

# DLD SLIDE

## Digital Clock Project Presentation

### Slide 1: Title Slide

Title: Digital Clock Project  
Subtitle: Design, Implementation, and Demonstration  
Your Names and Project Partners  
Date

### Slide 2: Introduction

Project Objective: Build a digital clock using an Arduino UNO R3, an LCD display, and basic electronic components.

Project Scope: Design a circuit to control the clock's timekeeping function and display it on the LCD.

Project Requirements:

- Arduino UNO R3
- LCD 16x2 Display
- Potentiometer (max 250k $\Omega$ )
- Resistor (220k $\Omega$ )
- Breadboard
- Jumper Wires

### Slide 3: Circuit Diagram

Circuit Diagram Image add koriss khatay aika....

Description: This diagram illustrates the connection points for each component:

- Arduino UNO R3
- LCD 16x2 Display
- Potentiometer
- Resistor
- Power supply (5V) and Ground
- Digital pins for communication

Highlight: Use different colors for the different connections.

Key Components and their Roles:

Arduino UNO R3: Controls the timekeeping and communicates with the LCD.

LCD 16x2 Display: Displays the time.

Potentiometer: but can be used for adjusting brightness or other features in future development.

Resistor: Provides a defined current flow for the LCD.

## Slide 4: Understanding the Potentiometer

Title: Understanding the Potentiometer in the Digital Clock Project

- Role in the Circuit:
  - The potentiometer in our digital clock project is used to adjust the contrast of the 16x2 LCD display.
  - Proper contrast adjustment ensures that the characters on the LCD are clearly visible and readable.

How It Works:

- The potentiometer has three pins:
  - VCC (Pin 1): Connected to +5V (provides power).
  - GND (Pin 2): Connected to ground (0V).
  - Wiper (Pin 3): The adjustable output that goes to the V0 (contrast pin) of the LCD.
- By rotating the knob of the potentiometer, you change the resistance, which in turn adjusts the voltage level at the wiper pin.
- This variable voltage at the V0 pin of the LCD adjusts the contrast of the display.

## Slide 5: Tinkercad Simulation

Image: Tinkercad circuit design of the Digital Clock (provided).

Description: Visual representation of the digital clock circuit built in Tinkercad, simulating the functionality of the actual project.

Key features:

Arduino UNO R3

Breadboard

LCD Display

Jumper wires

Simulated time display on the LCD.

Highlight: Show the time changing in the simulation.

## Slide 6: Arduino Code

Code Snippet: Code for the Arduino UNO R3 (provided).

```
#include <LiquidCrystal.h>
```

```
int h=0,m=0,s=0;
```

```
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
```

```
LiquidCrystal lcd1(13, 10, 9, 8, 7, 6);
```

```
void setup() {
```

```
    lcd.begin(16, 2);
```

```
    lcd1.begin(16, 2);
```

```
}
```

```
void loop() {
```

```
    s=s+1;
```

```
    if(s==60){
```

```
        m=m+1;
```

```
        s=0;
```

```
    }
```

```
    if(m==60){
```

```
        m=0;
```

```
        h=h+1;
```

```
    }
```

```
    lcd1.print("SHANTNU");
```

```
    lcd1.setCursor(0,1);
```

```
    lcd1.print("MAHESHWARI");
```

```
    lcd.print("HOURS=");
```

```
    lcd.print(h);
```

```
    lcd.setCursor(10,0);
```

```
    lcd.print("MIN=");
```

```
    lcd.print(m);
```

```
    lcd.setCursor(0,1);
```

```
    lcd.print("SEC=");
```

```
    lcd.print(s);
```

```
    delay(1000);
```

```
    lcd.clear();
```

```
}
```

## Slide 7: Demonstration

Live demonstration of the working digital clock:

Display the time updating on the LCD.

Show the ability to reset the clock.

Highlight: Demonstrate the smooth functionality of the digital clock.

## Slide 8: Conclusion

Summary of the project: Successful creation of a digital clock using Arduino UNO R3 and LCD display.

Challenges faced and solutions: Discuss any problems encountered during the project and how they were overcome.

Future Improvements:

Implementing more features such as alarms, countdown timers, or stopwatches.

Highlight: Discuss potential directions for future development.

## Slide 9: Thank You