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| **Syllabus for Diploma in “IT, Networking and Cloud”** | | |
| **Module 3 - Backend Web Technologies & Frameworks (320 hrs)** | | |
| **Learning  outcome** | **Professional Skills (Trade Practical)** | **Professional Knowledge (Trade Theory)** |
| **Able to understand Mongo DB** | **DBMS with MongoDB (80 Hrs.)**   * Install using XAMPP software package for MySQL, PHP and other utilities * Connect to MySQL database system and create new database * Create tables in new database and enter sample data * Import data into database table from CSV file * Read data from database table, all data, filtered data based on SQL queries * Update single record, and multiple records based on criteria * Delete selected records from table * Work with SQL stored procedures * Perform transaction in database tables using commit and rollback operations * Demonstrate use of transaction control in relational databases * Perform user management activities in MySQL database, create, modify user, set privileges * Install of MongoDB in the system * Create data with the following Data types – String, Integer, Boolean, double, min/max keys, arrays, timestamp, object, Null, symbol, date, object ID, Binary data, Code, Regular Expression * Insert Document in database * Update document in database * Delete document in database * Project document in document * Create a MongoDB query to display all the documents in the collection data (Trainees data) Create a MongoDB query to display the fields id, trainee name, lab name, Certificate No., course title, course starting date, course ending date for all the documents in the collection trainees data. * Create a MongoDB query to display the fields id, trainee name, lab name, Certificate No., course name, course starting date, course ending date for all the documents in the collection trainees data, but excluding lab name * Create a MongoDB query to display all the trainees who attended course on PHP * Create a MongoDB query to display the 1st batch trainees of PHP * Create a MongoDB query to display the 2nd batch trainees of PHP * Create a MongoDB query to find the course where maximum trainees attended * Create a MongoDB query to find lab wise details of trainees * Create a MongoDB query with course wise details of trainees * Create MongoDB cluster in MongoDB Atlas cloud service * Connect and use MongoDB Atlas on local system * Get familiar with big data and its tools | **Basic Concepts of MySQL and MongoDB (40**  **Hrs.)**   * Understanding MySQL database * MySQL syntax and semantics * MySQL DDL * MySQL DML * MySQL Transaction Control * MySQL User Management * MySQL Security aspects * MySQL Query execution * MySQL query optimization * MySQL Complex queries * Unstructured databases * Structured vs unstructured data * MongoDB fundamentals * MongoDB documents, databases, reords * MongoDB Atlas cluster * MongoDB Atlas cluster connection and access remotely * MongoDB Queries, filters, criteria * Managing multimedia data in databases * Fundamentals of Big data * Managing Big Data * Big data tools and technologies * Big data in cloud * Big data analytics |
| **Able to learn concept of PHP** | **PHP (Hyper Text pre processor) (50 hrs.) Handling Html Form With PHP**   * Capturing Form Data Dealing with Multi-value filed Generating File uploaded form * Redirecting a form after submission * Write a PHP script to get the PHP version and configuration information * Write a PHP script to display the strings * Create a simple HTML form and accept the user name and display the name through PHP echo statement * Write a e PHP script to display string, values within a table * Write a PHP script to count lines in a file * Write a PHP function to test whether a number is greater than 30, 20 or 10 using ternary operator * Write a script which will display the string * Write a PHP script which will display the colors * Write a PHP script to sorting * Write a PHP script to calculate and display average temperature, five lowest and highest temperatures in given data * Write a program to calculate and print the factorial of a number using a for loop * Write a PHP script using nested for loop * Write a PHP program to generate and display the first n lines of a Floyd * Write a function to calculate the factorial of a number * Write a functionto check a number is prime or not * Write a function to reverse a string * Write a PHP function that checks whether a passed string is a palindrome or not? * Write a simple PHP class which displays the given string * Write a PHP Calculator class which will accept two values as arguments, then add them, subtract them, multiply them together, or divide them on request * Write a PHP script to : - a) transform a string all uppercase letters. b) transform a string all lowercase letters. c) make a string's first character uppercase. d) make a string's first character of all the words uppercase Create a form in PHP and apply validations. * Create a date and time from a number of parameters in mktime() * Create a date and time from the strtotime () function * Create more dates/times from strtotime * Output the dates for the next six Saturdays * Create and retrieve a cookie * Modify a cookie value (2Hrs) * Delete a cookie * Check if cookies are enabled * Select data with MySQLi (Object-oriented) * Select data with MySQLi (Object-oriented) and put result in an HTML table * Select data with MySQLi (Procedural) * Select data with PDO (+Prepared statements) | **PHP(Hyper Text pre processor) (30 Hrs.)**   * Decisions and loop - Making Decisions, Doing Repetitive task with looping, Mixing Decisions and looping with Html * Function - What is a function ,Define a function, Call by value and Call by reference, Recursive function * String - Creating and accessing String Searching & Replacing String Formatting String ,String Related Library function. * Array - Anatomy of an Array ,Creating index based and Associative array, Accessing array Element, Looping with Index based array, Looping with associative array using each() and for each (), Some useful Library function * Working with file and Directories - Understanding file& directory Opening and closing a file Coping, renaming and deleting a file, Working with directories Building a text editor File Uploading & Downloading, Using query string(URL rewriting), Using Hidden field ,Using cookies, Using session . * String matching with regular expression What is regular expression, Pattern matching in PHP, Replacing text, Splitting a string with a Regular Expression * Generating Images with PHP - Basics of computer Graphics Creating Image Manipulating Image Using text in Image * PHP Forms, files and cookies * Form validations * Introduction to PHP Script * Looping statement in PHP Script * Working with Predefined functions * Maintaining Validations in PHP Script * Working with Different types of Mouse Events. * Object Oriented Programming and PHP 5 * Debugging PHP Code * PHP Session Handling Features * Handling Date & Time in PHP |
| **Concept of Laravel** | **Skills on Laravel Framework (80 hr)**   * Installation of the Laravel in the System * First Program by edit the View as Hello World * Create a Web application of minimum 4 blades demonstrating the blade template in laravel * Create a web Application which demonstrate routing through controller * Create a Form which inserts the data in the database * Demonstrate all the CRUD operation using (DB) from controllers * Create a Model and Demonstrate all CRUD operations * Creating a complete end-to –end solution which demonstrate session and database connectivity * Demostrate csv file upload in laravel , extract its data and insert into database * Installation and usage of jet brains Live wire and its component * Create a login and register Forms using Live wire | **Laravel Framework (40 Hr)**   * Introduction to MVC Architecture * What is framework and its Benefits * Laravel and its architecture * Blade templating engine in laravel * Views in laravel with complete conditional and looping construct. * Controllers and its usage. * Complete database connectivity with DB * Complete Database connectivity with Eloquent * Model and its working. * Migrations in Laravel * Database seed in laravel * Handling Session in Controllers and Views * .env File and its usage * Introduction to Jet brains(Live Wire) |