



Raspberry PI

A uniquely designed two days session on world's smallest computer processed by ARM Processor inside it. The Technospecies Global Solution curriculum starts from the basic development in students with LINUX OS introduction as Raspberry PI runs over it and moves to PYTHON Language. Over span of two days it's a fun with learning curriculum & of course ITS NEW ITS UNIQUE!!

Course Content

SESSION 1:

1. Introduction to RASPBERRY PI

- Introduction to Open Source Hardware
- Brief Introduction to Hardware
- Parts & Usability

2. Raspberry PI: Architecture & Hardware Specifications

- Introduction to ARM 11 microprocessor
- Raspberry PI Design & Working
- Knowing the GPIO of PI

3. PYTHON: Programming Language

- Introduction to PYTHON Script
- Using Python Script & IDLE modes
- Python Programming Project Development

SESSION 2:

4. Raspberry PI: Getting Started!!

- Setting UP the Board
- Booting the OS
- Displaying on Monitor working as CPU
- Getting familiar to GUI & Terminal Commands



5. Brief Introduction to LINUX (DEBIAN on Raspberry PI)

- Getting familiar to LINUX GUI
- Getting started with Terminal window & Commands
- Developing LINUX Shell Scripting

SESSION 3:

6. Raspberry PI: Stepping UP

- Introduction to GPIO
- Enabling GPIO
- Coding: Python Programming over Raspberry
- Starting Up: Hello World!

Developing LED Projects using Python Scripting

7. Interfacing Sensor to PI

- What are sensors!
- Interfacing Ultrasonic Sensor
- Interfacing PIR Sensor

8. PWM

- Generating PWM using Python & GPIO

SESSION 4:

7. MOTORS

- What are Motors!
- H-Bridge & L293D IC
- Interfacing Motors with Raspberry PI GPIO
- Running Motors using *PYTHON Scripting*



PROJECTS:

- LED Glow & Toggle
- Generating LED Patterns using Python Programming Language
- Shell Scripting in LINUX
- Distance Calculator (using HC SR04)
- Human Detection using PIR Sensor
- Generating PWM in Raspberry PI
- Running Motors
- Developing a PI-BOT

KIT CONTENT:

- Raspberry Pi B+ Model
- HDMI to VGA Cable
- USB Cable (for Power Supply)
- LED Packet
- BreadBoard
- PIR Sensor
- ULTRASONIC Sensor
- Motor

Requirements from College:

- Monitor with VGA Port
- Keyboard & Mouse with USB Connector
- Projector with Screen
- White Board with Marker
- MIC & Sound System