Project Plan Presentation
Automotive Service Advisor AI Assistant

The Capstone Experience

Team Urban Science

John Harris

Owen Miller

Omar Osman

Srujan Patil

Joshua VanBynen

Travis Wright

Department of Computer Science and Engineering

Michigan State University

Spring 2025

Project Sponsor Overview

- Global leader in automotive data analytics

- Partnered with major automotive brands

- Headquartered in Detroit, MI

- Empower dealerships with actionable insights

Project Functional Specifications

- Improve the in-person automotive service experience

- Helps service advisors maximize sales opportunities

- Identify needed services for the customer

- Present customer with information on recommended services
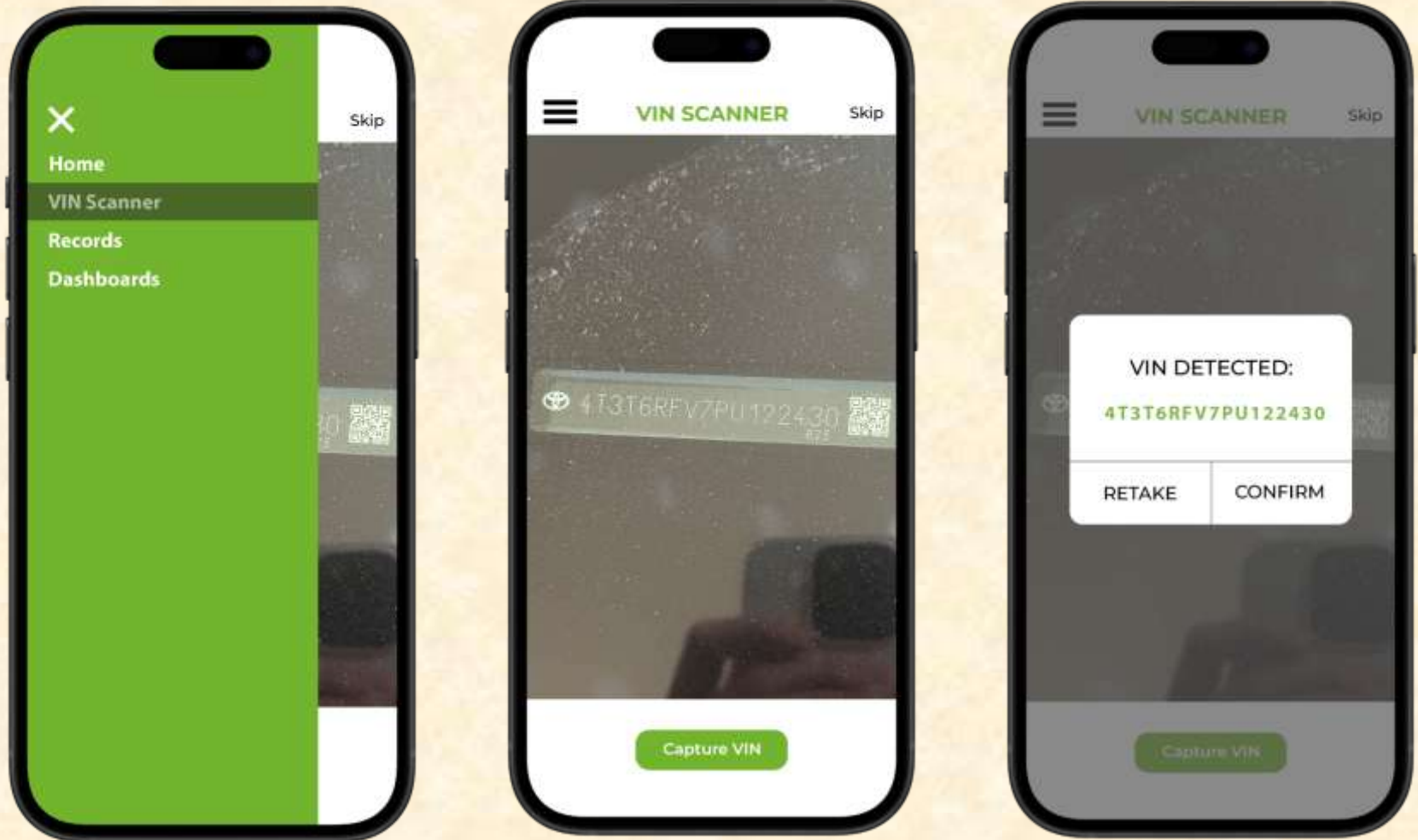
Project Design Specifications

