**CodeIgniter**

1. What is routing in CodeIgniter?

In CodeIgniter, routing is the process of directing incoming HTTP requests to the appropriate controller and method. It allows you to customize how URLs map to your application's functionality, making URLs more user-friendly and SEO-optimized.

You define routes in the application/config/routes.php file.

2. What is CodeIgniter?

CodeIgniter is an open-source and MVC-based framework used for web application development on PHP. This framework contains libraries, an easier interface with a logical structure to access these libraries, helpers, plug-ins, and other resources as well. It is easy to use compared to other PHP frameworks.

3. Explain the difference between helper and library in CodeIgniter.

| **Helper** | **Library** |
| --- | --- |
| Helper is a collection of common functions which we can use within Models, Views as well as in Controllers. Once we include the helper file, we can get access to the functions. | Library is a class that has a set of functions that permits for creating an instance of that class by $this->load->library() function. |
| It is not written in object-oriented format. | It is written in an object-oriented format. |
| It can be called in the same manner you call PHP functions. | You must create an object of the class to call library functions by using the $this->library\_name->method(). |
| All built-in helper file names are suffixed with a word \_helper (ex: email\_helper.php). | All built-in library files do not have a specific suffix. |

4. Why CodeIgniter is called a loosely based MVC framework?

Codeigniter is called a loosely based MVC framework because it does not need to obey a strict MVC pattern during application creation.

**Laravel**

1. What are migrations in Laravel?

Migrations are used to create database schemas in Laravel. In migration files, we store which table to create, update or delete.

The up() method runs when we run `php artisan migrate` and down() method runs when we run `php artisan migrate:rollback`.

If we rollback, it only rolls back the previously run migration.

If we want to rollback all migrations, we can run 'php artisan migrate:reset

2.What is the latest Laravel version?

The latest stable version of Laravel is 11.45.1

3. What are Models?

With Laravel, each database table can have a model representation using a model file which can be used to interact with that table using Laravel Eloquent ORM.

4. Define Composer.

A composer is a tool that includes all the dependencies and libraries. It helps the user to develop a project concerning the mentioned framework. Third-party libraries can be installed easily using composer.

Composer is used to managing its dependencies, which are noted in the composer.json file and placed in the source folder.

**PHP**

1. What does PEAR stands for?

PHP Extension and Application Repository

2. difference between $message and $$message.

| **$message** | **$$message** |
| --- | --- |
| $message is a regular variable. | $$message is a reference variable. |
| It has a fixed name and stores a fixed value. | It stores data about the variable. |
| Data stored in $message is fixed. | The value of the $$message can change dynamically as the value of the variable changes. |

**React**

1. What are the 2 types of components in React?

1.Class Components

2.Functional Components

## 2. What is the React Virtual DOM?

Virtual DOM is a concept where a virtual representation of the real DOM is kept inside the memory and is synced with the actual DOM by a library such as ReactDOM only when necessary.

**NODE**

1. What is NodeJS?

[NodeJS](https://www.geeksforgeeks.org/nodejs/) is an open-source, cross-platform JavaScript runtime environment engine used for executing JavaScript code outside the browser. It is built on Google Chrome's V8 JavaScript engine. Some of the key features of NodeJS are mentioned below:

* Single-threaded
* Non-Blocking, Asynchronous I/O
* Cross-platform
* Fast Execution ([V8 Engine](https://www.geeksforgeeks.org/explain-v8-engine-in-node-js/))
* Real-Time Data Handling

2. Why is NodeJS single-threaded?

NodeJS is single-threaded because it's based on the asynchronous, non-blocking nature of [JavaScript.](https://www.geeksforgeeks.org/javascript/) This design makes it simpler to develop and maintain, and it allows NodeJS to handle many concurrent requests efficiently.

**SQL**

1.what is mysql?

MySQL is open-source RDBMS that uses SQL to manage and manipulate data. It is widely used for various applications, from small websites to large-scale systems.

2.Difference between CHAR and VARCHAR data types.

**CHAR**

* Fixed-length storage. If the string is shorter than the defined length, the remaining spaces are padded with blanks.
* Suitable for storing fixed-length data (e.g., country codes, fixed-length phone numbers).
* CHAR may be faster for small, fixed-length strings.

**VARCHAR**

* Variable-length storage. Only the exact number of characters is stored, saving space.
* Suitable for storing strings where the length varies, like names or descriptions.
* VARCHAR uses less space and is ideal for large strings of varying length.

## 3.Node.js allows you to run JavaScript on the server.

## 4.Node js is not a language or a framework

5.Differences between var, let, and const

| **var** | **let** | **const** |
| --- | --- | --- |
| The scope of a *[var](https://www.geeksforgeeks.org/javascript-var/" \t "_blank)* variable is functional or global scope. | The scope of a [*let*](https://www.geeksforgeeks.org/javascript-let/) variable is block scope. | The scope of a *[const](https://www.geeksforgeeks.org/javascript-const/" \t "_blank)* variable is block scope. |
| It can be updated and re-declared in the same scope. | It can be updated but cannot be re-declared in the same scope. | It can neither be updated or re-declared in any scope. |
| It can be declared without initialization. | It can be declared without initialization. | It cannot be declared without initialization. |
| It can be accessed without initialization as its default value is "undefined". | It cannot be accessed without initialization otherwise it will give 'referenceError'. | It cannot be accessed without initialization, as it cannot be declared without initialization. |
| These variables are hoisted. | These variables are hoisted but stay in the temporal dead zone untill the initialization. | These variables are hoisted but stays in the temporal dead zone until the initialization. |

# 6.join() function

Array join() method: This is a standard JavaScript array method available in Node.js. It concatenates all elements of an array into a single string. An optional separator can be specified, which will be placed between each element in the resulting string. If no separator is provided, a comma (,) is used by default.

Ex:const arr = ['apple', 'banana', 'orange'];  
 const fruitString = arr.join('-'); // "apple-banana-orange"  
 const defaultJoin = arr.join(); // "apple,banana,orange"

path.join() method: This method belongs to Node.js's built-in path module. It is used to join multiple path segments into a single, correctly formatted path string, using the appropriate platform-specific separator (e.g., / on Unix-like systems, `\` on Windows). It also handles redundant or unnecessary slashes.