MICHIGAN STATE UNIVERSITY

Project Plan

Text Classification of Seller Forums Content

The Capstone Experience

Team Amazon

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From Students…
…to Professionals

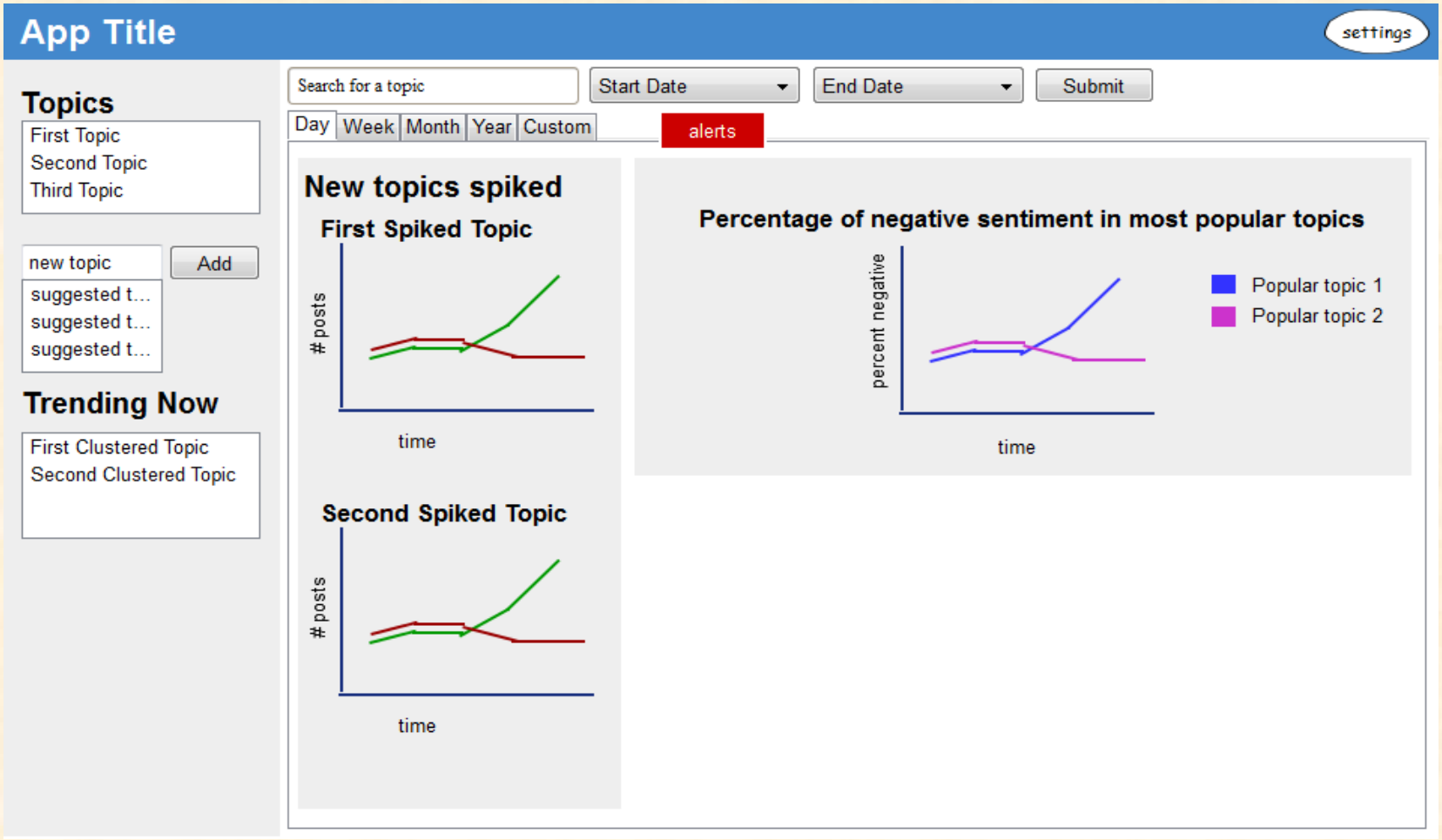
Functional Specifications

- Unlock the value of 3rd party Seller Forums
- Data Organization and Analysis
  - Classification
  - Clustering
  - Sentiment
- Dashboard
  - Graphs- Trending Topics
- Notifications

