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

June 8 – 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