Overview

This project demonstrates how an **IR sensor** can be used with a **CH32V003 microcontroller** to detect objects and control an **LED** accordingly. When the sensor detects an obstacle, the LED turns ON; otherwise, it remains OFF.

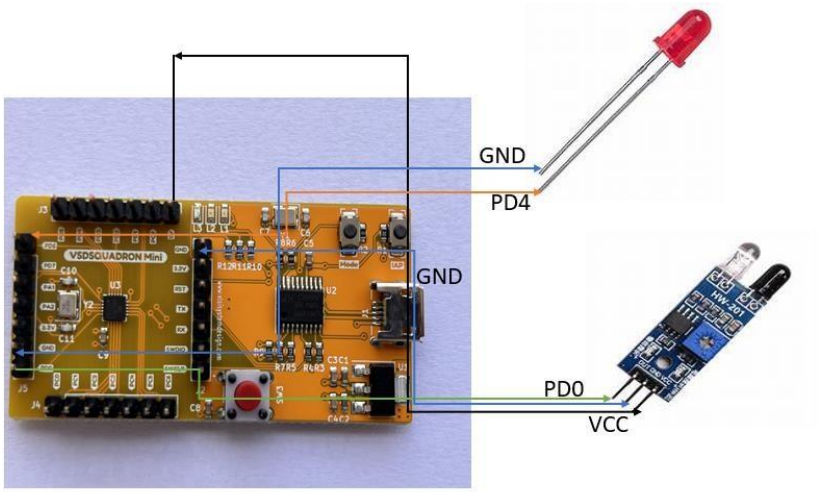
Objectives

- To interface an **IR sensor** with the **CH32V003** microcontroller.
- To control an **LED** based on IR sensor detection.
- To use **UART debugging** for real-time monitoring of sensor data.
- To demonstrate an object detection system using an IR sensor.

Components Required

components	quantity
microcontroller	1
IR SENSOR	1
LED	1

Circuit Diagram



Circuit Connections

IR Sensor Connections

IR Sensor Pin	CH32V003 Pin	Description
VCC	3.3V	Power supply to IR sensor
GND	GND	Ground connection
OUT	PD0	Sensor output (active-low detection)

LED Connections

LED Pin	CH32V003 Pin	Description
Anode	PD4	LED control output
Cathode	GND	Limits current & completes circuit