MICHIGAN STATE UNIVERSITY

Project Plan

24-Hour Road Service Mobile Apps

The Capstone Experience

Team Auto-Owners Insurance

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From Students…
…to Professionals

Project Overview

- Smartphone apps that will assist in requesting roadside service
- Administrative Web Site to view usage data

Functional Specifications-Application

- Communicate with mock Auto-Owners Insurance databases
- Login feature for use on first setup of the application
- Daily information update
- Email positional and insurance data to quest
- Viewing of insurance information
- Locate nearby service centers, hotels, and restaurants
- Push usage data to a logging database
- UI that feels like the Auto-Owners website

Functional Specifications-Website

- Login feature for administrators
- Pulls data from logging database
- Graphs and tables to show usage statistics
- Ability to customize graph data

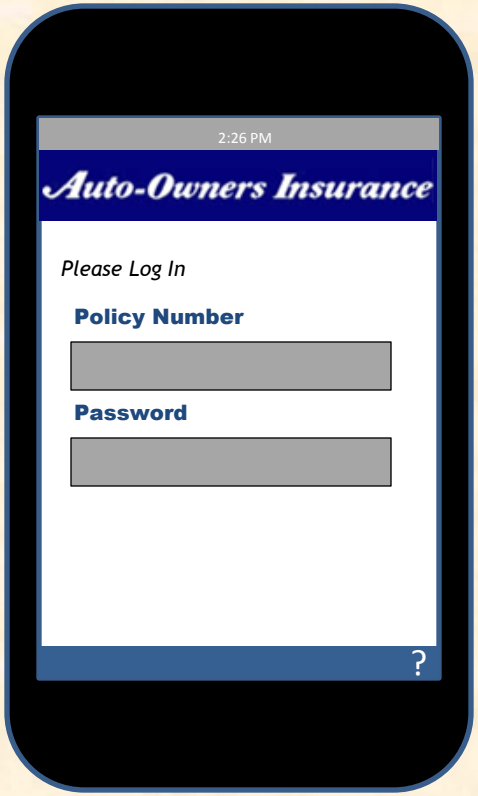
Design Specifications-Application

- Primary Functionality Use Case
  - Vehicle breaks down
  - Driver opens app
  - Selects Email GPS and Insurance Data
  - Prompted to call Quest

Design Specifications-Application

- Additional Functionality
  - Can view insurance data (even while making a call)
  - Map showing restaurants, hotels, service centers
- Modeled after a screen mockup by Auto-Owners Insurance and their website

