TechWeekends presents 4 day workshops to inspire and educate school and college students with Electronics, Robotics and Computer Programming

What we hope students will do during the Summer Camp:

Learn and spend most of their time making, tinkering and learning about circuits and programming while having fun in the process.

College Tracks:

1. Robotics
2. Raspberry Pi
3. Computer Programming using Python
4. Web Development

Robotics:

What will the students learn?

Arduino-open source hardware platform

Arduino Programming and Interfacing

Build an obstacle avoider autonomous robot

Build a voice controlled robot

Detailed Syllabus:

Introduction to Robotics:

-What is a Robot?

-Types and Applications of Robotics

Microcontrollers used in Robotics:

-AVR Microcontroller

-ATmega328

Understanding Arduino Programming

I/O Interfacing:

-LED (glowing and blinking)

-Buzzer

-Switch

Motor Interfacing:

-Motor driver IC

-DC Motor Control

-Servo Motor Control

Sensor Interfacing:

-Types of Sensors

-LDR

-Infrared Proximity Sensor

Robot Kit Assembly

Making an obstacle avoider robot

Bluetooth Interfacing

Making a voice controlled robot

Duration: 4 days (daily 2 hours)

Cost: Rs 1500 per person (kit costs Rs. 3500 for a group of 4)

Takeaways:

DIY Kit in a team of 4

CD containing open source software's, manuals and reference material

Certificate

Raspberry Pi:

What will the students learn?

Programming Raspberry Pi- credit card size computer

Python programming

Linux command line

Detailed Syllabus:

Porting Linux Kernel and booting the Raspberry Pi

-Setting up the Raspberry Pi (HDMI port, Keyboard-mouse connection, 3.5mm audio jack, micro usb power cable)

-Preparing the SD card for Raspberry Pi

-Booting in Noobs/Raspbian Linux

Configuring the Raspberry Pi:

-Logging into Raspberry Pi

Linux command line:

-Learning Linux command line operations

Python programming:

-Introduction to Python

-Programming GPIO pins through command line

Interfacing:

-LED (glowing and blinking)

-Buzzer

-Switch

Sensor Interfacing:

-LDR

‘Internet of Things’ project using Raspberry Pi

Duration: 4 days (daily 2 hours)

Cost: Rs 1500 per person (kit costs Rs. 3500 for a group of 4)

Takeaways:

DIY Kit in a team of 4

CD containing open source software’s, manuals and reference material

Certificate

Computer Programming using Python:

Introduction to Programming in Python

Setting up

Strings and Console Output

Conditionals and Control Flow

Functions

Loops

Classes

File Input/Output

Mini projects in Python while learning the above concepts

One final project using Python

Introduction to Version Control System: Git

Duration: 4 days (daily 2 hours)

Cost: Rs 1000 per person

Takeaways:

CD containing open source software's, manuals and reference material

Certificate

Web Development:

Basics of HTML

HTML Tags

First HTML Page

CSS Styling

Internal and External Styling

jQuery Basics

Bootstrap framework

Making a responsive website while learning about all these concepts

Introduction to Version Control System: Git

Duration: 4 days (daily 2 hours)

Cost: Rs 1000 per person

Takeaways:

CD containing open source software's, manuals and reference material

Certificate