MICHIGAN STATE UNIVERSITY

Project Plan

MyKey Report Card

The Capstone Experience

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From Students…
…to Professionals

Project Overview

- Driving habits report card displayed online and also e-mailed at user specified intervals
- Centralized website displays driving reports
- Warning messages via SMS, E-mail, Twitter
- Android interface displays real time data and uploads statistics
- Website allows a user to track multiple cars and drivers

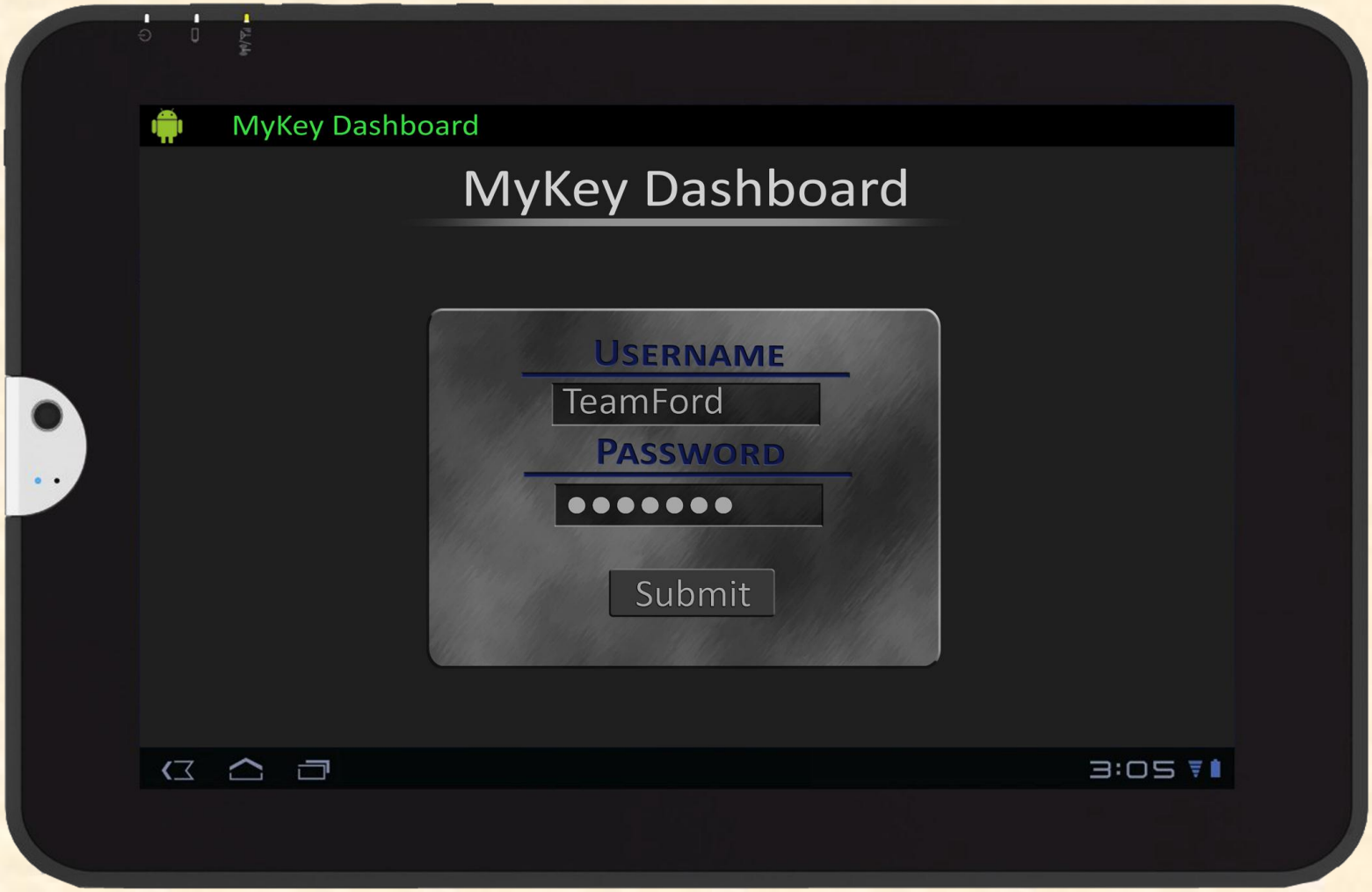
Functional Specifications

- MyKey Dashboard (Android Application)
  - Displays data on an Android device that is attached to a CAN Bus translator
  - Continuously uploads data to a remote database
- MyKey Report Card (Web Application)
  - Remotely view archived and real-time customized report cards
  - Sends notifications in the event of user defined emergencies
  - Sends report cards via e-mail in user defined intervals

