

Embedded Project Collection

1. Smart Lighting System

A project that uses an 8051 microcontroller to automatically turn lights on/off based on ambient light or presence sensors.

2. Motion Detector Alarm

An embedded system that activates an alarm when motion is detected using a PIR sensor and 8051 MCU.

3. IR Remote Controlled Fan

This project allows a user to control the speed of a fan using an IR remote, with decoding handled by the microcontroller.

4. Temperature Monitoring System

Measures temperature with an LM35 sensor and displays the reading on an LCD using 8051-based control logic.

5. Digital Lock Using Keypad

Implements a password-based digital lock using a keypad and 8051 microcontroller with EEPROM support.

6. LED Pattern Generator

Generates dynamic LED patterns for decorative or learning purposes. Good for basic timing and I/O exercises.

7. UART-Based Serial Communication

Demonstrates sending and receiving characters over RS232 interface between 8051 and a PC terminal.

8. Password-Protected Access Control

Adds user ID and password storage in EEPROM to control system access using 8051 microcontroller.

9. Line Follower Robot (Basic)

Builds a simple 2-motor robot that follows a black line on white background using IR sensors and MCU logic.

10. Sound-Activated Switch

Turns on appliances based on audio threshold triggers using a sound sensor and signal processing via 8051.