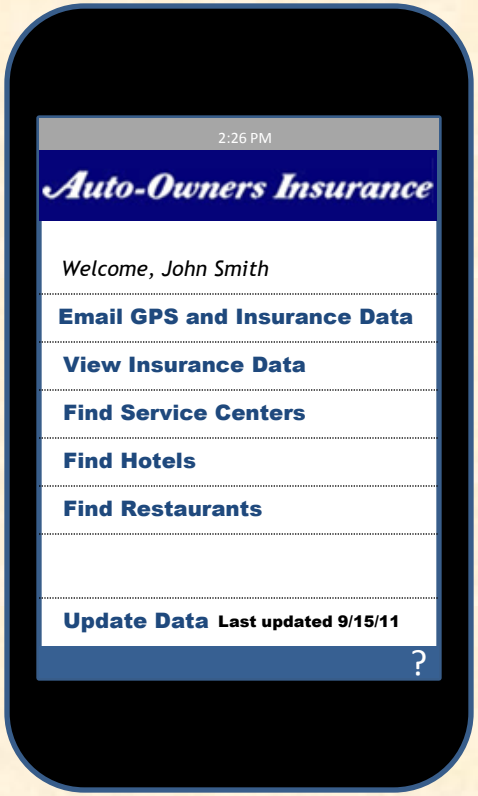
Screen Mockups



Login Screen

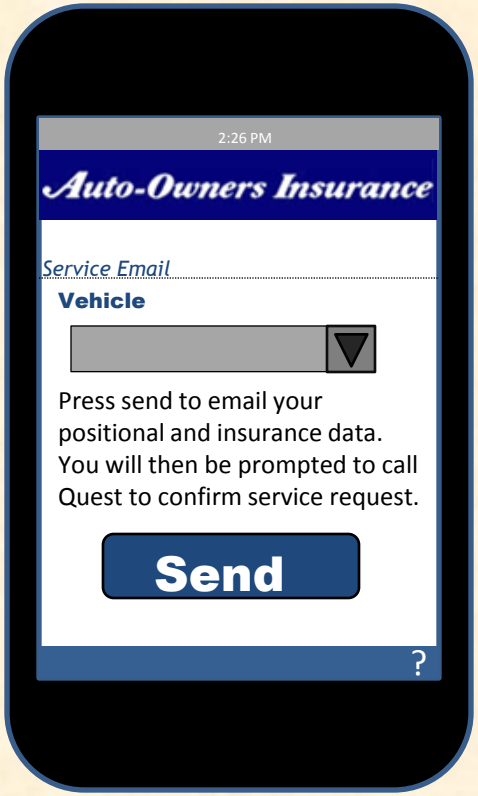
Screen Mockups

Main Screen



Main Screen

Screen Mockups



Request Service Screen

