

MICHIGAN STATE

U N I V E R S I T Y

Project Plan

Customer App Review Dashboard

The Capstone Experience

Team Ford

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

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

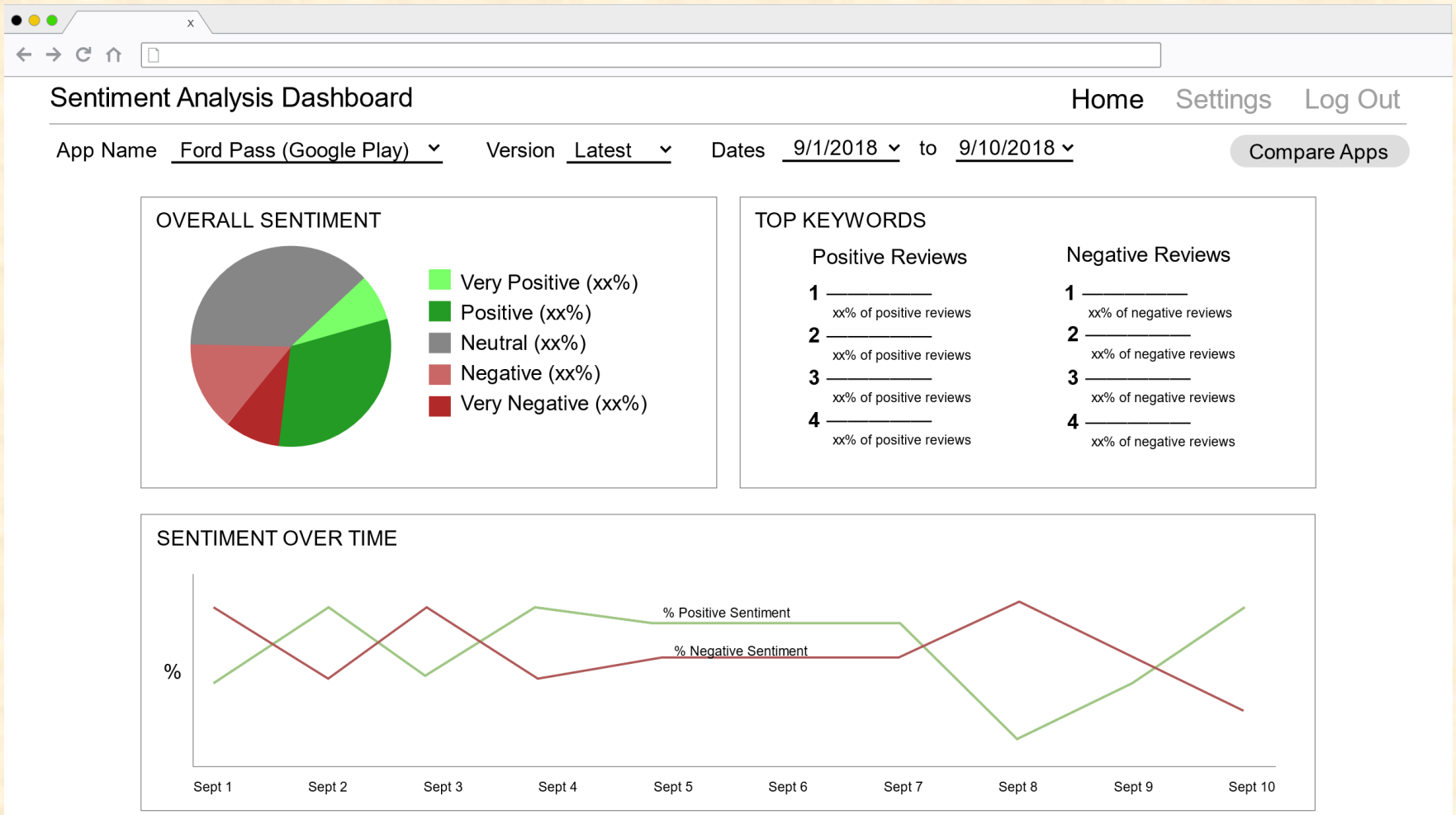


Design Specifications

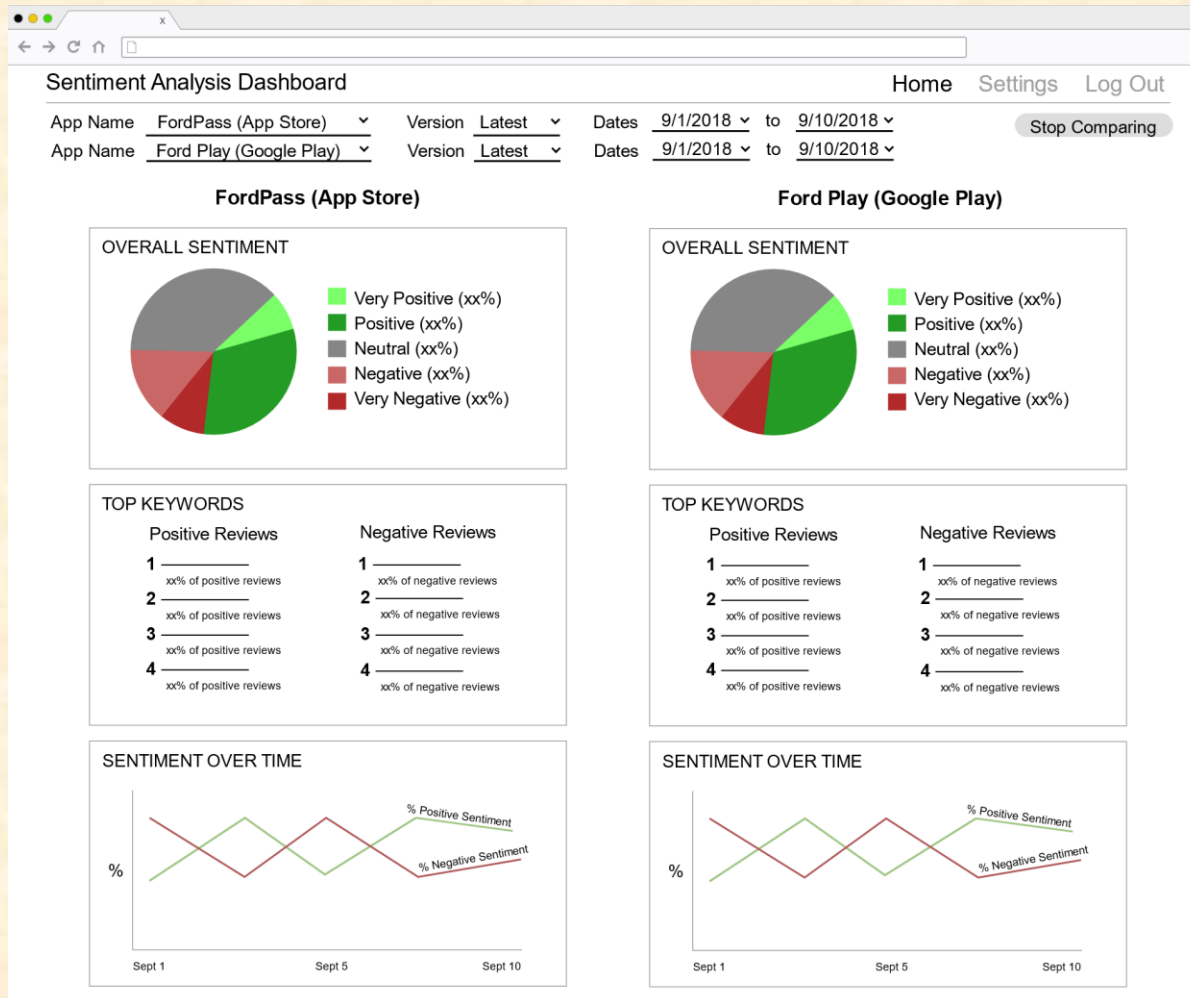
- Web dashboard
 - Configurable interface allows for viewing statistics of a single app or comparing multiple apps/versions
 - Includes administrative portal for configuring both web interface and Slack Bot
- Slack Bot
 - Automatically outputs app sentiment report on a dedicated channel
 - May be explicitly summoned



Screen Mockup: Single App Dashboard



Screen Mockup: App Comparison Dashboard



Screen Mockup: Settings Portal

The screenshot shows a web browser window with a single tab. The address bar is empty. The page title is 'Sentiment Analysis Dashboard'. In the top right corner, there are navigation links for 'Home', 'Settings', and 'Log Out'. The main content area is titled 'Settings and Administration' and is divided into three sections: 'App Management', 'Scraper Settings', and 'Slack Settings'. The 'App Management' section has a '+ App' button and a table of installed apps. The 'Scraper Settings' section has two input fields for polling intervals and a 'Save' button. The 'Slack Settings' section has two input fields and a 'Save' button.

