FixIT
Prototyping

AI-Based preventative maintenance for cars

TEAM: sdmay25-44

Project Overview

Problem Statement: Modern cars generate cryptic Diagnostic Trouble Codes (DTCs) that most drivers don't understand. This creates a gap in knowledge, leaving drivers vulnerable to mechanic overcharges and unplanned costs.

Solution: "FixIt is an AI-driven app that translates complex DTCs into easy-to-understand insights. Our solution empowers DIYers, everyday car owners, and car sellers to make informed maintenance decisions."

Prototype(s) Overview

- **Hardware Prototype:** “OBD-II dongle with ESP32 to connect vehicles to the cloud for data analysis.”
- **Software Prototype:** “FixIt app interface designed to present real-time DTC code interpretations, alerts, and recommendations.”
- **Prototyping Purpose:** “Establish reliable hardware communication and test app usability.”

Purpose and Objectives of Prototyping

- **HARDWARE GOALS:** "ENSURE STABLE DATA TRANSMISSION FROM OBD-II TO ESP32 AND CLOUD."
- **APP INTERFACE GOALS:** "TEST THE CLARITY AND USABILITY OF DTC CODE INTERPRETATIONS AND NOTIFICATIONS."
- **LEARNING GOALS:** "ASSESS RELIABILITY OF HARDWARE SETUP AND USER INTERACTION WITH DTC INSIGHTS."

Reflections and Key Learnings

- **Hardware Insights:** "Connection issues identified; need for improved data stability."
- **Software Insights:** "Users found DTC interpretations helpful but requested clearer notifications."
- **User Feedback:** "Testing showed setup complexity; improvements to UI and Bluetooth stability planned."

Implications and Next Steps

- **HARDWARE ADJUSTMENTS:** "OPTIMIZE OBD-II AND ESP32 CONNECTIVITY FOR CONSISTENT DATA TRANSMISSION."

- **SOFTWARE REFINEMENT:** "PORT DTC DECODING TO JAVASCRIPT FOR REAL-TIME APP PROCESSING; ADD CLOUD CONNECTIVITY FOR DEEPER ANALYSIS."

- **FUTURE PROTOTYPING:** "REFINE USER INTERFACE, ENHANCE BLUETOOTH STABILITY, AND PREPARE FOR BROADER USABILITY TESTING."

Thank you!

QUESTIONS?