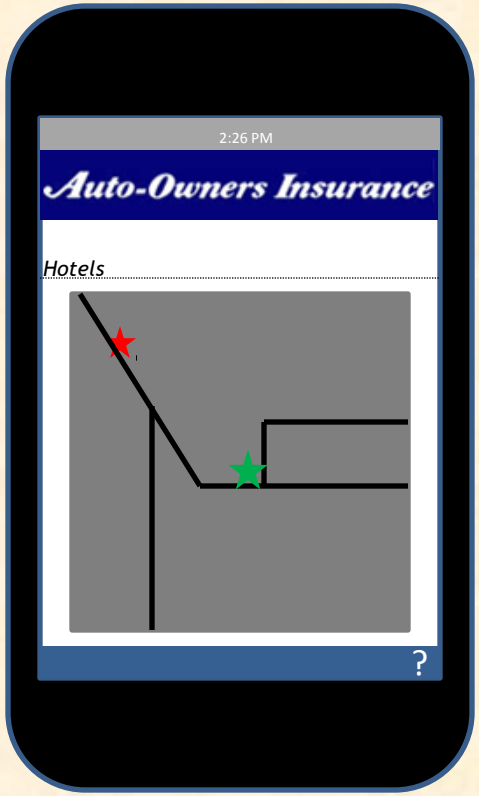
Request Service Prompt

Screen Mockups

View Information Screen

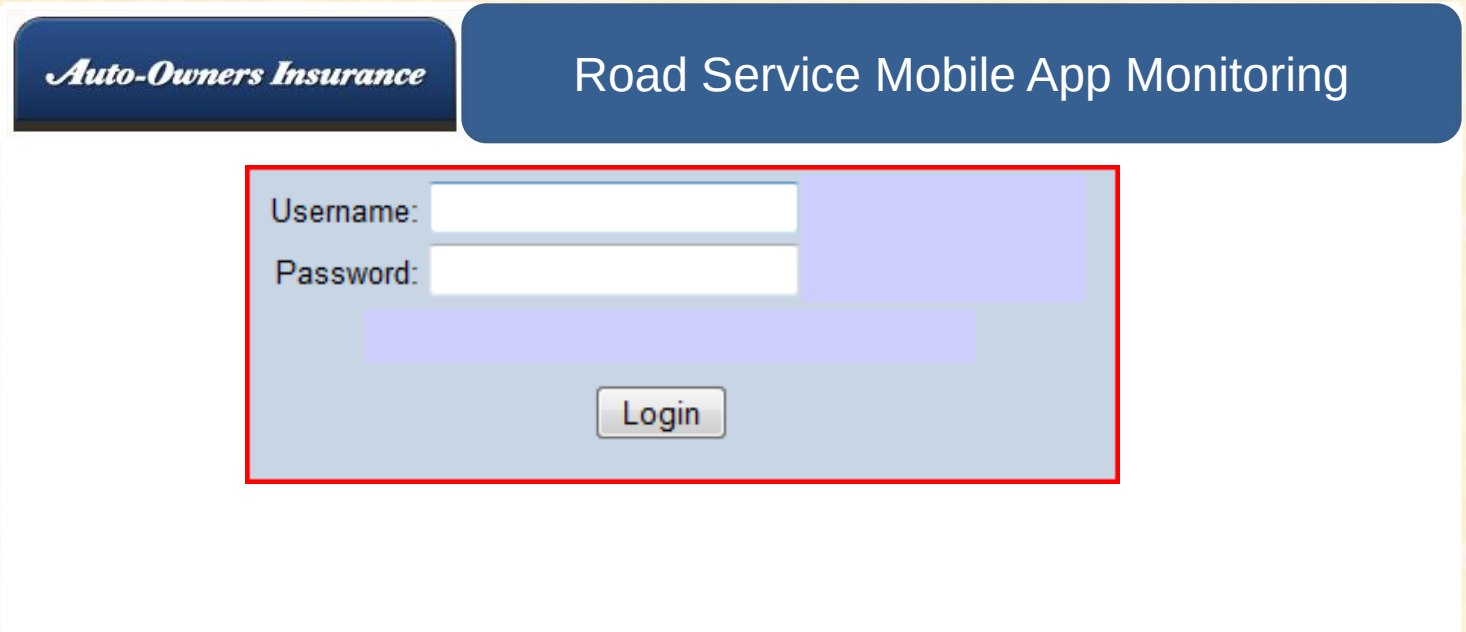
Screen Mockups

Nearby Locations Screen



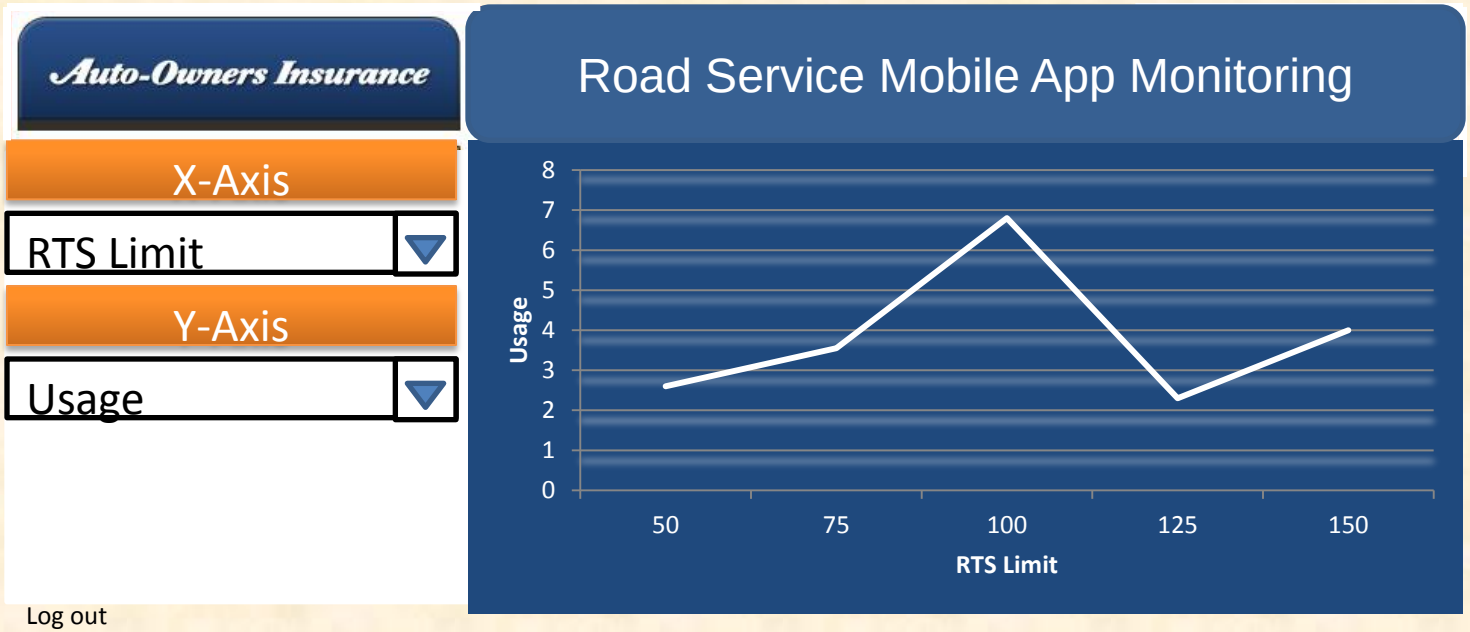