Sentiment Analysis Dashboard Home Settings Log Out

Settings and Administration

App Management + App

Name	Store	App ID	
FordPass	App Store	com.ford.fordpass	✕
FordPass	Google Play	com.ford.fordpass	✕
Ford Play	Google Play	com.ford.fordplay	✕

Scraper Settings

App Store Polling Interval mins

Google Play Polling Interval mins

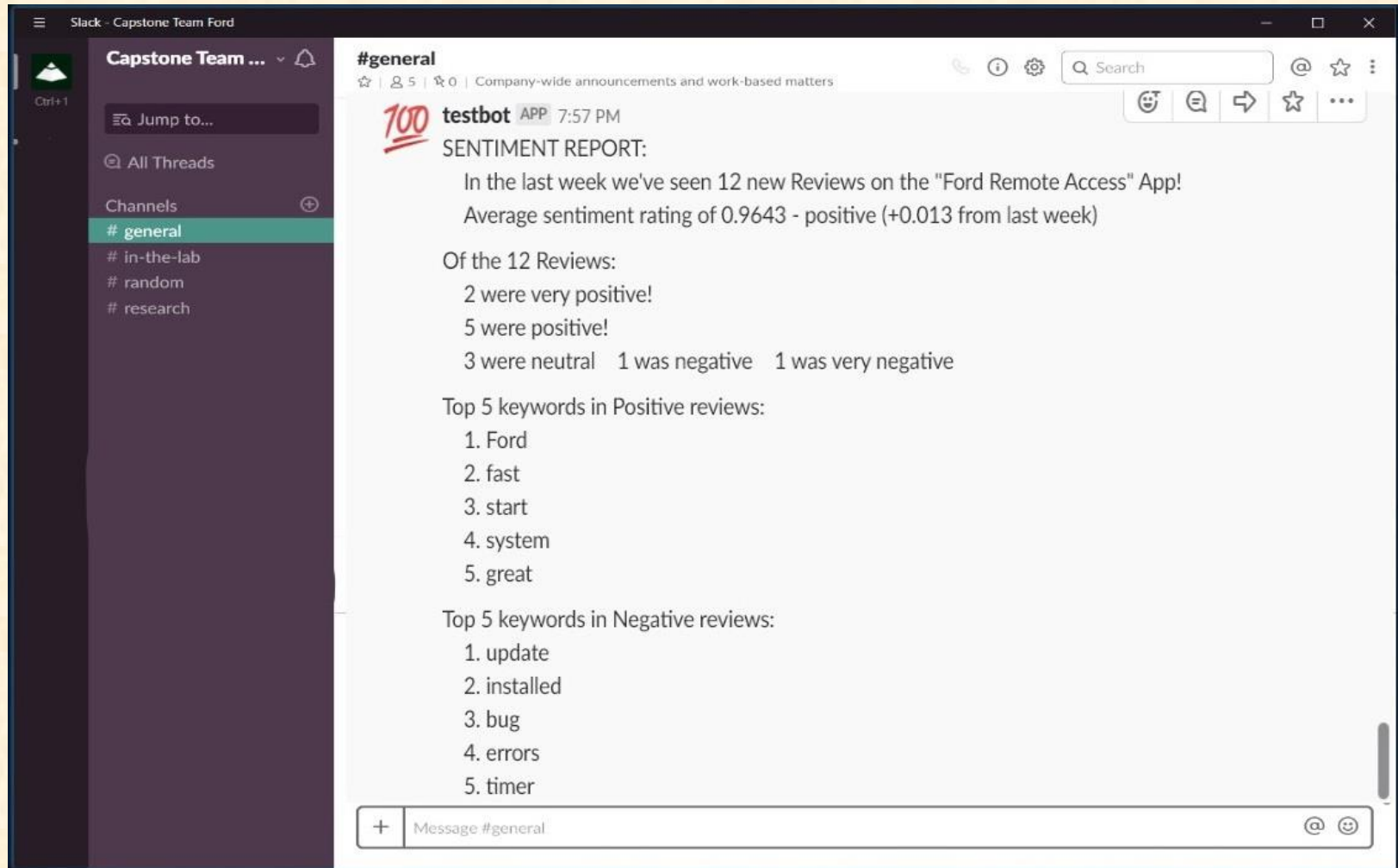
Slack Settings

Posting Channel

Posting Interval mins



Screen Mockup: Slack Bot Output



The screenshot shows a Slack interface for a workspace named "Capstone Team Ford". The main channel is "#general". A bot named "testbot" (with a profile picture of a red "100" logo) has sent a message at 7:57 PM. The message is a "SENTIMENT REPORT" for the "Ford Remote Access" App. The report includes the following information:

- 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

The Slack interface also shows a sidebar with channel navigation, including "All Threads" and a list of channels: "# general", "# in-the-lab", "# random", and "# research". The bottom of the screen shows a message input field with a plus sign on the left and a search icon on the right.

