

Project Plan Presentation

Mobile App Extension and Enhancements

The Capstone Experience

Team RPM

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*From Students...
...to Professionals*

Project Sponsor Overview

- RPM is an end-to-end transportation service provider
- They support all modes of transportation across all industries, like freight and vehicles
- They connect carriers to shippers
- On time delivery 98% of the time and 100% shipment acceptance
- Growing 40%+ yearly
- Focus on carrier relations
- Based out of Royal Oak, MI

Project Functional Specifications

- Enhance mobile app to provide a one-stop solution to carriers for all their shipping needs like searching, bidding, tracking, and more
- Increase user retention and application use with a rewards program for carriers
- Improve user experience by personalizing shipment recommendations
- Reduce costs by creating our own bid system instead of using TNX.

Project Design Specifications

- Bidding system – A system for carriers to make bids on available shipments from RPM
- Rewards program – A system that awards points to carriers for perfect deliveries, redeemable for gift cards
- Search system – A search system where carriers can apply filters to find new shipments
- Shipment suggestion - A smart shipment suggestion system that suggests carriers new shipments based on their preferences and history



Screen Mockup: Shipment Search

Search RPM

From

To

Shipment Size

Minimum Price

Time Left for Delivery

Sort By

Price: Low to High Price: Low to High

Shipment Size Time Left

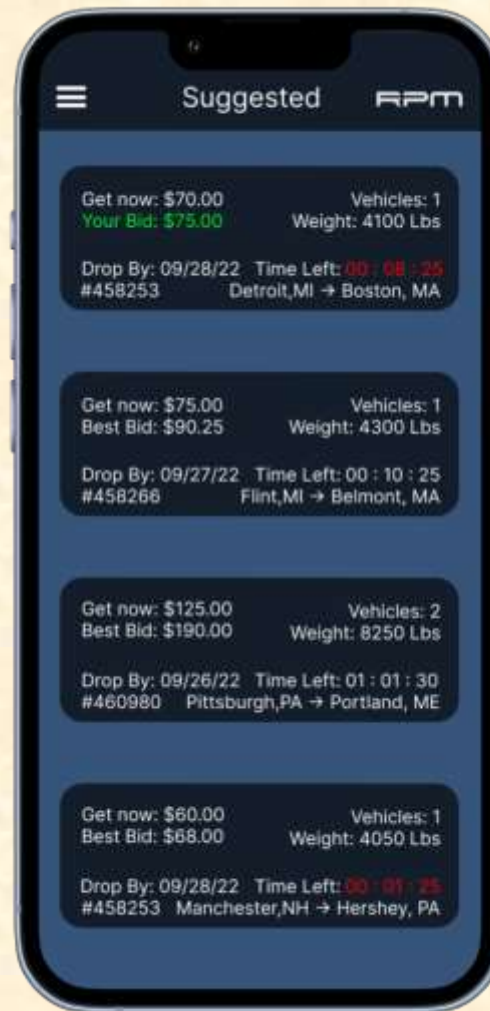
Search Nearby Locations

True False