- Cross platform mobile application
- Photo capture of VIN and mileage
- Customer information and service history retrieval
- Create custom sales approach
- Video generation to inform customer
- Data visualizions of company stastitics and performance metrics

Screen Mockup: Homepage
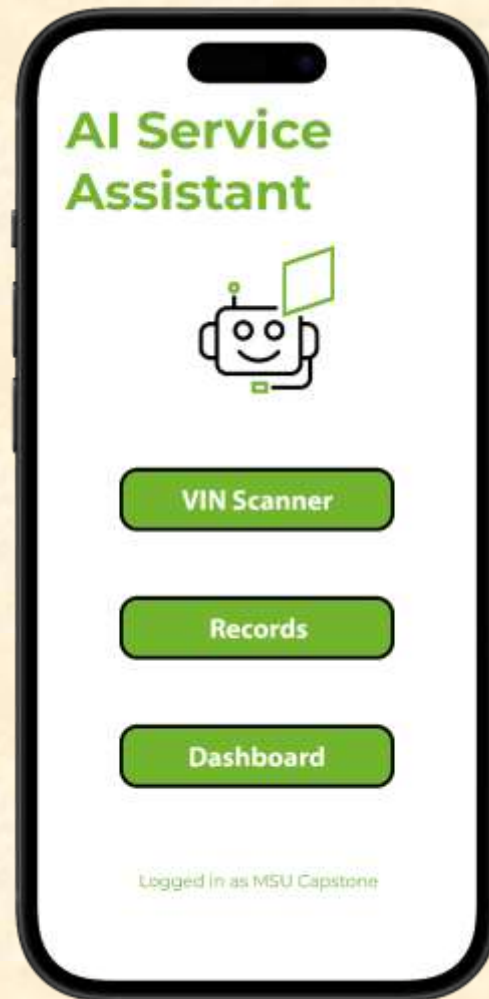
Screen Mockup: VIN Scanning

Screen Mockup: Customer Information

Screen Mockup: Customer Profile

Screen Mockup: Vehicle Service History

Screen Mockup: Recommended Services

Screen Mockup: Dashboard

Project Technical Specifications

- User Interface will be created using .NET MAUI with XAML

- Backend is created using .NET Web API using C#

- SQL Database being hosted on Azure

- Azure Cloud Services that are being used are: Open-AI, Computer Vision, Search.