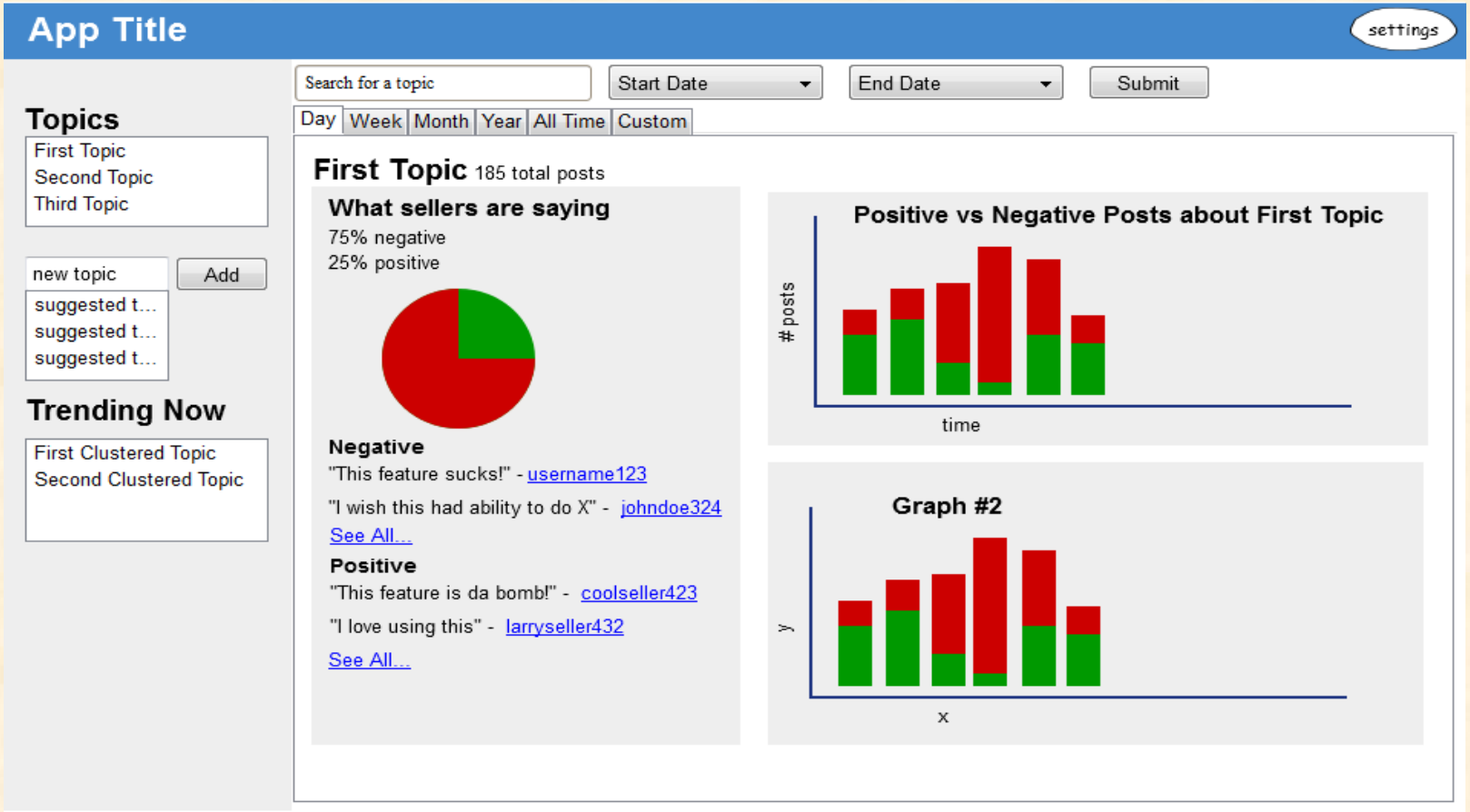
Design Specifications

- Designed for Amazon Employees
  - To visualize the data analysis
- General Analytics
  - The entire seller forums data
- Specific Topic Analytics
  - Each specific topic can be analyzed alone
- Settings Page
  - Add alert instances, add, edit and delete topics

