose of Cookies
- Cookie Myths
- Setting Cookies
- Retrieving Cookies
- Expiring Cookies
- Deleting Cookies
- Storing Arrays in Cookies

Miscellaneous PHP Tasks

- Error Logging
- Session Management and Maintaining State
- Web Application Architecture
- Using Environment Variables
- Changing Execution by Redirecting to Other URLs
- Embedding JavaScript within PHP
- Using the HTTP Protocols to Pass Data
- Getting IP Addresses from Visitors

Implementing RESTful Servers with PHP

- Understanding RESTful Servers
- Benefits of PHP for Implementing RESTful Servers
- Using HTTP Verbs to Access Data
- Understanding RESTful URIs
- Defining PHP Objects to Access RESTful URIs
- Effective Use of OOP Inheritance
- Implementing a RESTful Server in PHP for a Small Application

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