- Synthesia is being used for generating personalized AI media

Project System Architecture
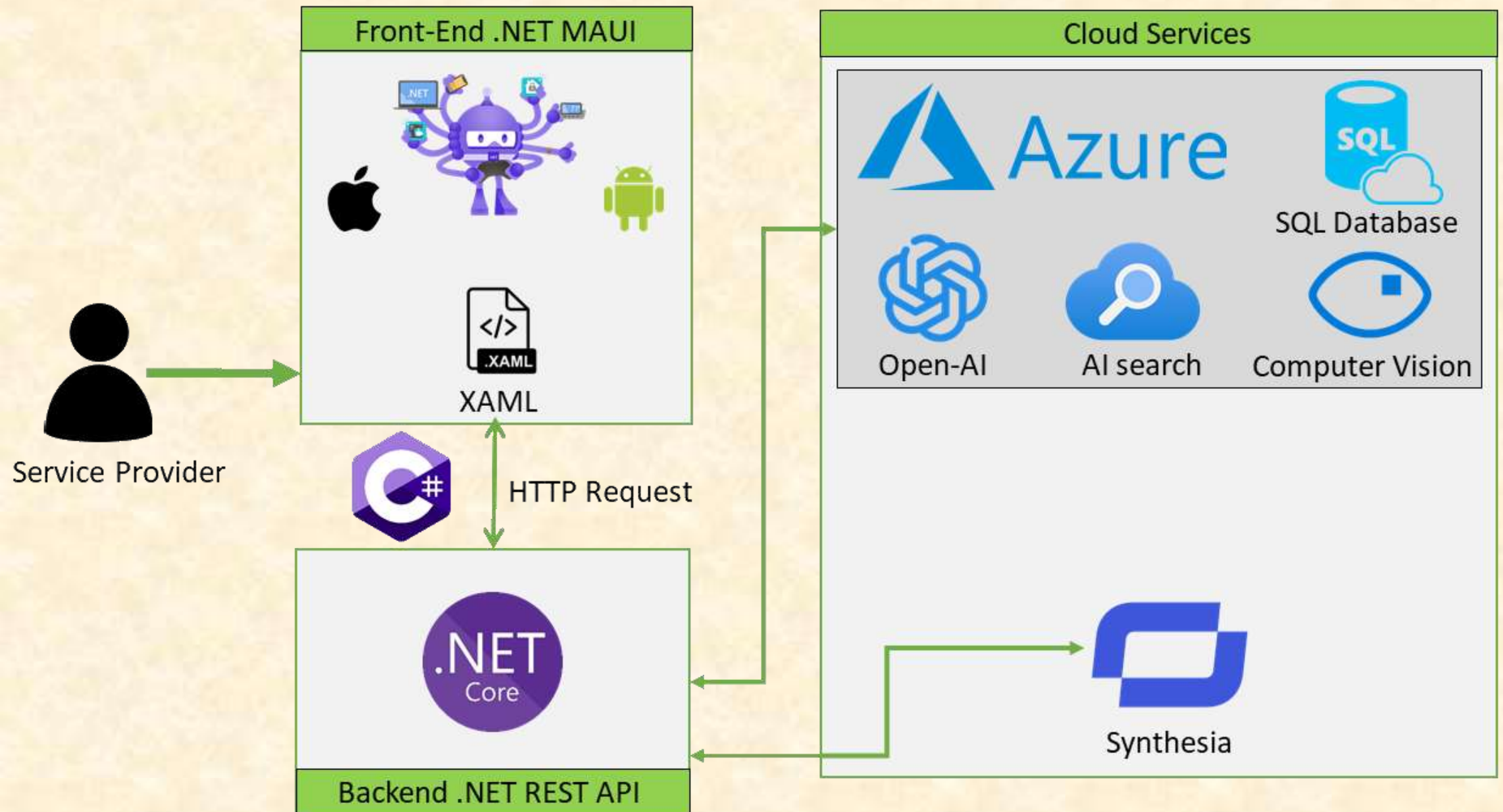
Project System Components

- Hardware Platforms
  - Mobile Devices
- Software Platforms / Technologies
  - .NET MAUI
  - .NET Core API
  - SQL Database
  - Azure Cloud Services
  - Synthesia

Project Risks

- Risk 1
  - Description: Capturing customer demographic data
  - Mitigation: Categorizing customer into specific lifestyle type
- Risk 2
  - Description: Web API Hosting
  - Mitigation: Host our .NET backend on Azure App Services
- Risk 3
  - Description: Sending image of VIN to the backend and returning vehicle data in JSON
  - Mitigation: Explore appropriate C# JSON serializing libraries that enable decode and encoding between our backend and frontend systems
- Risk 4
  - Description: Scanning mileage on vehicles
  - Mitigation: Adding manual input for mileage, and create UI that can allow service advisors to select correct mileage digits

Questions?