Rajagiri School of Engineering and Technology, Rajagiri Valley, Kakkanad

Department of Computer Science & Business Systems

101009/CU702E Introduction to IoT Lab Cycle

Lab 1: Setting up the Arduino Development Environment and Reading Analog Sensor Data

1. Set up the Arduino IDE.

2. Connect analog sensors to an Arduino board.

3. Read and display sensor data.

Lab 2: Digital Input and Output Using Arduino

1. Understand digital input and output pins.
2. Control LEDs and read button states.

Lab 3: Integrating Arduino with Raspberry Pi

1. Set up communication between Arduino and Raspberry Pi. Send sensor data from
2. Arduino to Raspberry Pi.

Lab 4: Setting Up Python on Raspberry Pi and Reading Data from Arduino

1. Set up the Python environment on Raspberry Pi.
2. Use Python to interact with Arduino and process data.

Lab 5: Capturing Images and Videos with Raspberry Pi Camera Module

1. Connect and configure the Raspberry Pi Camera module.

2. Capture still images and videos using Python.

Lab 6: Setting Up TCP/IP Socket Communication

1. Set up a TCP/IP socket server on a PC.

2. Send and receive messages between Raspberry Pi and PC.

Lab 7: MQTT Communication between Raspberry Pi and PC

1. Set up an MQTT broker on the PC.

2. Use MQTT to send and receive messages between Raspberry Pi and PC.

Lab 8: LED Control via MQTT

1. Control LED lights on an Arduino from a Raspberry Pi via MQTT messages.

Lab 9: Cloud Integration and Image Upload

1. Set up a cloud account and an HTTP server.

2. Upload images captured by the Raspberry Pi camera to the cloud.

Lab 10: Developing a Mobile Application for Image Viewing

1. Create a mobile application to view images stored on the cloud.

Faculties

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