Nearby Location Map

Screen Mockups



Website Login Screen

Screen Mockups

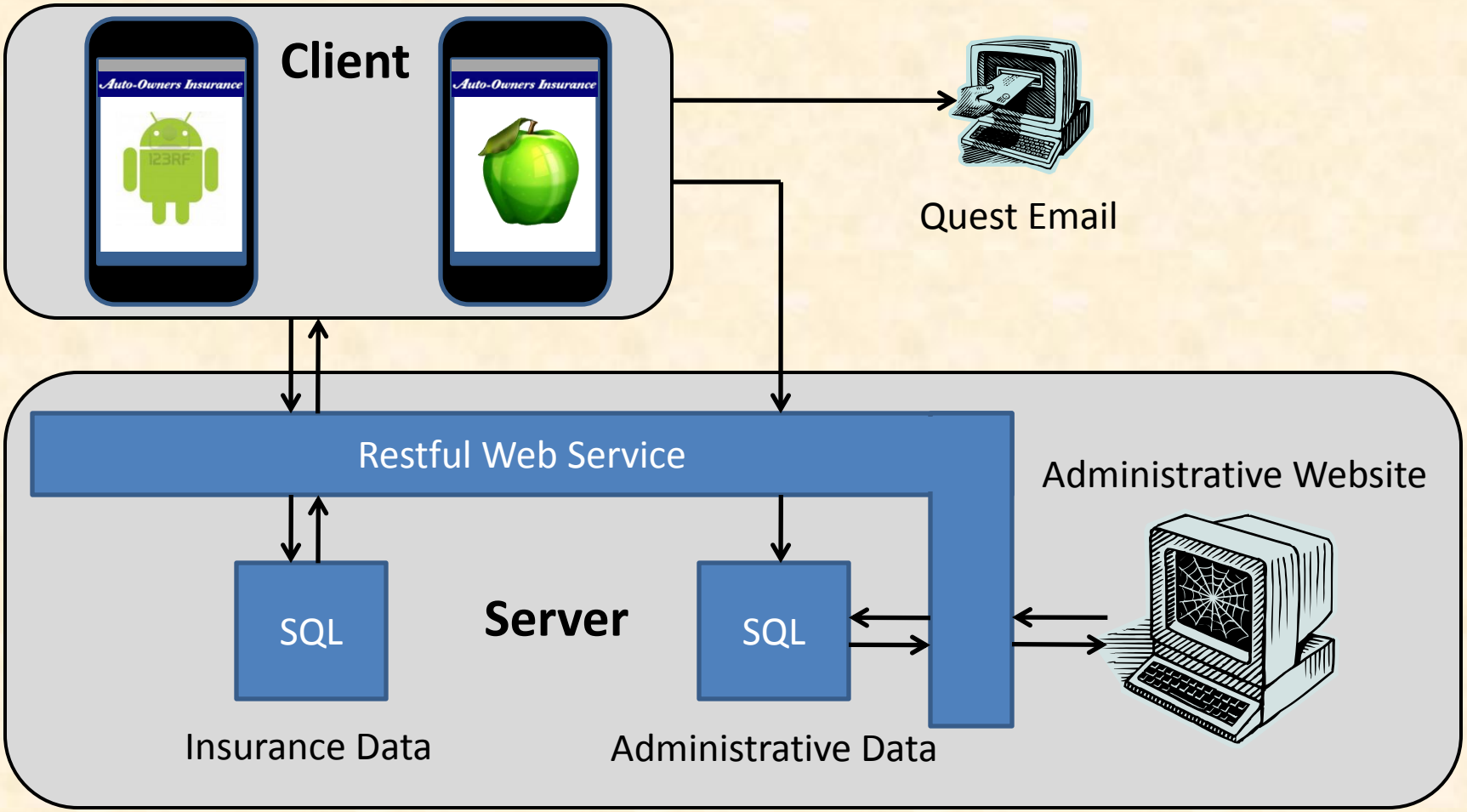


Website Graph Screen

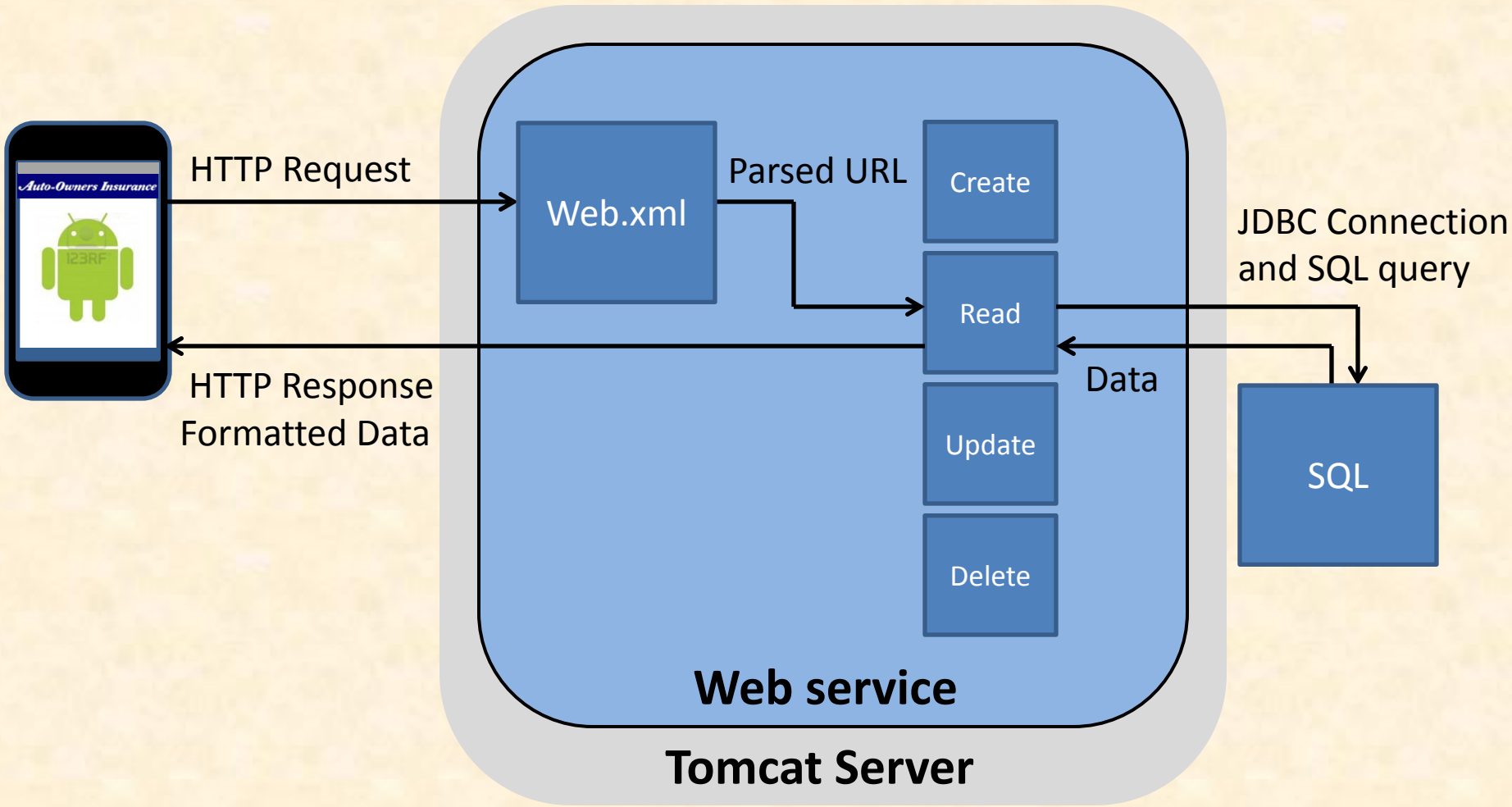
Technical Specifications

- MySQL database, tomcat server
- Calls to web service to:
  - Return insurance data
  - Push usage data (from the phone)
  - Return usage data (to the website)
- Libraries for reverse-geocoding and interfacing with Google Maps

