

**REVISITING PYTHON\***

- Revisiting Python
- List and dictionary comprehension
- Programming assignment

**INTRODUCTION TO INTERNET OF THINGS (IoT)**

- What is Internet?
- What is IoT
- The Technology "Internet of Things"
- Usefulness of IoT
- Professional Benefits
- Application of IoT
- New and Upcoming Technologies.

**GETTING STARTED WITH RASPBERRY PI**

- Introduction to RaspberryPi
- Introduction to NOOBS/Raspbian
- Features of Raspberry Pi 3 B+
- User manual and Softwares distribution
- Installing & Starting Raspberry Pi

**THE "THINGS" EXPLANATION**

- Embedded systems
- Input and Output devices
- Analog and Digital sensors.
- Actuators.
- Motors, IR Sensors
- Temperature sensor
- LDR, Relay
- Water level indicator
- LCD, 7-Segment,DHT

**PRACTICAL ON "THINGS" WITH RPi**

- Blinking Led using Raspberry pi
- Blinking and glowing multiple patterns of LEDs
- Driving motors and controlling the directions of motor
- Controlling the speed and directions
- LCD display, printing names and values on display
- IR sensor, working and interfacing with Raspberry Pi
- Ultrasonic sensor, measuring distance using ultrasonic sensor
- Variable Distance Calculation AND Displaying it on LCD
- Humidity and temperature sensor

**GETTING STARTED WITH PI CAMERA**

- Interfacing Camera with Raspberrypi
- Basic Commands to Click Photos using Terminal
- Remote Distance Video Streaming

**INTRODUCTION TO CLOUD COMPUTING**

- What is AWS?
- Services and Roles
- Creating Account in AWS
- Creating thing
- Connecting Pi to AWS
- Setting up path and Environment
- Sending Information on AWS

**INTRODUCTION WEB DEVELOPMENT**

- Languages For Development
- Introduction to HTML
- Working on HTML Programming
- Creating Basic Templates using HTML

**REST API IN PHP**

- Data types, Loops, conditions
- Working on PHP Programming
- Introduction to WAMP/XAMPP
- Installation and software distribution
- Creating Basic Website using PHP and HTML

**REST API IN DJANGO FRAMEWORK**

- History
- Django-Design and philosophies
- Advantages of Django
- Installation and Database setup
- Creating Webserver

**INTRODUCTION TO WEB SCRAPING:**

- Scraping Webpages
- Beautifulsoup package

**INTRODUCTION TO ML**

- What is ML? And Why ML?
- Introduction to Supervised ML
- Introduction to Unsupervised ML

**PROJECTS:**

1. Real time projects

**NOTE: PREREQUISITES:**

- Python Programming

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