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**Purpose:** Develop an open-source environmental sensor for data-logging situations.

**Approach:** Device development occurred in three phases. Phases one and two worked on creating core unit features and capabilities while phase three focused on developing and interfacing user interface and sensor bank.

**Accomplishments:**

- Develop a portable and modular sensor system
- Implement multi sensor logging
- Create separate user interface/display unit
- Implement location logging with interface unit
- Develop system enclosures
- Provide full open-source release
- Develop user manual/build instructions

**Current Features:**

- LCD Screen
- Multi-Sensor Capability
- User Interface
- GPS
- SD Card
- Real Time Clock
- Arduino Platform
- CSV log file

**Functional Sensors:**

- Humidity
- Alcohol
- Temperature
- CO<sub>2</sub>
- Ozone
- CO

**Sensor Format:**

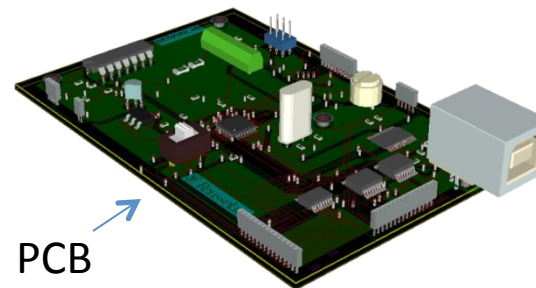
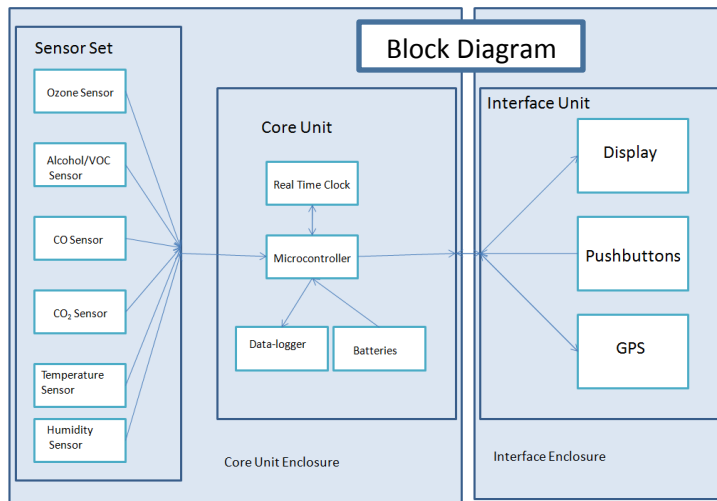
- Analog
- UART
- I<sup>2</sup>C

**Future Challenges:**

- Wireless/Bluetooth connectivity
- Weather proofing
- Solar power option
- Increasing Durability

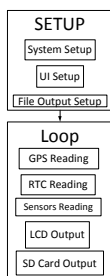
**Cost of Materials:**

- Sensor bank: \$203.40
- User interface: \$105.29

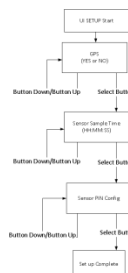


PCB

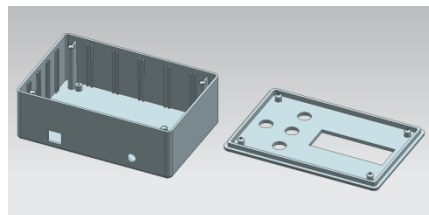
Software Block Diagram



UI State Diagram



User Interface Unit



Ozone Reading

