**BLINK WITHOUT DELAY EXP 1**

const int ledPin1 = 2;//arduino pin 2 const int ledPin2= 3;//arduino pin 3 const int ledPin3 = 4;//arduino pin 4

int ledState = LOW; void setup() {

pinMode(ledPin1, OUTPUT); pinMode(ledPin2, OUTPUT); pinMode(ledPin3, OUTPUT);

}

void loop() { digitalWrite(ledPin1, HIGH); delay(1000); digitalWrite(ledPin2, HIGH); delay(1000); digitalWrite(ledPin3, HIGH); delay(1000);

}

**BUTTON EXP 2**

const int buttonPin = 2; const int ledPin = 13; int buttonState = 0; void setup() {

pinMode(ledPin, OUTPUT); pinMode(buttonPin, INPUT);

}

void loop() {

buttonState = digitalRead(buttonPin); if (buttonState == HIGH) { digitalWrite(ledPin, HIGH);

} else {

digitalWrite(ledPin, LOW);

}

}

DTH TEMPERATURE EXP 3

#include <DHT11.h> DHT11 dht11(2);

void setup()

{

Serial.begin(9600);

}

void loop()

{

int humidity = dht11.readHumidity();

if (humidity != DHT11::ERROR\_CHECKSUM && humidity != DHT11::ERROR\_TIMEOUT)

{

Serial.print("Humidity: "); Serial.print(humidity); Serial.println(" %");

}

else

{

Serial.println(DHT11::getErrorString(humidity));

}

delay(1000);

}

**RELAY EXP 4**

#define RELAY1 7 void setup() {

pinMode(RELAY1, OUTPUT);

Serial.begin(9600);

}

void loop() { digitalWrite(RELAY1, HIGH); Serial.println("RELAY1"); delay(2000); digitalWrite(RELAY1, LOW); Serial.println("RELAY1"); delay(2000);

}

**POTENTIOMETER EXP 5**

**void setup() {**

**Serial.begin(9600);**

**}**

**void loop() {**

**int sensorValue = analogRead(A0);**

**Serial.println(sensorValue); delay(1);**

**}**

**EXP 6.A**

**import RPi.GPIO as GPIO import time**

**pin=18 GPIO.setmode(GPIO.BOARD)**

**GPIO.setup(pin, GPIO.OUT) GPIO.output(pin, GPIO.HIGH) time.sleep(1) GPIO.output(pin, GPIO.LOW) time.sleep(1)**

**GPIO.cleanup()**

**EXP 6.B**

import picamera

camera = picamera.PiCamera() camera.capture(‘image.jpg’)

**EXP 7 BMP280**

**#include <Wire.h> #include "SPI.h"**

**#include <Adafruit\_Sensor.h> #include "Adafruit\_BMP280.h" Adafruit\_BMP280 bmp;**

**/\*//For SPI connection! #deﬁne BMP\_SCK 13**

**#deﬁne BMP\_MISO 12**

**#deﬁne BMP\_MOSI 11 #deﬁne BMP\_CS 10 \*/ ﬂoat pressure;**

**ﬂoat temperature; int altimeter;**

**void setup() { bmp.begin(); Serial.begin(9600);**

**Serial.println("Adafruit BMP280 test:");**

**}**

**void loop() {**

**pressure = bmp.readPressure(); Serial.print(F("Pressure: ")); Serial.print(pressure); Serial.print(" Pa");**

**Serial.print("\t"); delay(5000);**

**}**

**EXP 8 BLUETOOTH SERIAL**

**#include "BluetoothSerial.h"**

**BluetoothSerial SerialBT; void setup(){ SerialBT.begin("ESP32");**

**}**

**void loop(){ SerialBT.println("HELLO WORLD"); delay(1000);**

**}**

**INTERFACING MPU6050 WITH ARDUINO EXP 9**

#include <Adafruit\_MPU6050.h> #include <Adafruit\_Sensor.h> #include <Wire.h> Adafruit\_MPU6050 mpu;

void setup(void) {

Serial.begin(115200); if (!mpu.begin()) {

Serial.println("Failed to find MPU6050 chip"); while (1) {

delay(10);

}

}

Serial.println("MPU6050 Found!"); mpu.setAccelerometerRange(MPU6050\_RANGE\_8\_G); mpu.setGyroRange(MPU6050\_RANGE\_500\_DEG); mpu.setFilterBandwidth(MPU6050\_BAND\_21\_HZ); delay(100);

}

void loop() {

sensors\_event\_t a, g, temp; mpu.getEvent(&a, &g, &temp); Serial.print("Acceleration X: "); Serial.print(a.acceleration.x); Serial.print(", Y: "); Serial.print(a.acceleration.y); Serial.print(", Z: "); Serial.print(a.acceleration.z); Serial.println(" m/s^2"); Serial.print("Rotation X: "); Serial.print(g.gyro.x); Serial.print(", Y: "); Serial.print(g.gyro.y); Serial.print(", Z: "); Serial.print(g.gyro.z); Serial.println(" rad/s");

delay(500);

}