DETAILED DESIGN -FIXIT

AGENDA

Project Overview

Detailed Design

Functionality

Technology Considerations

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Conclusions
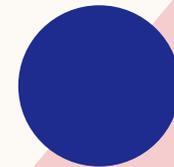
PROJECT OVERVIEW

FixIt: AI-powered OBD-II diagnostic tool

Reads diagnostic trouble codes (DTCs) from vehicle's onboard computer

Provides user-friendly interpretations and insights

Offers predictive maintenance suggestions based on vehicle data

DETAILED DESIGN

Hardware Components:
- OBD-II dongle for reading vehicle data
- ESP32 microcontroller for processing and transmitting data

Software Components:
- Mobile app for user interface and notifications
- Cloud backend for data storage and AI processing
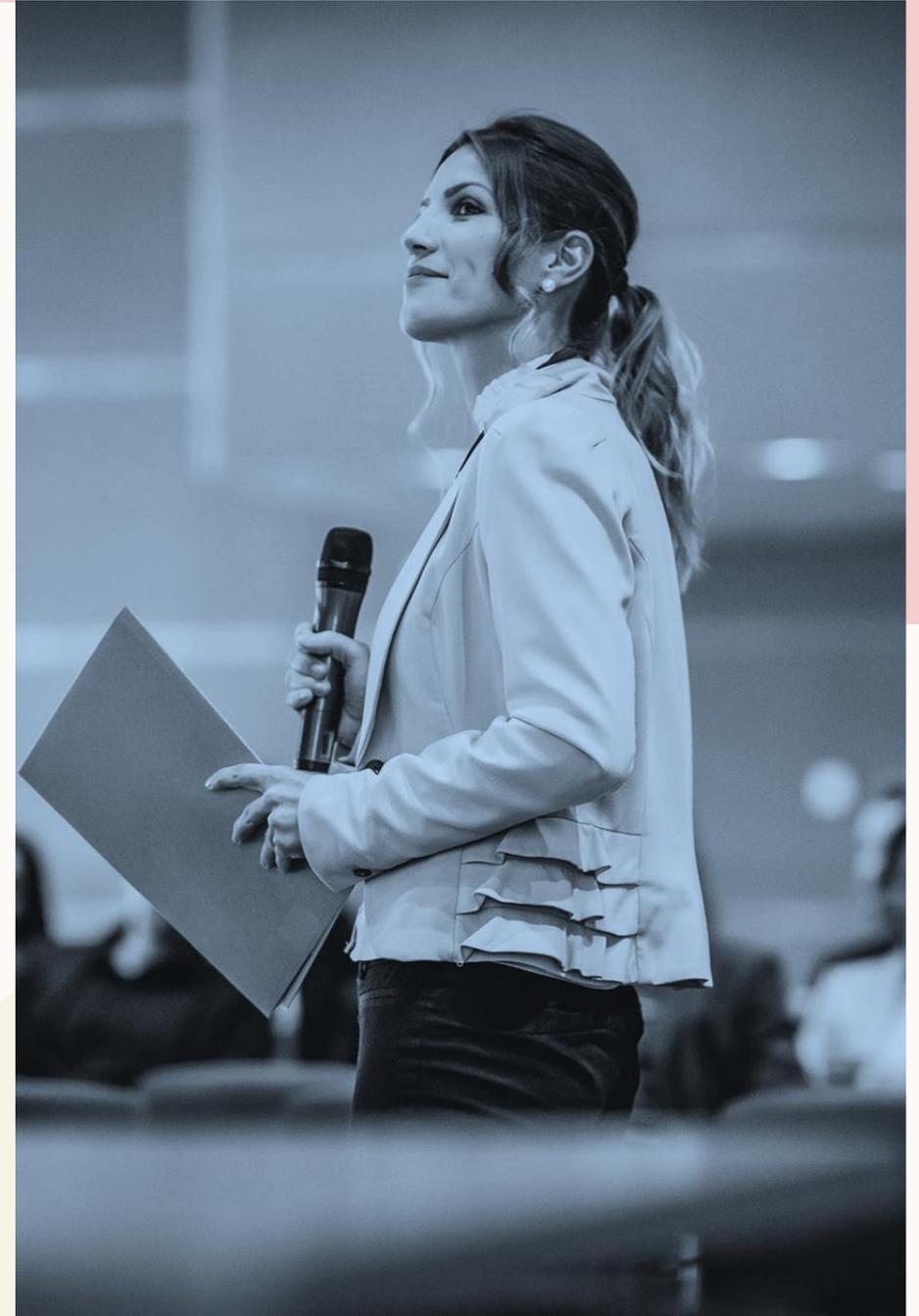
FUNCTIONALITY