Screen Mockups: *General Analytics*



Screen Mockups: *Specific Topic Analysis*

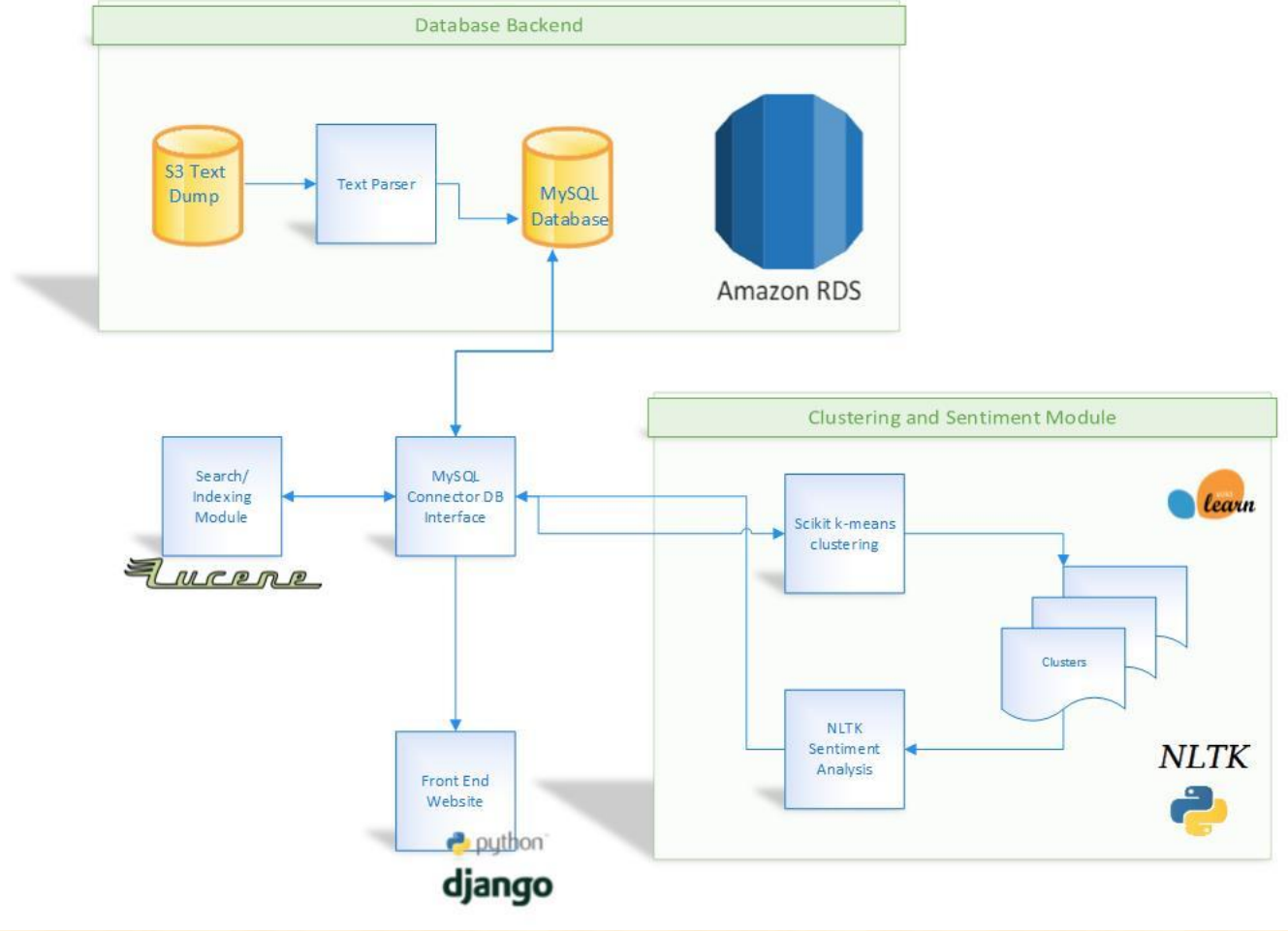


Screen Mockups: *Settings*

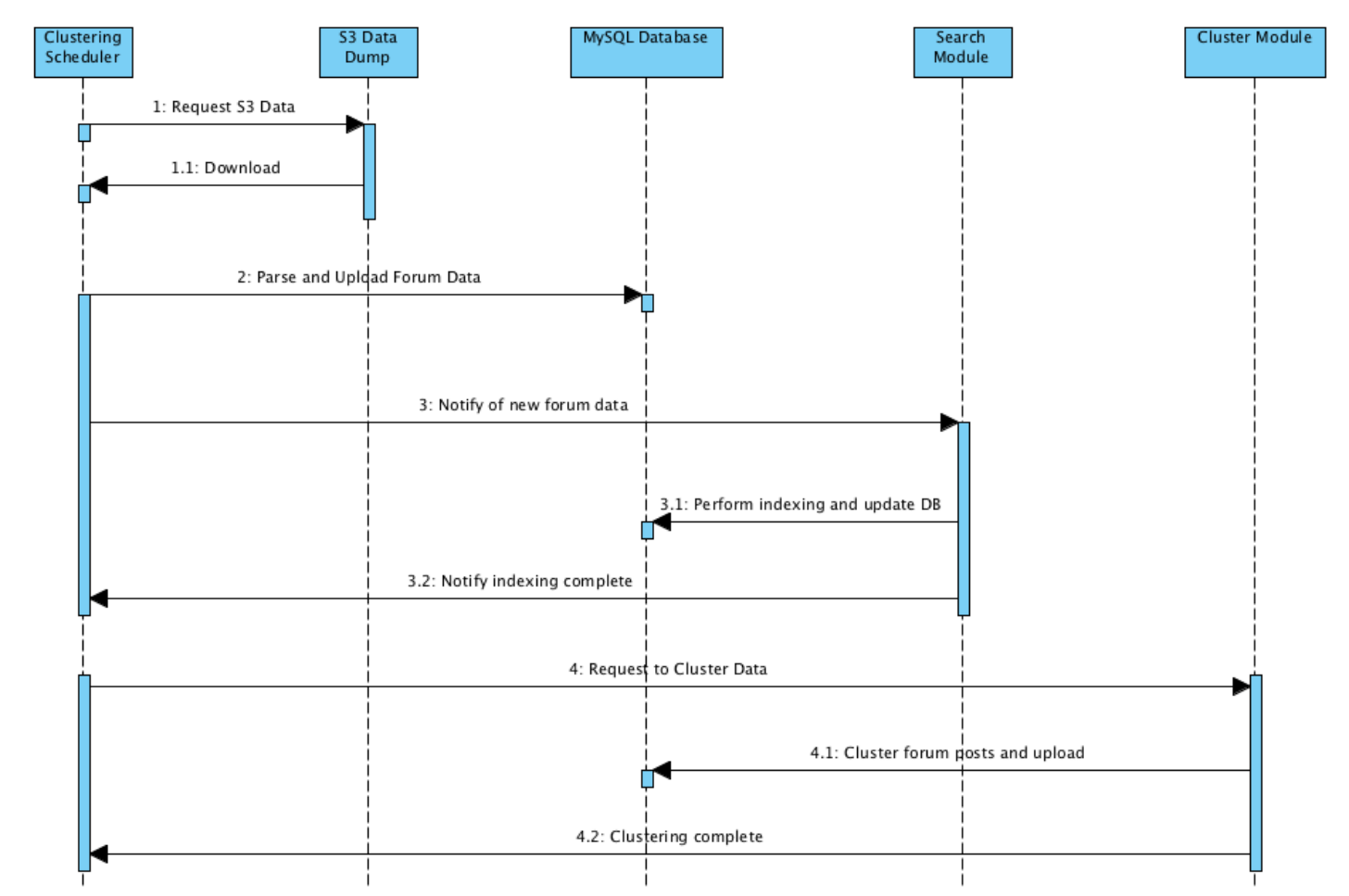
Technical Specifications

- Consume Seller Forums Content in AWS
  - From Text File to SQL DB
- Data Analysis
  - Clustering and Sentiment Module
  - Search Module
- Dashboard
  - Create reports/graphs of forums volume by topics and terms over time
  - Store trending topics

