

## **Raspberry Pi**

This workshop will introduce you to the unexplored potential of the Raspberry Pi-the hardware, software and its applications. The Workshop is designed to cater to all kinds – be it a novice or a tech savvy hobbyist or an expert developer extraordinaire.

During the course of the workshop interesting open problems are floated and the participants are encouraged to think out-of-box and come up with innovative solutions. Post workshop, each participant will have a sound exposure to Python programming and interfacing of Raspberry Pi. A perfect recipe for innovation!

### **Course Content:**

The workshop outlines the following concepts:

- Introduction to Raspberry Pi
- Architecture and Hardware specifications
- Brief introduction to Linux (embedded)
- Introduction to ARM11 microcontroller
- Python – Programming Language
- Sensors
- GPIOs

Hands-on session will include:

- Setting up Raspberry PI
- Flashing the loading the SD card with the OS
- Booting the OS
- Intro of items on the desktop (Debian Linux)
- Intro and hands-on coding of Python (comparison with C programming over Linux machines)
- Enabling GPIO pins
- LED interfacing using the GPIO
- Physical Email notifier

- Using HDMI port, USB ports(mouse/keyboard), Audio jack
- Button input and LDR interfacing
- Buzzer, PIR and various sensor interfacing

Pre-Requisite:

The Workshop content consists of an approximately equal mixture of lecture and hands-on lab. This will be a two days workshop.

**Recommendation:** It is strongly recommended to bring your own LAPTOP during the training on which you can install and run programs if you would like to do the optional, hands-on experiments/exercises after the trainings/ workshops.

Fees: Rs. 2000/- per head.

Kit to be given in a group of 4-5 members.

