**PHP**

1. Completed **Php Concepts:**

<https://app.pluralsight.com/library/courses/php-fundamentals/table-of-contents>

1. Laravel framework:

<https://www.tutorialspoint.com/laravel/>

3)  Drupal:

<https://www.udemy.com/getting-to-know-drupal/learn/v4/content>

Installed Drupal

**MYSQL**

**MySQL Performance tuning using indexes:**

1. Indexed improve query performance in most of the cases.
2. Indexes reduce random I/O of storage system by converting it to sequential I/O whenever possible.
3. Improve performance by avoiding sorting using templorary tables and reducing additional N/W traffic.

MySQL server is open source. It has storage engines like InnoDB, MyISAM etc.

Char V/S Varchar

Char is static i.e., fixed length of table columns

Varchar is dynamic i.e., it can adjust column and table length.

Normalization is one method to improve performance.

We can use EXPLAIN keyword to know more about query like how it is executed, what index is used, execution time etc.

IN clause can be used instead of joins wherever possible because IN is much faster than joins.

Materialization can be used when dealing with subquery optimization. Materialization converts the sql results into temporary temples for faster access.

**Types of INDEXES**

1. **Hash Index:**

Built on hash table

Increases performance for exact lookups

For each row- Hash code is generated

Very fast and effective since it resides in memory

Limitations:

Hash Index doesn’t contain original data

Not suitable for sorting, partial matching

Only supports equal to operator

There can be multiple values with same hash code makes slow performance.

1. **Adaptive Hash Index**

Automatic process and no control

These are built in memory on top of frequently used B-Tree indexs

Very fast hash lookups for improved performance.

1. **Clustered Index:** Retrieving data is faster. Rows are stored in order sequentially.

Insertion/Updating takes a lot of time.

Only 1 can be created per table.

1. **Non-Clustered Index:**

Quick insert and update.

Not ordered sequentially

Hard to retrieve data

1. **B-tree Index**

Speeds up data access

Traverse from root to leaf node with help of pointers.

Helps order by clause to increase performance.

**Delete V/S Truncate:**

Deletes based on where clause. Slow than truncate

Truncate removes all rows from table. No Where clause.

**Primary V/S Unique:**

Primary index can be Clustered index and doesn’t allow null.

Unique can be Non-clustered index and allows null.

**Migration from MS SQL Server to MySQL**

1. Start migration wizard in MYSQL workbench.
2. Check for ODBC drivers
3. Click on start migration
4. Set up parameters to connect to source data base.
5. Set up parameters to connect to destination data base.
6. Select schema to migrate
7. Select objects to migrate

**Laravel**

It is an MVC framework (Separating presentation from business logic).

Secure, lean and fast

Great documentation

Tons of utilities and helpers.

Using php package manager composer we can install Laravel.

**Templating Engine**: Allows you to dynamically create HTML code without mixing PHP.

**Blade Templating Engine:**

1. Display data: Instead of php code

Example: <p> Hello {{$name }} </p>

1. Layouts, Inheritance and modules
2. Partial views: Used on some pages

@yield(‘…’);

@extends(‘…’);

@section(‘…’);

@endsection(‘…’);

1. Control structures
2. XSS Protection: cross side scripting {!! !!}}

HTML code is escaped.

**Laravel folders:**

1. Public: It is the root folder which consists of index.php. Starts Laravel application.
2. App folder: Where you develop your application and store controllers.
3. Bootstrap folder: Responsible for starting Laravel application.
4. Config folder: Allows you to configure different parts of application.
5. Database folder: Database related info is stored here.
6. Resources: Store views. HTML pages, JS, CSS files are stored.
7. Routes: web.php to manage routes.
8. Storage: Not publicly accessible
9. Tests: Write Laravel tests, php tests.
10. Vendor: Holds all dependencies.

Artisan CLI is a command line interface.

It helps to quick creation of application components.

Alternative to manual file creation.

Utility commands

**DRUPAL**

Drupal is a free and open source Content Management System (CMS) that allows organizing, managing and publishing your content. It is built on PHP.

Features of Drupal:

1. Easy to create and manage your sites
2. Open source
3. Drupal can publish your content on social media such as Twitter, Facebook and other social mediums.
4. It designs highly flexible, creative website to the users and display more effectively to increase the visitors.

**Modules:**

Modules are like plugin for your site.  It allows you to add different functions to your site such as polls, contact forms and search fields.  Some of the modules recommended are

* Views
* Token
* Ctools
* Quicktabs
* Pathauto

**Hooks**: It is a PHP function. Allows modules to alter and extend behaviour of drupal core or another module without modifying existing code.

Types of Hooks:

1. Hooks that react to events
2. Hooks that answer questions
3. Hooks that alter existing data

Ex: hook\_views\_data\_alter() //Alters existing data structure

Hook\_toolbar() //Add items to tool bar. Returns array.

**Plugins:** Individual unit of functionality. Plugin type is definition of what functionality is provided.

**Module:** Add functionality to your drupal website.

**Themes:** Design that makes drupal websites look different

**Taxonomy:** It is a way of classifying website content. It is made up of several terms like term, vocabulary etc.

* **Term:** It is used to manage or describe the content.
* **Vocabulary:** It is set of terms.
* **Name**
* Description etc

**Weight:** It is used to describe the priority or order in which function is processed. Nodes with lower weight will float to the top of lists.

**Drupal Cron**: To execute commands or scripts automatically at specified time and date intervals, you must use Drupal cron.