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| **Syllabus for Diploma in “IT, Networking and Cloud”** | | | |
| **Core Module 4: Python Programming and Web Development using Django: 320 Hrs** | | | |
| **HOUR No.** | **Learning outcome Reference** | **Professional Skills (Trade Practical)** | **Professional Knowledge (Trade Theory)** |
|  | **(With indicative Hours)** | |
|  | Able to work in Python programming | **Skills based on core python programming (80 Hrs)**   * Install Python software in the system and set paths * Print a string using print statement * Print given string using indentation (space between characters) * Define Integer Variables, floating variables and string variables and find its type and memory addresses * Write a program to add numbers and strings to the correct list using the append list method * Write a python program to add, subtract, multiply and divide given two numbers by using arithmetic operators * Write a python program multiplying strings to form string with repeating sequence * Write a Python program to get the largest number from a list by using max and mini commands * Write a Python program to find whether a given number (accept from the user) is even or odd by using if else command * Write a Python program to create a histogram from a given list of integers by using for while loop * Write a Python program to compute the greatest common divisor (GCD) of two positive integers by using loops * Write a Python program to get the least common multiple (LCM) of two positive integers using if else and while commands * Write a Python program to sort (ascending and descending) a dictionary by value * Write a Python program to create a tuple and perform all operations * Write a Python program to create a tuple with different data types * Write a Python program to create a dictionary and perform functional operations * Write a Python program to find maximum and the minimum value in a set. * Write program to copy contents of text file to another new file * Write program to copy content of image/video file to another * Write program to demonstrate exception handling while creating file, reading file, writing file and deleting a file * Write a program to demonstrate file handling in connecting to database and performing operations * Create student database in mysql and connect using python * Perform CRUD operations on mysql database using python * Perform CRUD operations on MongoDB database using python * Create a student class with related data elements and methods. Write functionalities for basic operations of student in a college * With student class already created, perform database crud operations including validation of data while writing to DB and when reading from DB * Create a simple python Flask app with at least 3 basic routes | **Python Programming: 60 Hrs**   * Python, History, Features, Setting up path * Basic Syntax, Variable and Data Types Operators * Conditional Statements, Looping, Control Statements * String Manipulation, Lists, Tuple, dictionary, sets * Functions and Methods, modules * File IO, Exception handling * Object Oriented programming using Python * Python for Web: Flaks and django * Introduction t |
|  | Able to create django application | **Skills related to working with django framework (120 hr)**   * Install django framework libraries in python and test for installation * Setup first django application * Creating django application with MVT architecture * Create django application that handles file uploading * Create django application that reads data from CSV and display on page * Create django application that reads data from JSON and display on page * Creating django application which implement CRUD operations over database * Create django application validates user credentials on login page * Create admin panel using django, using AJAX * Perform crud operations in django app using AJAX at single page * Create django application which sends email to any recipient | **Python for Web- django: 60 hrs**   * Web Framework, Django Introduction, Django Architecture * Django MVC, MVT (Model View Template) * Views and URL mapping, HttpRequest and HttpResponse, GET and POST Method * Template, Render, Views, Context * Template Editing * SQL operation in django * Handling sessions, cookies and working with JSON and AJAX |