

Experiment-1: Study and Configuration of Arduino Kit (theory) Experiment-2:

2a - Basic Programming using Arduino - LED and Switch Interface

- (A) Blink the onboard LED in Uno - <https://wokwi.com/projects/448957484081397761>
- (B) Blink the user LED in Uno using the port D8 – **previous link but use '8' instead of '13'**
- (C) Switch ON/OFF a LED using a digital Switch-button using External Pullup variable - <https://wokwi.com/projects/448957799955515393>
- (D) Switch ON/OFF a LED using a digital Switch-button using External Pulldown variable – **previous link, only change in the “if (button == LOW)”**.
- (E) Switch/Keypad Interface - <https://wokwi.com/projects/448957344726677505>

2b - Basic Programming using Arduino - Analog & Digital Sensor Interface

- (A) Temperature Sensor Analog Interface - <https://wokwi.com/projects/449019538043227137>
- (B) LDR Sensor Digital Interface - <https://wokwi.com/projects/448958113703120897>

2c - Basic Programming using Arduino - Serial Communication (LEARN!) Task

#1 : Displaying a message on the Serial Monitor

<https://wokwi.com/projects/449041224881690625> Task #2 :

Displaying a stored variable value on the Serial Monitor

<https://wokwi.com/projects/449041310658363393> Task #3:

Displaying state of a digital input pin 9

<https://wokwi.com/projects/449041544794923009>

Task #4: Interact with Arduino by saying your name through Serial monitor

<https://wokwi.com/projects/448940588750861313>

2d - Basic Programming using Arduino - Local display of sensor data using LCD -

<https://wokwi.com/projects/449018861710626817>

2e – Basic Programming using Arduino - Display of Sensor values in Mobile handset using Bluetooth

<https://wokwi.com/projects/443152203556790273>

Experiment-3: Study of ESP8266 12E Node MCU (theory) Experiment-

4:

4a - Basic Programming using NodeMCU - Remote control of Electrical appliances using Mobile handset and Wi-Fi : <https://wokwi.com/projects/445349709617643521>

4b - Basic Programming using NodeMCU - Local Web server using NodeMCU and displaying Sensor values. : <https://wokwi.com/projects/445352284694437889>

Experiment-5: Study and Configuration of Raspberry PI (theory)

Lab 5

5a) <https://wokwi.com/projects/448937350943877121>

5b) <https://wokwi.com/projects/448938907659983873>

5c) <https://wokwi.com/projects/448940035497988097>

5d) <https://wokwi.com/projects/448948659466175489>

5e) <https://wokwi.com/projects/448950018264567809>

5f) <https://wokwi.com/projects/448952151314827265>

Experiment-6: Design and development of a Temperature Detection System using LM35 Temperature sensor - <https://wokwi.com/projects/449019247187106817>

Experiment-7: Design and development of a Gas Detection System using MQ5 sensor(theory)

<https://wokwi.com/projects/445355623314982913>

Experiment-8: Design and development of a Moisture Detection System using Soil Moisture Sensor - <https://wokwi.com/projects/449055890587182081>

Experiment-9: Design and development of an Intrusion Detection System using PIR sensor.

<https://wokwi.com/projects/448937504801457153>

Experiment-10: Design and development of a Heartbeat Monitoring system using Heart beat sensor - <https://wokwi.com/projects/449030777214412801>