Design Specifications

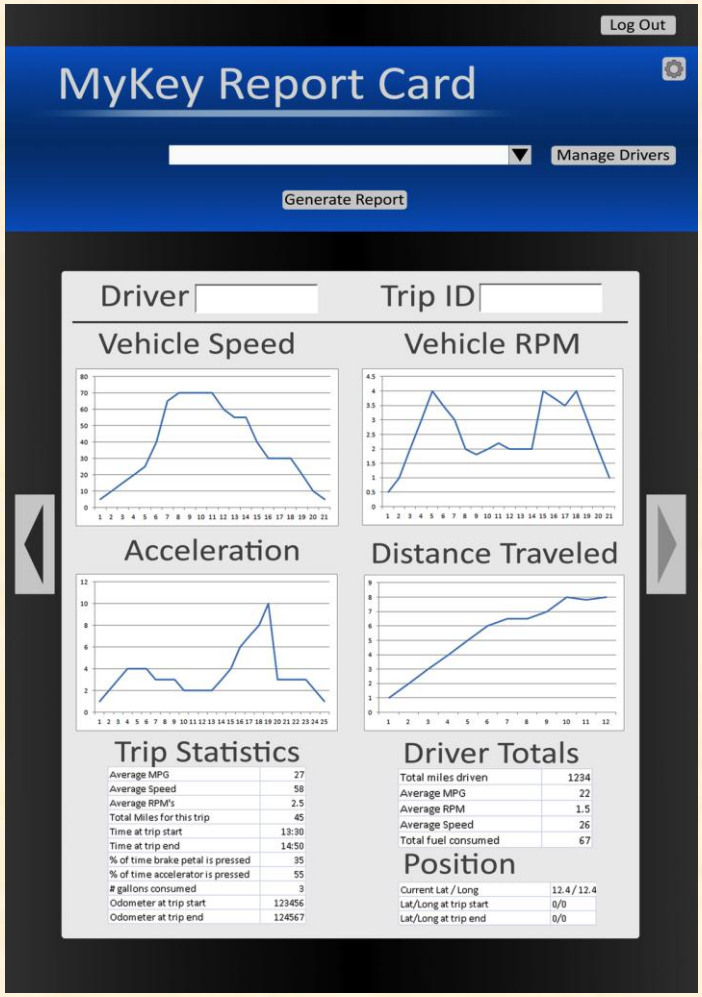
- MyKey Dashboard
  - Login to begin uploading data to the report card server
  - View real-time virtual instrument panel
- MyKey Report Card
  - Add multiple drivers and track them simultaneously
  - Choose from a variety of driver statistics to report
  - Schedule e-mail delivery of report cards
  - Select notifications to be received via Text/Twitter/E-mail based on driver performance

