Zed-King

GROUP OF INSTITUTIONS

ISO 9001 : 2015 Certified

M4-R5.1 Practical Marathon

Introduction to Internet of Things and It's Application





Zed-King Institute

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Practical -1

Object Code: Write a program to buzz when water is detect by a water sensor.

Components Needed:

- Arduino Uno
- Water Sensor
- Buzzer
- Breadboard and jumper wires

Wiring:

➢ **Connect the Water Sensor:**

- Connect the **VCC** pin of the water sensor to **5V** on Arduino.
- Connect the **GND** pin of the water sensor to **GND** on Arduino.
- Connect the **Signal (S)** pin of the water sensor to **digital pin 2** on Arduino.

➢ **Connect the Buzzer:**

- Connect the **positive (+)** pin of the buzzer to **digital pin 8** on Arduino.
- Connect the **negative (–)** pin of the buzzer to **GND** on Arduino.

➢

Zed-King Institute

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Arduino Code:

```
// Program to turn ON buzzer when water is detected

const int waterSensor = 2;   // water sensor pin
const int buzzer = 8;        // buzzer pin

void setup() {
  pinMode(waterSensor, INPUT);  // set water sensor as input
  pinMode(buzzer, OUTPUT);      // set buzzer as output
}

void loop() {
  int waterState = digitalRead(waterSensor); // read sensor value

  if (waterState == HIGH) {
    digitalWrite(buzzer, HIGH); // buzzer ON
  } else {
    digitalWrite(buzzer, LOW);  // buzzer OFF
  }
}
```

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Practical -2

Object Code: **Write a program to control the led with three separate buttons.**

Components Needed:

- Arduino Uno
- LED
- Resistor (220Ω)
- Three Push Buttons
- Breadboard and jumper wires

Wiring:

➢ **Connect the LED:**
- Insert the longer leg (anode) of the LED into the breadboard.
- Insert one end of the resistor into the same row as the LED's anode.
- Insert the other end of the resistor into the GND row of the breadboard.
- Connect a jumper wire from **digital pin 13** of Arduino to the LED anode row.
- Connect Arduino **GND** to the GND row of the breadboard.

➢ **Connect the Three Buttons:**
- Insert all three buttons on the breadboard.
- Connect **one side of each button** to **5V**.
- Connect the **other side of buttons** to:

Zed King Institute

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

- **Button 1** → digital pin **2**
- **Button 2** → digital pin **3**
- **Button 3** → digital pin **4**

Arduino Code:

```
// Program to control one LED using three separate buttons

const int ledPin = 13;
const int button1 = 2;
const int button2 = 3;
const int button3 = 4;

void setup() {
  pinMode(ledPin, OUTPUT);
  pinMode(button1, INPUT);
  pinMode(button2, INPUT);
  pinMode(button3, INPUT);
}

void loop() {
  if (digitalRead(button1) == HIGH ||
      digitalRead(button2) == HIGH ||
      digitalRead(button3) == HIGH) {
    digitalWrite(ledPin, HIGH);   // LED ON
  } else {
    digitalWrite(ledPin, LOW);    // LED OFF
  }
}
```

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Practical -3

Object Code: Write a program for controlling the led with a push button state and led state.

Components Needed:

- Arduino Uno
- LED
- Resistor (220Ω)
- Push Button
- Breadboard and jumper wires

Wiring:

➢ **Connect the LED:**
- Insert the longer leg (anode) of the LED into the breadboard.
- Insert one end of the resistor into the same row as the LED's anode.
- Insert the other end of the resistor into the GND row of the breadboard.
- Connect a jumper wire from **digital pin 13** of Arduino to the LED anode row.
- Connect Arduino **GND** to the GND row of the breadboard.