- User plugs OBD-II dongle into vehicle's diagnostic port
- ESP32 reads DTCs and transmits data to cloud via Wi-Fi
- Cloud backend processes data using AI algorithms
- User receives notifications and insights via mobile app
- App displays DTC interpretations and maintenance suggestions
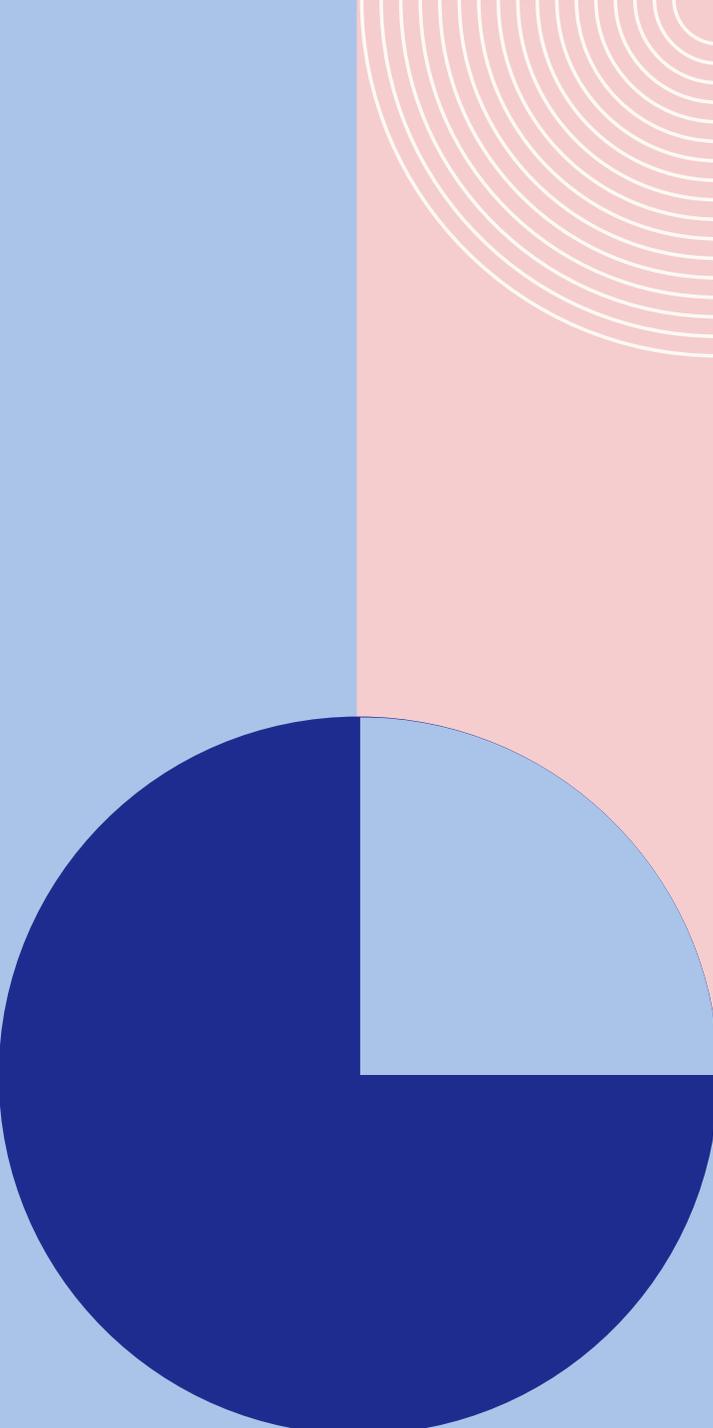
TECHNOLOGY CONSIDERATIONS

