Fire Detection System – using VSD Squadron Mini

Overview

This system detects fire or flame using an infrared-based flame sensor. When a flame is detected, it automatically triggers a **buzzer** and **LED** to alert the user. It's a basic and effective setup for safety systems in smart homes or robots. The system utilizes digital input from the flame sensor and controls output devices using the I/O pins of the VSD Squadron Mini. This project demonstrates the use of digital I/O pins for real-time flame monitoring and alerting.
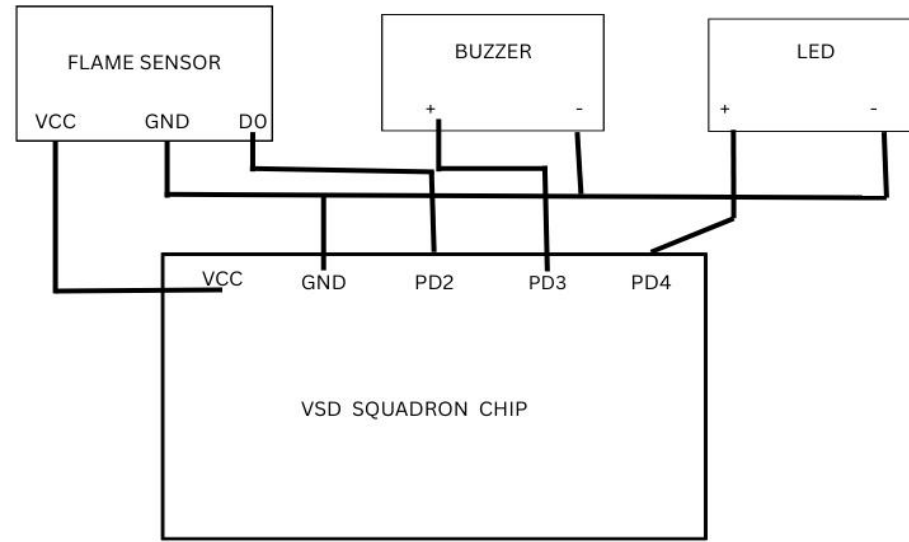
Components Required

Component	Quantity
Flame Sensor (IR-based)	1
LED	1
220Ω Resistor (for LED)	1
Active Buzzer Module	1
VSD Squadron Mini	1
USB Cable	1

Table for Pin Connection

VSD Squadron Pin	Connected To	Purpose
5V	Flame Sensor VCC	Power supply
GND	Sensor, LED, Buzzer	Common ground
PD2	Flame Sensor D0	Digital input (flame)
PD3	Buzzer +	Digital output
PD4	LED Anode (via 220Ω)	Digital output

Pinout diagram

Circuit diagram