

Project Logs

June 3 – Initial Setup & Wiring

- Installed Arduino IDE and KiCad
- Created Google Doc for logging project progress
- Finalized simulation platform: Wokwi
- Selected core components: Arduino Uno and two HC-SR04 ultrasonic sensors
- Defined pin mappings and wiring plan
- Began wiring and simulation setup in Wokwi

June 4 – Phase 1: Sensor Code Execution

- Wrote Arduino code to:
 - Read distances from HC-SR04 sensors

- Display values via Serial Monitor
 - Trigger LED or buzzer if an object is detected within threshold range
- Tested simulation by varying object distance
- Verified LED/buzzer response to proximity

June 5 – OLED Display Integration Planning

- Chose I2C-based OLED over LCD for compact size
- Wired OLED to A4 (SDA) and A5 (SCL) on Arduino
- Confirmed plan to display live left/right distances
- Identified Adafruit SSD1306 and GFX libraries for display

June 6 – Phase 2: OLED Display Integration

- Added SSD1306 OLED to circuit
- Integrated I2C communication using Adafruit libraries

- Displayed real-time distances from both sensors
- Implemented conditional display: "Vehicle Near" alert when distance is below threshold

June 7 – Phase 3: Schematic & Documentation

- Designed final schematic in KiCad using:
 - Arduino Uno R3
 - 2x HC-SR04 sensors (represented as Conn_01×04)
 - 1x SSD1306 OLED
 - 2x LEDs + 2x buzzers + resistors
- Exported schematic to PDF format
- Created and inserted bill of materials (BOM) in [README.md](#)
- Prepared GitHub repository and file structure

July 26 – Finalization & Upload

- Created GitHub repository and committed all files
- Uploaded final KiCad schematic, code, and documentation
- Completed README.md with circuit details and project overview
- Wrote component justification and pin mapping sections
- Reviewed Google Doc layout for clarity and completeness