➢ **Connect the Three Buttons:**
- Insert the push button on the breadboard.
- Connect **one side of the button** to **5V**.
- Connect the **other side of the button** to digital pin 2.
- Use a **10kΩ resistor** from pin 2 to GND (pull-down resistor)

ZedKing Institute

100% IOT Practical Exam Crack Batch

Join our Telegram Channel

Practical Exam 2026

For better experience DOWNLOAD OUR APP

Arduino Code:

```
// Program to control LED using push button state and LED state

const int ledPin = 13;
const int buttonPin = 2;

int buttonState = 0;
int ledState = LOW;

void setup() {
  pinMode(ledPin, OUTPUT);
  pinMode(buttonPin, INPUT);
}

void loop() {
  buttonState = digitalRead(buttonPin);

  if (buttonState == HIGH) {
    ledState = !ledState;           // change LED state
    digitalWrite(ledPin, ledState);
    delay(300);                     // delay to avoid multiple toggles
  }
}
```

Practical Exam 2026

Practical - 4

Object Code: **Write a program to display button press count on an LCD.**

100% IOT Practical Exam *Crack Batch*

Join our Telegram Channel

Practical Exam 2026

For better experience DOWNLOAD OUR APP

Components Needed:

- Arduino Uno
- 16×2 LCD
- Push Button
- Potentiometer (10kΩ)
- Resistor (10kΩ)
- Breadboard and jumper wires

Wiring:

➢ **Connect the LCD:**

- LCD VSS → GND
- LCD VDD → 5V
- LCD V0 → Middle pin of potentiometer
- Potentiometer other two pins → 5V and GND
- LCD RS → Arduino digital pin **7**
- LCD RW → GND
- LCD EN → Arduino digital pin **6**
- LCD D4 → Arduino digital pin **5**
- LCD D5 → Arduino digital pin **4**
- LCD D6 → Arduino digital pin **3**
- LCD D7 → Arduino digital pin **2**

➢ **Connect the Push Button:**

- One side of button → **5V**
- Other side of button → Arduino digital pin **8**
- Connect a **10kΩ resistor** from pin 8 to **GND** (pull-down resistor)

ZedKing Institute

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Arduino Code:

```
// Program to display button press count on LCD

#include <LiquidCrystal.h>

LiquidCrystal lcd(7, 6, 5, 4, 3, 2);

const int buttonPin = 8;
int buttonState = 0;
int lastButtonState = 0;
int count = 0;

void setup() {
  lcd.begin(16, 2);
  pinMode(buttonPin, INPUT);
  lcd.print("Button Count:");
}

void loop() {
  buttonState = digitalRead(buttonPin);


   if (buttonState == HIGH && lastButtonState == LOW) {
     count++;
     lcd.setCursor(0, 1);
     lcd.print(count);
     delay(300);   // debounce delay
   }

   lastButtonState = buttonState;
 }
```

100% IOT Practical Exam *Crack Batch*

Join our Telegram Channel

Practical Exam 2026

For better experience DOWNLOAD OUR APP

Practical - 5

Object Code: Write a program for detection of the light using photo resistor with output as light detected and LED state.

Components Needed:

- Arduino Uno
- Photo Resistor (LDR)
- LED
- Resistor (220Ω for LED)
- Resistor (10kΩ for LDR)
- Breadboard and jumper wires

Wiring:

➢ **Connect the Photo Resistor (LDR):**
  - Connect **one leg of LDR** to **5V**.
  - Connect the **other leg of LDR** to **analog pin A0**.
  - Connect a **10kΩ resistor** from **A0** to **GND** (voltage divider).

➢ **Connect the LED:**
  - Insert the longer leg (anode) of the LED into the breadboard.
  - Connect a **220Ω resistor** from LED anode to **digital pin 13**.
  - Connect the shorter leg (cathode) of LED to **GND**.

ZedKing Institute

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Arduino Code:

```
const int ldrPin = A0;      // LDR connected to A0
const int ledPin = 13;      // LED connected to pin 13
int ldrValue = 0;

void setup() {
  pinMode(ledPin, OUTPUT);
  Serial.begin(9600);
}

void loop() {
  ldrValue = analogRead(ldrPin);   // read light value

  if (ldrValue > 500) {            // light detected
    digitalWrite(ledPin, HIGH);    // LED ON
    Serial.println("Light Detected - LED ON");
  } else {
    digitalWrite(ledPin, LOW);     // LED OFF
    Serial.println("No Light - LED OFF");
  }

  delay(500);
}
```

Practical - 6

Object Code: **Write a program to develop alert system using Flame sensor.**

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Components Needed:

- Arduino Uno
- Flame Sensor
- Buzzer
- LED
- Resistor (220Ω)
- Breadboard and jumper wires

Wiring:

- **Connect the Flame Sensor:**
  - Flame sensor **VCC** → Arduino **5V**
  - Flame sensor **GND** → Arduino **GND**
  - Flame sensor **DO (Digital Output)** → Arduino **digital pin 2**
- **Connect the LED:**
  - LED anode (long leg) → **digital pin 13** through **220Ω resistor**
  - LED cathode (short leg) → **GND**
- **Connect the Buzzer:**
  - Buzzer positive (+) → **digital pin 8**
  - Buzzer negative (–) → **GND**

Zed-King Institute

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Arduino Code:

```
// Program to develop alert system using Flame Sensor

const int flamePin = 2;   // flame sensor pin
const int ledPin = 13;    // LED pin
const int buzzerPin = 8;  // buzzer pin

int flameState = 0;

void setup() {
  pinMode(flamePin, INPUT);
  pinMode(ledPin, OUTPUT);
  pinMode(buzzerPin, OUTPUT);
}

void loop() {
  flameState = digitalRead(flamePin);

  if (flameState == LOW) {        // flame detected
    digitalWrite(ledPin, HIGH);   // LED ON
    digitalWrite(buzzerPin, HIGH); // buzzer ON
  } else {
    digitalWrite(ledPin, LOW);    // LED OFF
    digitalWrite(buzzerPin, LOW); // buzzer OFF
  }
}
```

Practical - 7

Object Code: **Use the Serial Monitor in the Arduino IDE to display a message (“ Hello, Arduino!”) upon successfully uploading a sketch. How does the Serial Monitor help in debugging?**

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Arduino Code:

```
// Program to display message on Serial Monitor

void setup() {
  Serial.begin(9600);                 // start serial communication
  Serial.println("Hello, Arduino!");  // display message
}

void loop() {
  // nothing here
}
```

Practical - 8

Object Code: Write a program to read values from a soil moisture sensor.

Components Needed:

- Arduino Uno
- Soil Moisture Sensor
- Breadboard and jumper wire

Wiring:

Connect the Soil Moisture Sensor:
--- Sensor **VCC** → Arduino **5V**
--- Sensor **GND** → Arduino **GND**
--- Sensor **AO (Analog Output)** → Arduino **A0**

Zed-King

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Arduino Code:

```
// Program to read values from soil moisture sensor

const int sensorPin = A0;
int sensorValue = 0;

void setup() {
  Serial.begin(9600);      // start serial monitor
}

void loop() {
  sensorValue = analogRead(sensorPin);   // read sensor value
  Serial.print("Soil Moisture Value: ");
  Serial.println(sensorValue);
  delay(1000);             // wait for 1 second
}
```

Practical - 9

Object Code: **Write a program to control a relay using a button.**

Components Needed:

- Arduino Uno
- Relay Module
- Push Button
- Breadboard and jumper wires

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Wiring:

- **Connect the Relay Module:**
  - Relay **VCC** → Arduino **5V**
  - Relay **GND** → Arduino **GND**
  - Relay **IN** → Arduino **digital pin 8**
- **Connect the Push Button:**
  - One side of button → **5V**
  - Other side of button → Arduino **digital pin 2**
  - Connect a **10kΩ resistor** from pin 2 to **GND** (pull-down resistor)

Arduino Code:

```
// Program to control relay using a push button

const int relayPin = 8;
const int buttonPin = 2;
int buttonState = 0;

void setup() {
  pinMode(relayPin, OUTPUT);
  pinMode(buttonPin, INPUT);
}

void loop() {
  buttonState = digitalRead(buttonPin);

  if (buttonState == HIGH) {
    digitalWrite(relayPin, HIGH);   // relay ON
  } else {
    digitalWrite(relayPin, LOW);    // relay OFF
  }
}
```

100% IOT Practical Exam Crack Batch
Join our Telegram Channel
Practical Exam 2026
For better experience DOWNLOAD OUR APP

Practical - 10

Object Code: **Write a program to read input from the Serial Monitor and echo it back to you.**

Arduino Code:

```
void setup() {
  Serial.begin(9600);     // start serial communication
  Serial.println("Type something and press Enter:");
}

void loop() {
  if (Serial.available() > 0) {          // check if data is available
    String data = Serial.readString();   // read input
    Serial.print("You typed: ");
    Serial.println(data);                // echo back
  }
}
```

Zed-Institute