Project Plan
Customer App Review Dashboard

The Capstone Experience

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Functional Specifications

• Aggregate and analyze app review sentiment
• Present sentiment data in multiple formats
  ▪ Scheduled Slack Bot reports
  ▪ Web interface with a variety of views
• Compare multiple apps and versions
• Identify repeatedly mentioned app features
Design Specifications

• Web dashboard
  ▪ Configurable interface allows for viewing statistics of a single app or comparing multiple apps/versions
  ▪ Includes administrative portal for configuring both web interface and Slack Bot

• Slack Bot
  ▪ Automatically outputs app sentiment report on a dedicated channel
  ▪ May be explicitly summoned
Screen Mockup: Single App Dashboard

Sentiment Analysis Dashboard

App Name: Ford Pass (Google Play)
Version: Latest
Dates: 9/1/2018 to 9/10/2018

OVERALL SENTIMENT
- Very Positive (xx%)
- Positive (xx%)
- Neutral (xx%)
- Negative (xx%)
- Very Negative (xx%)

TOP KEYWORDS
Positive Reviews
1. xx% of positive reviews
2. xx% of positive reviews
3. xx% of positive reviews
4. xx% of positive reviews

Negative Reviews
1. xx% of negative reviews
2. xx% of negative reviews
3. xx% of negative reviews
4. xx% of negative reviews

SENTIMENT OVER TIME

% Positive Sentiment
% Negative Sentiment

Sept 1  Sept 2  Sept 3  Sept 4  Sept 5  Sept 6  Sept 7  Sept 8  Sept 9  Sept 10
Screen Mockup: App Comparison Dashboard
Screen Mockup: Settings Portal

Sentiment Analysis Dashboard

Settings and Administration

App Management

<table>
<thead>
<tr>
<th>Name</th>
<th>Store</th>
<th>App ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FordPass</td>
<td>App Store</td>
<td>com.ford.fordpass</td>
</tr>
<tr>
<td>FordPass</td>
<td>Google Play</td>
<td>com.ford.fordpass</td>
</tr>
<tr>
<td>Ford Play</td>
<td>Google Play</td>
<td>com.ford.fordplay</td>
</tr>
</tbody>
</table>

Scraper Settings

<table>
<thead>
<tr>
<th>App Store Polling Interval</th>
<th>mins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google Play Polling Interval</td>
<td>mins</td>
</tr>
</tbody>
</table>

Save

Slack Settings

<table>
<thead>
<tr>
<th>Posting Channel</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Posting Interval</td>
<td>mins</td>
</tr>
</tbody>
</table>

Save
Screen Mockup: Slack Bot Output

**SENTIMENT REPORT:**

In the last week we've seen 12 new Reviews on the "Ford Remote Access" App!
Average sentiment rating of 0.9643 - positive (+0.013 from last week)

Of the 12 Reviews:
- 2 were very positive!
- 5 were positive!
- 3 were neutral  1 was negative  1 was very negative

Top 5 keywords in Positive reviews:
1. Ford
2. fast
3. start
4. system
5. great

Top 5 keywords in Negative reviews:
1. update
2. installed
3. bug
4. errors
5. timer
Technical Specifications

• Backend
  ▪ Java/Spring API
  ▪ Node.js app store scraping module
  ▪ Python NLTK sentiment analysis module

• Frontend
  ▪ Angular web interface
  ▪ Slack API bot
System Architecture

- Config DB
- Reviews DB
- Amazon DynamoDB

**Backend**
- Main API Module
  - Spring
  - Python
- NLP API Module
  - Node
- Reviews API Module

**Serverless**
- AWS Lambda

**Frontend**
- Admin Portal
- Sentiment Dashboard
- Angular
- Amazon S3
- Slack
System Components

• Hardware Platforms
  ▪ AWS Lambda
  ▪ Amazon DynamoDB
  ▪ Amazon S3
System Components

• Software Platforms / Technologies
  - Spring Cloud Function
  - Python Natural Language Toolkit
  - Node.js
  - Angular
  - Slack API
  - Serverless Framework
  - Travis CI
Risks

• Risk 1
  ▪ Description: Inconsistent review data between stores and scraping tools
  ▪ Mitigation: Develop a UI and DB schema that can handle varied information or implement functionality to scraper(s)

• Risk 2
  ▪ Description: Web dashboard user authentication
  ▪ Mitigation: Use a flexible authentication platform that integrates with LDAP (currently looking into Amazon Cognito)

• Risk 3
  ▪ Description: Integrating multiple languages into one backend API
  ▪ Mitigation: Use API Gateway and Lambda to allow isolated modules to communicate

• Risk 4
  ▪ Description: Spring performance with Lambda
  ▪ Mitigation: Increase allocated Lambda resources and test AWS Labs’s suggested performance fixes
Questions?