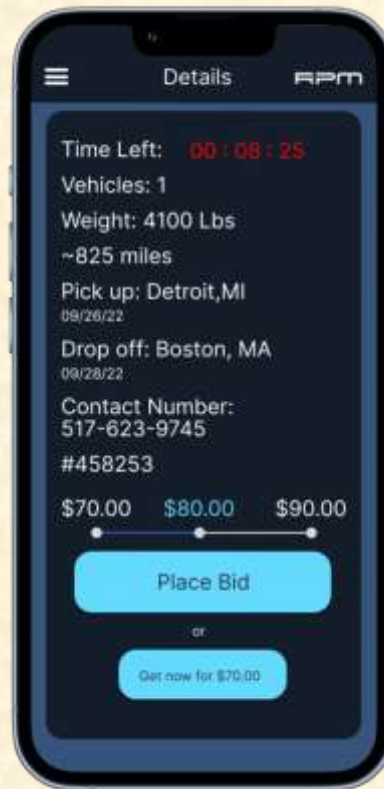
Search



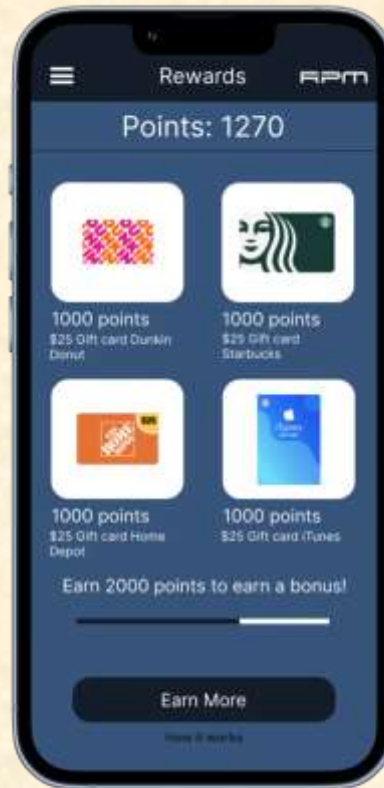
Screen Mockup: Suggestions



Screen Mockup: Bid Detail



Screen Mockup: Rewards

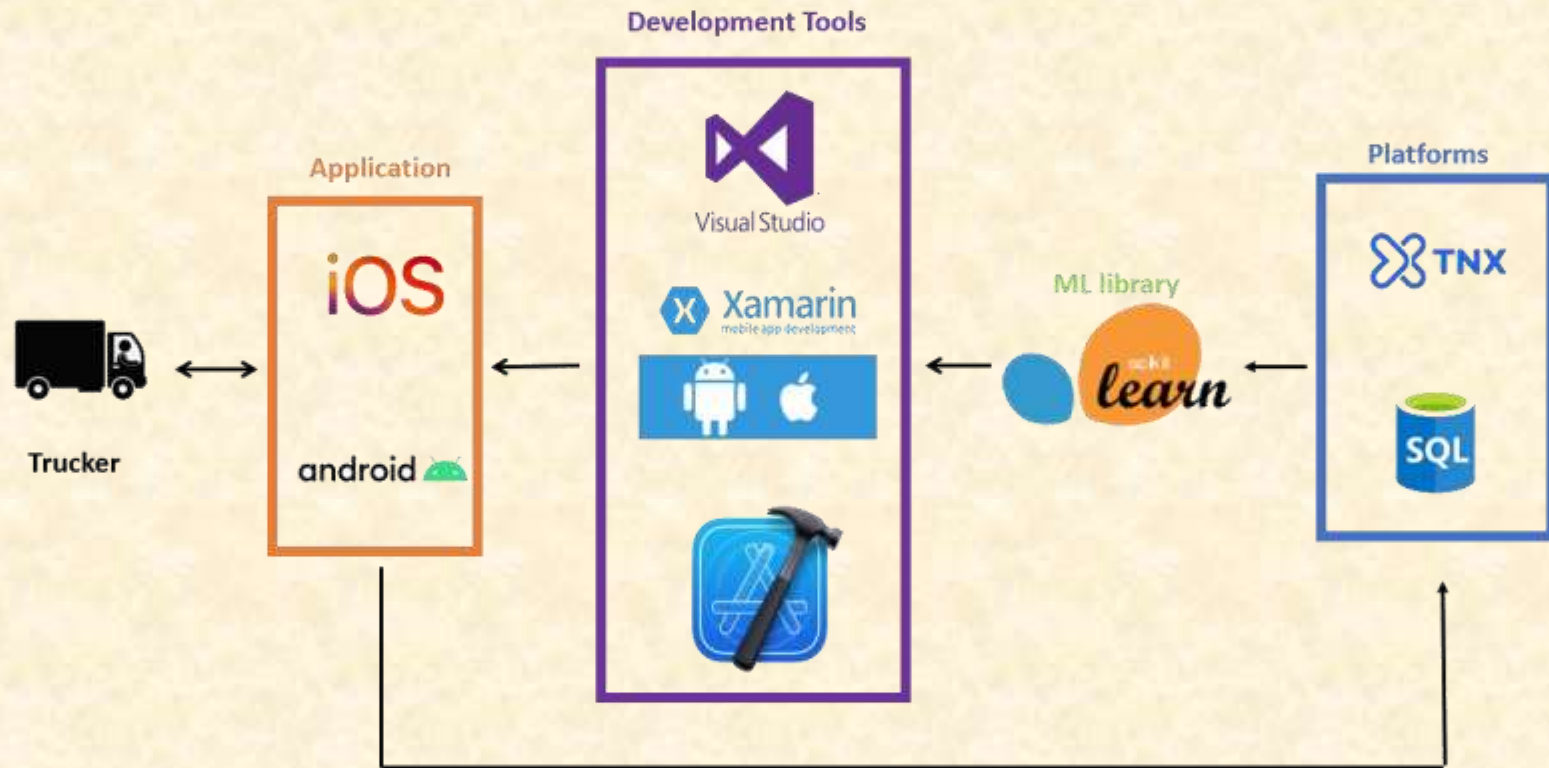


Project Technical Specifications

- The application uses C# and the .NET framework.
- The application is developed using the Xamarin C# Library in Visual Studio.
- TNX logistics will provide RPM with cargo information and accurately push the cargo to truck drivers through machine learning using Scikit-learn library.
- Azure SQL stores cargo history for RPM as well as truck driver's shipment history.



Project System Architecture



System Components

- Hardware Platforms
 - iOS
 - Android
- Software Platforms / Technologies
 - Visual Studio 2019
 - Xamarin
 - XCode
 - TNX logistics
 - Azure SQL
 - Scikit-learn

Project Risks

- Selecting and/or implementing AI load suggestions
 - An in-house AI suggestion system
 - Research existing suggestion systems and adopt an appropriate one
- Implementing a functional bidding system
 - An in-house bidding system for shipments
 - Look into how bidding systems work, begin to prototype
- Finding and using APIs to import results from Python into app
 - Our AI algorithm will be in Python, but results need to get into app
 - Find APIs that can port the results from Python to Xamarin
- Designing and verifying driver rewards system
 - RPM needs a reward system that deposits money into a user's accounts
 - Look into similar rewards programs and their design; work with RPM to find a solution that fits their system



Questions?

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