

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE-RAIGAD
Department of Computer Engineering**

B.Tech. Second Year A.Y.-2022-2023

Semester: - VI (ODD) Subject: - Internet of Things Laboratory

Subject Code: - BTCOE604

Subject Co-ordinator: - Mr. Rahul R. Rathod

Laboratory Name: - B4

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1. Study of Raspberry-Pi, Beagle board, Arduino and other micro controller.
 2. Study of different operating systems for Raspberry-Pi. Understanding the process of OS installation on Raspberry-Pi.
 3. Study of Connectivity and configuration of Raspberry-Pi circuit with basic peripherals, LEDs. Understanding GPIO and its use in program.
 4. Understanding the connectivity of Raspberry-Pi circuit with temperature sensor. Write an application to read the environment temperature. If temperature crosses a threshold value, the application indicated user using LEDss.
 5. Understanding the connectivity of Raspberry-Pi circuit with IR sensor. Write an application to detect obstacle and notify user using LEDs.
 6. Understanding and connectivity of Raspberry-Pi with camera. Write an application to capture and store the image.
 7. Study of different CPU frequency governors. Write an application to change CPU frequency of Raspberry-Pi.
 8. Write an application using Raspberry-Pi to control the operation of a hardware simulated traffic signal.
 9. Write an application using Raspberry-Pi to control the operation of a hardware simulated lift elevator.
 10. Write a server application to be deployed on Raspberry-Pi. Write client applications to get services from the server application.
 11. Create a small dashboard application to be deployed on cloud. Different publisher devices can publish their information and interested application can subscribe.
 12. Develop a Real time application like smart home with following requirements: When user enters into house the required appliances like fan, light should be switched ON. Appliances should also get controlled remotely by a suitable web interface. The objective of this application is student should construct complete Smart application in group.