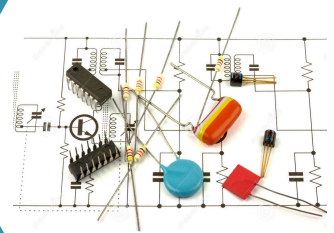**MDB ELECTROSOFT**

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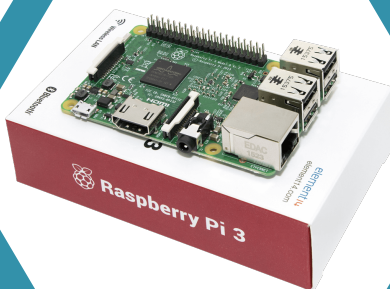
Basics of Electronics & PCB Design

ARDUINO

Project Devel. Using Arduino

INTERNET OF THINGS AGE

Project Devel. Using IOT

Raspberry Pi 3

Project Devel. Using Raspberry PI

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HANDS - ON Arduino PROJECTS

Sr. No.	What we Learn in Arduino.
1.	Introduction to Arduino board
2.	Installation of Arduino Software
3.	Pin mapping of Arduino with ATMEGA 328/ 8
4.	Software Basics
5	Intefacing of LED with board. Writing a program to on and off the LED with interval of 1 second
6	Embedded C programing basics
7	If loop, For loop, While loop, Switch-case statement syntax
8.	Interfacing of 7 segment displpay and its programming.
9.	Interfacing of Buzzer to genrate different audio tones.
10.	Intefacing of switch and LED to Board
11.	Interfacing of 16x2 LCD display and its Programming. Writing program for different display patterns on LCD.
12.	Displaying Names of student on LCD
13.	Scrolling names on lcd
14.	Changing name pattern on LCD by switch
15.	ADC Programming Writing a program to display analog voltage on LCD.
16.	Design of temperature indicatior and controlling System.
17.	Water level indicator
18.	Home appliance control using remot
19	Interfacing of Utrasonic sensor
20.	Serial Communication using Arduino
21.	Interfacing of Bluetooth Module
22.	Interfacing of Gas sensor
23.	Interfacing of Hall effect sensor

HANDS - ON Raspberry Pi PROJECTS

& Basic Electronics,PCB Design & Mini Projects

Sr. No.	What we Learn in Raspberry Pi.
1	Introduction to Raspberry Pi
2.	Istallation of Raspberry Pi and Operation system Raspbian
3.	Introduction to Linux operating system and some basic functions
4.	Introduction to Python and Some basic programs
5.	GPIO structure of Raspberry Pi
6.	Interfasing of LED and programming it for blinking using python language
7.	Interfasing of switch programing it for different purposes Like Switching LED, Taking Photograph, Incriment Display etc
8	Interfacing of 7 segment display and its programing
9	Design of counter to count the no. of events
10	Interfacing of Temperature and Humidity
11	Interfacing of Ultrasonic Sensor to measure Distance.
12.	Interfacing of camera with Raspberry Pi and its programming a) Programming Raspberry Pi to take snap after click b) Programming Raspberry Pi to take Salfy
13.	Other things that can be done by Raspberry Pi a) Accessing internet b)Accessing Pen Drive c) Discussion about General things that can be done by Raspberry Pi

Introduction to Basic Components
of Electronics & their Practical Implementation

PCB Design Using CAD tool (PCB Design Software)

    a) Types of PCB b) PCB Design Rules c) Introduction to PCB Design Software e) Practice of the
      software by designing of the PCB for various circuits d) How to print Soft design on actual PCB
    e) Etching of PCB f) Drilling of PCB

a) Design and Practical Implementation of various Projects using IC555.

b) Mini Projects

    a) Automatic Street light   b)Running LED
    c) Counter Design Using Seven Segment Display   d) Tester for Remote control
    e) Water indicator Alarm

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HANDS - ON Internet of Things PROJECTS

Sr. No.	What we Learn in IOT
1	Introduction to IOT
2	IOT Architecture
3	Introduction to Raspberry Pi
4.	Istallation of Raspberry Pi and Operation system Raspbian
5.	Introduction to Linux operating system and some basic functions
6.	Introduction to Python and Some basic programs. i) History of Python ii) Interactive Mode Programming iii)Script Mode Programming iv) Lines and Indentation v) Assigning Values to Variables vi) Standard Data Types vii) Python Strings viii)Python Basic Operators ix) Python Decision Making x)Python Loop Developing python program to understand above concepts.
7. 8. 9. 10.	GPIO structure of Raspberry Pi Interfacing of LED and programming it for blinking using python language Interfacing of switch and programing it for different purposes Like Switching LED, Taking Photograph, Incriment Display etc PWM feature of Raspberry Pi 3
11	Linking PWM feature with switch
12	Development of program in python to read data from URL
13	Introduction to HTML
14	Write HTML code to develop button and to send data to URL
15	**Developing Complete application to control home appliances through IOT**
16	Introduction to Thingspeak
17	Opening Account on Thingspeak
18	Creating Channel on Thingspeak
19	Programming Raspberry Pi to send data on Thingspeak
20	Demonstration of interfacing of Web Cam.
21	Introduction to Image Processing using Raspberry PI
22	Q & A Session and Security issues related with IOT.
23	Discussion of Research area in the field of IOT

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