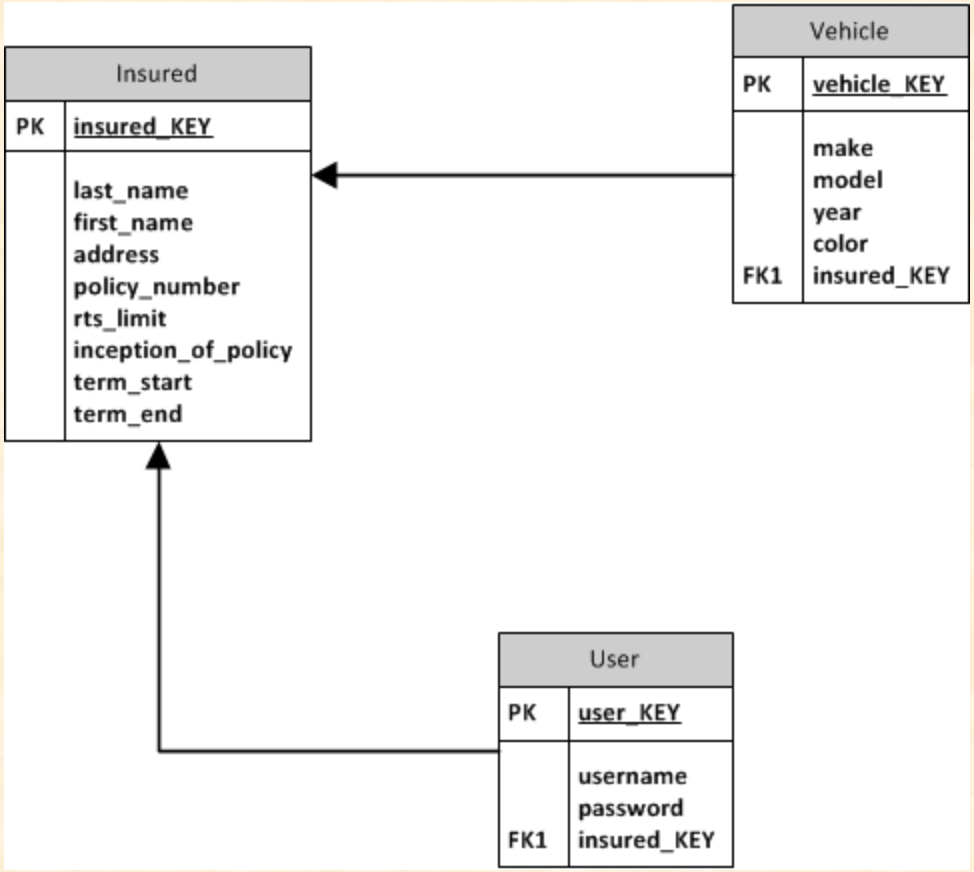
System Architecture



Web service Architecture



Database Schema



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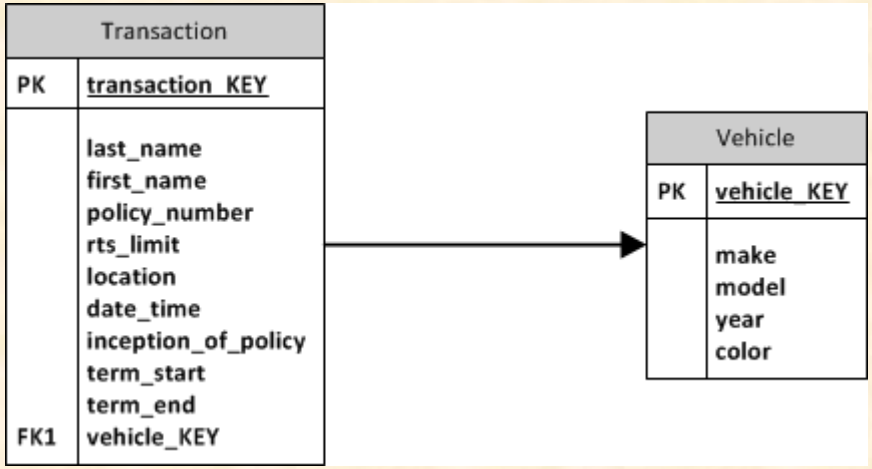

System Components

- Hardware Platforms
  - Android
  - iPhone
- Software Platforms / Technologies
  - MySQL
  - Eclipse, Tomcat, JDBC, ANT
  - Java
  - Xcode
  - ASP.NET, MVC 3

Testing

- Website
  - Builds and unit tests triggered after every check in
- Unit Testing
  - Create a test for each feature as it is developed
- Testing for memory leaks

Risks

Risks

- Database Communication
  - need to connect applications and website
  - Working web service
- GPS to Road
  - How do we translate a GPS coordinate to a road and milemarker, or an address
  - Existing apps have the capability, reverse-geocoding
- Administrative Tools
  - Provide some sort of graphing for stored usage data
  - Researching graph methods
- Daily Database Sync
  - Want to update insurance data on phone in case accident happens outside of internet service
  - Researching existing apps, weather apps
- Finding nearby points of interest
  - Find restaurants, hotels, service centers
  - Researching existing apps