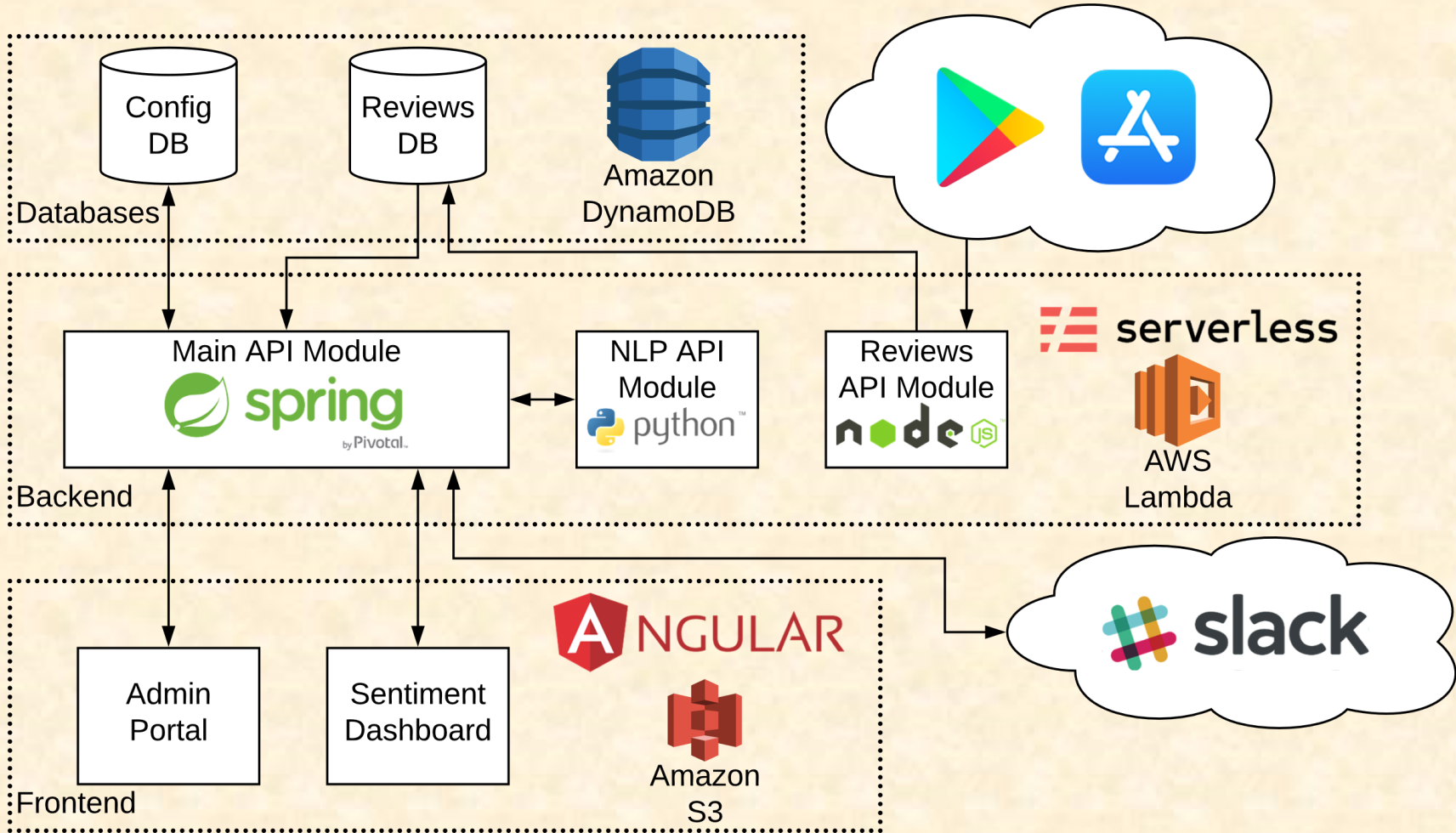


Technical Specifications

- Backend
 - Java/Spring API
 - Node.js app store scraping module
 - Python NLTK sentiment analysis module
- Frontend
 - Angular web interface
 - Slack API bot



System Architecture



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?

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