Screen Mockup: MyKey Dashboard



Screen Mockup: MyKey Dashboard

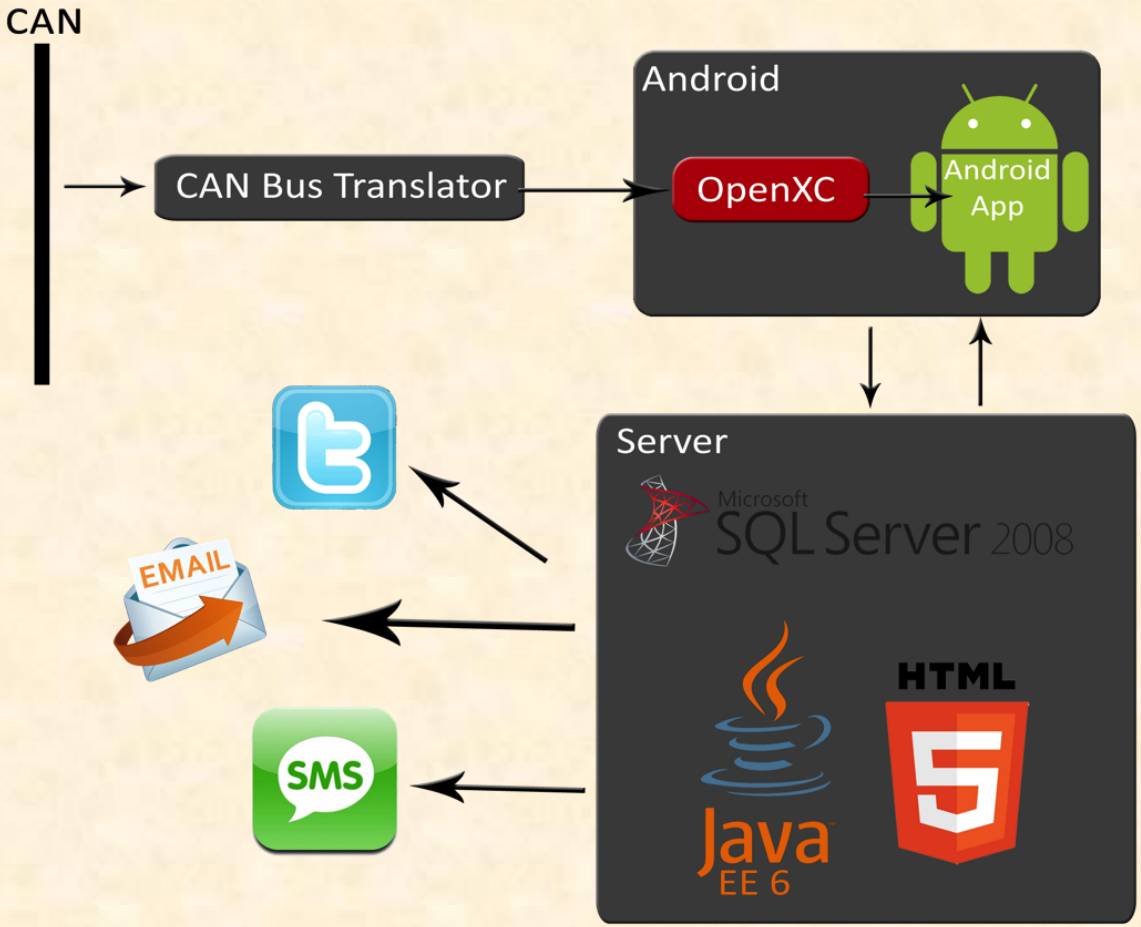
Screen Mockup: MyKey Report Card



Technical Specifications

- Android device interfaces with CAN Bus Translator to deliver data from vehicle
- Android device uploads data to Microsoft SQL database used for website and emergency notifications
- Website will have a Java EE 6 back end and HTML5 front end.

System Architecture



System Components

- Hardware Platforms
  - OpenXC Can Bus Translator
  - Motorola Xoom running Android 4.0.4
- Software Platforms / Technologies
  - Eclipse IDE for Java EE Developers
  - Maven
  - Android APIs
  - OpenXC API
  - Twitter API
  - HTML5 Frontend / Java EE 6 Backend
  - MS SQL Server Database

Testing

- We plan on using the testing mode on the CAN Bus translator as well as uploading formatted data manually
- We are testing the Android app on a Motorola Xoom but also will emulate other Android devices in order to format the UI for phones

Risks

Risks

- Risk 1
  - Coding a graphical website frontend in HTML5
  - Will be mitigated by developing sample html pages and advancing the design from there.
- Risk 2
  - Sending messages from Android/HTML5 via text messaging/e-mail/Twitter
  - Mitigated through the utilization of online documentation and studying example programs
- Risk 3
  - Connecting the Web Application with the database
  - Need to use web application as a conduit between the Android device and the database. Mitigated through use of online documentation.
- Risk 4
  - Sending data from an Android device to a Java EE 6 Server
  - Mitigated through the utilization of online documentation and studying example programs