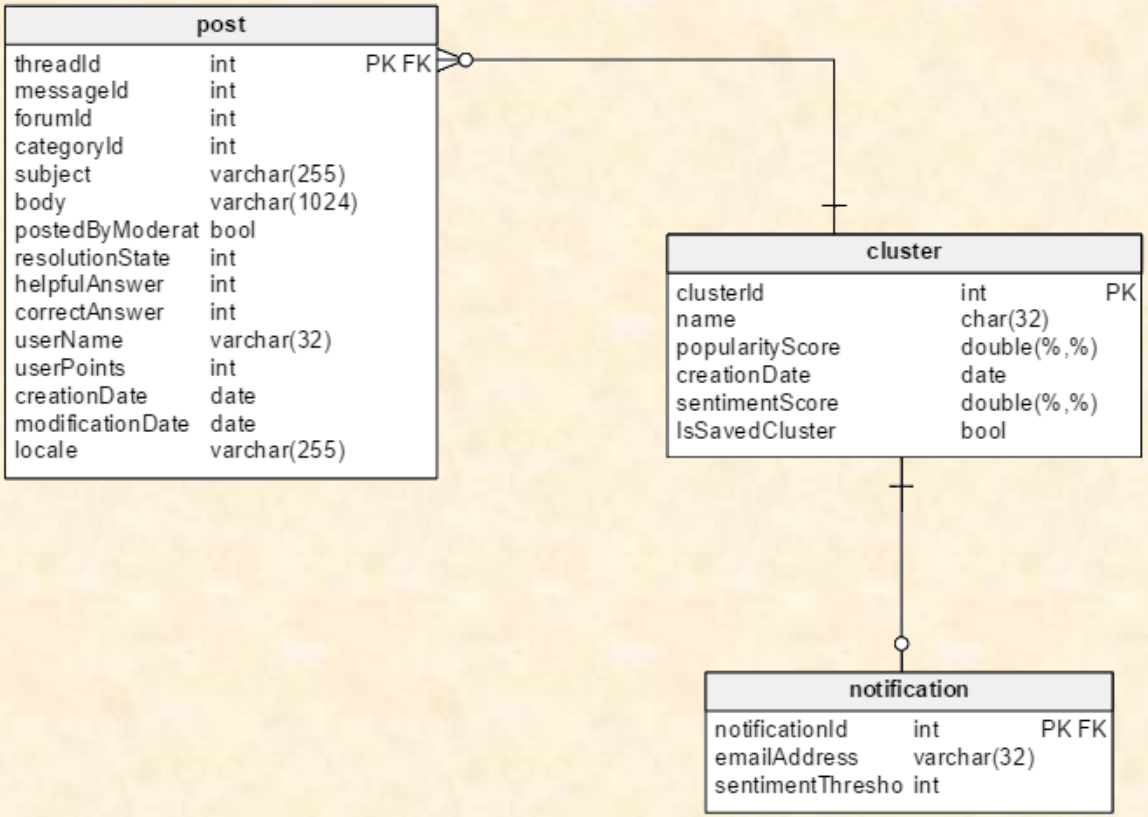
System Architecture



System Arch: *Clustering Schedule*



System Arch: *Database Schema*



System Components

- Hardware Platforms
  - Amazon Web Services
    - AWS RDS Relational Database
    - AWS Elastic Beanstalk Web Hosting

System Components - continued

- Software Platforms / Technologies
  - Python3 Frontend and Backend
  - Django Web Application
  - NLTK + SciKit Natural Language Processing
  - PyLucene Search
  - Python MySQL Connector Database Interface

Testing

- Nose Unit Testing – “Batteries Included”
  - Automatically collects and runs tests
  - Provides coverage information
  - Supports plugins for code profiling
- AWS CodePipeline Continuous Integration
  - Once it launches
  - Backup plan: Jenkins

Risks

- Unfamiliarity with Technologies
  - None of us have used Lucene, SciKit or NLTK
  - Mitigation: Set up test environment and test unfamiliar technologies ASAP

- Feature Creep
  - Ongoing expansion or addition of new features in our project
  - Mitigation: Identify project features and capabilities early

Risks - continued

- Machine Learning
  - Is a tricky topic, can get challenging
  - Mitigation: Use existing libraries rather than developing our own code
- Scalability
  - Our project must be scalable
  - Mitigation: Confirm that the technologies we use are scalable