- OBD-II dongle: Reliable, low-cost, but limited data access
- ESP32: Powerful, Wi-Fi enabled, but requires custom firmware
- Mobile App: Cross-platform (iOS/Android), user-friendly, but dependent on cloud
- Cloud Backend: Scalable, enables AI processing, but adds complexity and cost
- AI Algorithms: Provide intelligent insights, but require training data and tuning

AREAS OF CONCERN AND DEVELOPMENT

- Ensuring reliable hardware communication and data transfer

- Developing accurate AI models for DTC interpretation

- Balancing app usability with depth of diagnostic information

- Securing user data and ensuring privacy compliance

- Differentiating from existing OBD-II tools in the market

CONCLUSIONS

1. FixIt's detailed design incorporates hardware, software, and AI components

2. The system aims to provide user-friendly, AI-powered vehicle diagnostics

3. Key challenges include hardware reliability, AI accuracy, and market differentiation

4. Next steps: Prototype development, user testing, and iterative refinement
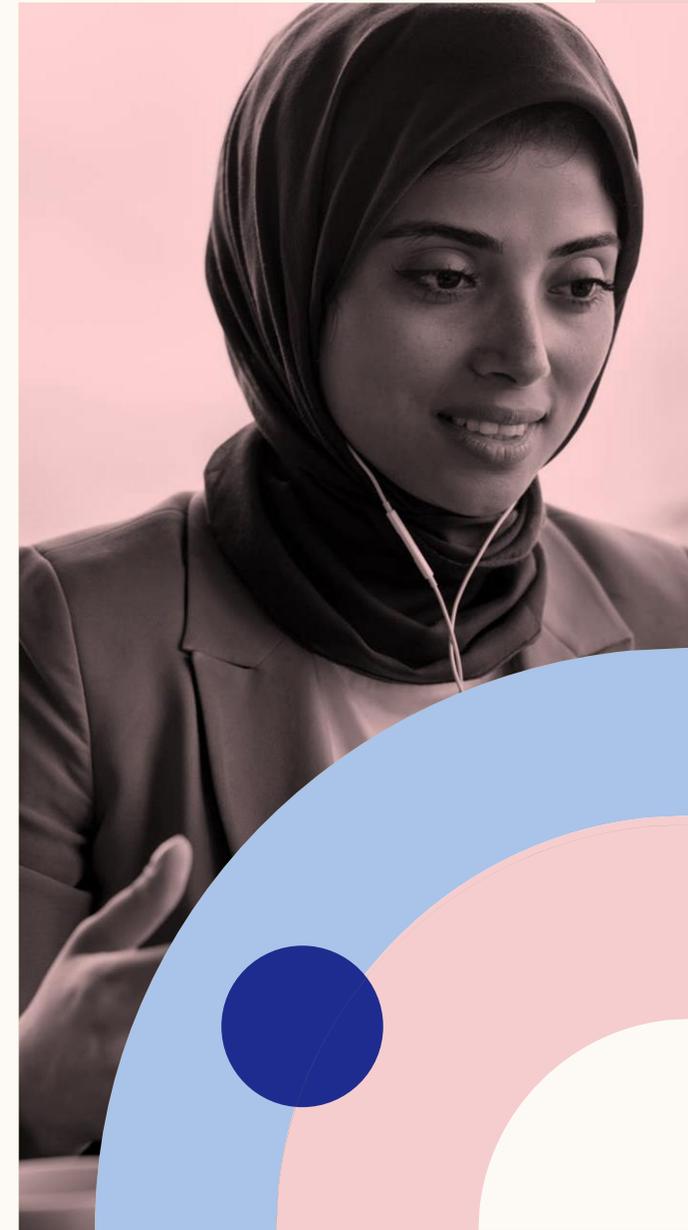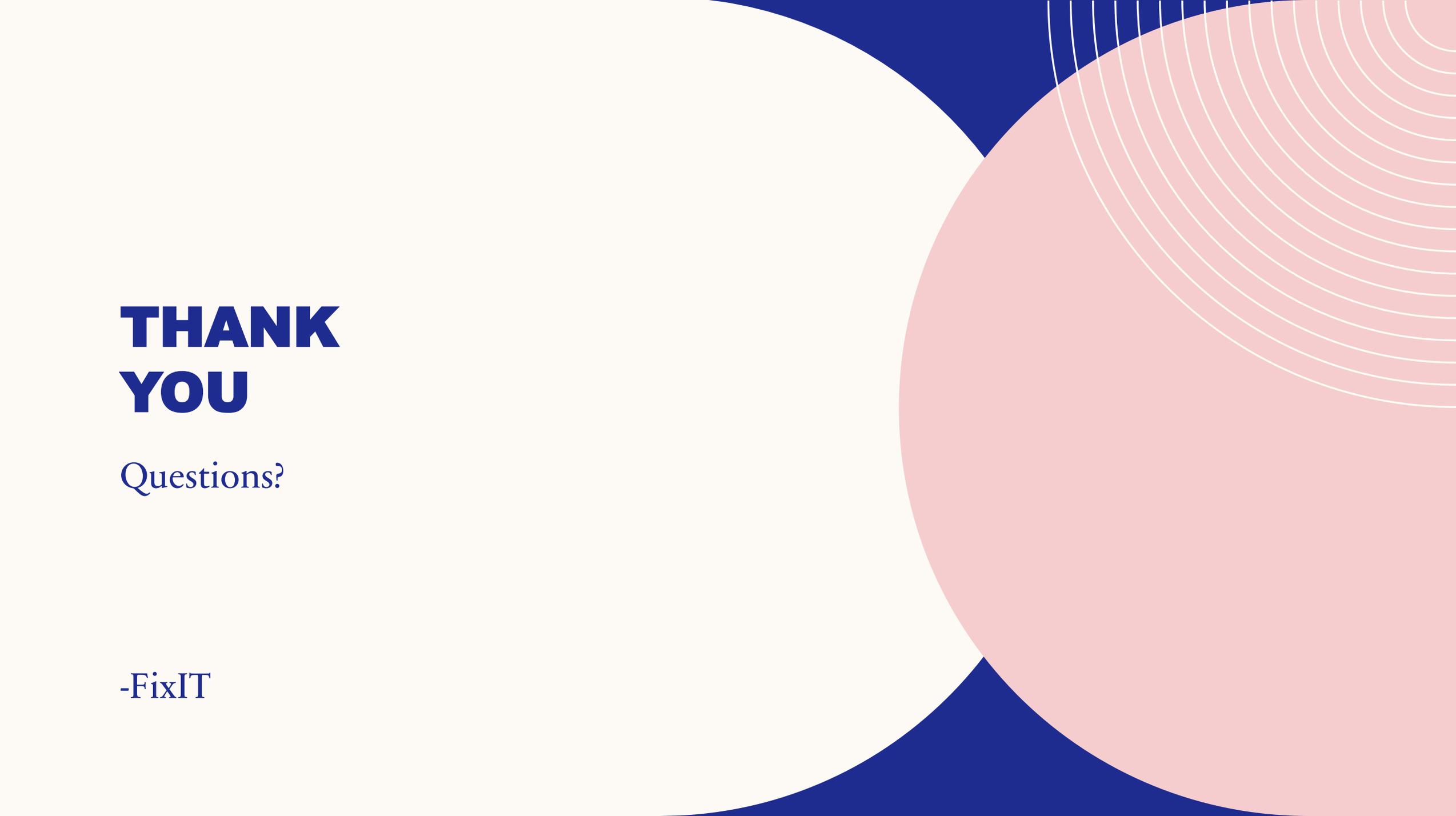
THANK YOU

Questions?

-FixIT