PHP Exam Areas

Exam questions will be created from Exam areas. The topics under an exam area is not one question, they will be used to create different questions.

Note: To answer a question, only theory is not enough, you must show code examples

Following is an example Question:

Primary question (approx. 14 min.): MVC - Controller

- Explain shortly the concepts behind MVC and then focus on controllers in PHP MVC.

To demonstrate the above you must provide a code. You can use examples from the cases in class or similar examples. You can use your notes from preparation and/or PowerPoint presentation (max. 5 slides) and/or give a live demo.

Secondary question (approx. 7 min.): HTML and PHP interaction

- How can HTML interact with/pass information to a PHP code?
- For security reasons what type of operation could be used when passing values through a form or a URL?

To demonstrate the above you must provide a code. You can use examples from the cases in class or similar examples. You can use your notes from preparation and/or PowerPoint presentation (max. 2 slides) and/or give a live demo.

Exam Area 1

Dynamic web

You should be able to:
- Give a short introduction/overview of PHP
- Explain the request and response procedure in the context of http, apache with php module and Mysql server.
- Explain the GET request when you send a GET request for a resource (page/file/image).
  - How is it handled for a static page
  - How is it handled for a dynamic page
  - How is it handled in an MVC architecture

Exam Area 2

PHP basics

You should be able to:
- explain Literals, variables, variable scope
- explain passing variables by reference
- explain static and global variables
- explain how to create a function in PHP
- explain Recursive function

Expression and Control flow

You should be able to explain the following and show the usage of
- Booleans, comparison operators
- Demonstrate the usage and differences of:
  - DO WHILE, WHILE, FOR and FOREACH loops

PHP functions

You should be able to explain and Implement:
- String manipulation in PHP e.g. selecting a part of a string, replace a string or part of a string with another string. Etc ..
- Substr
- substr_replace

Exam Area 3

Forms & data validation

Explain

- Forms
- Form elements
- Form hidden element
- Form data validation
- How the data submitted by a form is read and handled by PHP
- The difference between $_GET, $_POST, $_REQUEST super global variables
- Urlencode
- Escaping characters when sending strings/data in using form
- The http get and post methods
- parse_url
- filter_var

PHP super global variables

- $_GET
- $_POST
- $_REQUEST
- $_SERVER e.g browser detection, find IP address, current file name etc..

Exam Area 4

PHP session, cookies and Authentication

You should be able to explain

- Sessions
- Cookies
- Session and cookies Usage
- types of cookies
- security risks
- accessing and destroying cookies
- differences between PHP session and cookies
- when will you use which one

  - What is a session
  - What is a session id
  - Starting a session
  - Reading a session
  - Session timeout
  - Why would you save some session information in a cookie
  - How is it different from a cookie
  - Where the session information is saved
  - How can a session be used for authentication
  - How client and server keep track of a session

  - How can basic authentication be done with apache?

Exam Area 5

Arrays

You should be able to Explain:
- what is an Array
- multi-dimensional array
- associative array
- numerically indexed arrays
- usage of arrays e.g. in reading data from elements or database result set etc
- PHP array functions (only the ones we have used)
  - array_map
  - usort
  - sort
  - shuffle
  - explode
  - extract
  - compact
  - reset
  - end

Exam Area 6

Regular expressions

You should be able to explain:

- What Regular expressions can be used for?
- At least 5 meta characters.
- Show example of a PHP built-in regular expression function
- Write a regular expression that validates e-mail addresses with subdomains
- A regular expression e.g.
  `/^([a-zd-]+,)+[a-z]{2,9}$/`

Exam Area 7

Object Oriented Programming - Basics

You should be able to explain:

How a class is defined in PHP
- constructor
- Destructor
- Properties
- Methods
- Object instantiation
- Inheritance

Object Oriented Programming – Advanced

You should be able to Explain
- Polymorphism
- Interfaces
- Abstract classes
- Abstract Methods
- The differences between an Interface class and an Abstract Class

- Describe the difference between Include, Include_once, require and require_once

Exam Area 8

PHP Database Extentions

You should be able to explain the following for database interaction, data extraction, insertion etc.:

- PDO — PHP Data Objects

- Mysqli Procedural

- Mysqli object-oriented

Data Validation

You should be able to Explain:

- The reasons behind validation
- Which values typically needs Validation
- how to do data validation
    - e.g by using Validate filters in PHP filter_var function
    - by using Regular expression
    - which other PHP functions could be used e.g before saving the data to the database

Exam Area 9

MVC

You should be able to explain the following
- Shortly explain the concept behind MVC
  - E.g separation of concern
  - Faster development time
  - Cleaner code
  - Etc…
- How to use MVC pattern in PHP
- Then you will be asked to focus on Model, View or Controllers in PHP MVC
  - The focus/explain in detail will depend on the question you pick
- Give a short introduction/overview of Routing