System Requirements Document
Team Jazz Men

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Contents

1 Revision History

All major edits to this document will be recorded in the table below.

Table 1: Revision History

Description of Changes	**Author**	**Date**
Initial draft of document with new idea	Jasman	December 15, 2016
Edited Project Issues Section	Meet Pandya	January 8, 2017
Edited the document	Jesse Truong	January 9, 2017
Edited the document	Jasman Gill	April 6, 2017
Compiled Final Draft	Anagh Goswami	April 9, 2017

2 Project Drivers

2.1 Purpose of Project

2.1.a Project Background

Social media is a place for small talk, discussion and sharing of ideas. Social media includes many different platforms used by hundreds of millions of people across the globe. Big organizations can utilize these platforms in order to imporove their own reputations as well as figuring out different ways to increase their customer base. Using social media, these companies can discover what the public eye thinks of them.

2.1.b Goal of the project

The purpose of Sentments Analysis with Twitter is to provide a way for business analyst to see what is being said about a company on social media. This project also provides benchmark analysis which would help business' compare and contrast two potential companies and why one is doing good in the public eye and the other not so much.

2.2 Stakeholders

The projects current stakeholders are the following:

- Team Jazz Men
- Dr. Wenbo (The project supervisor)
- Dynamic business'

2.2.a The Customer

The customers for this project include various companies or analysts that wish to utilize the software in order to receive dynamic feedback from the community for both public and private businesses. The customer will use the software to analyze and make decisions on how they will operate according to the reactions of the community to different aspects of a company.

2.2.b The Hands-On Users of the Product

Analysts will be the hands-on users for the application. They will all have the necessary knowledge to be able to use the information given to them.

2.2.c Personas

Consider Bob Mellow, an analyst working at FootLocker. Bob wants to study how people see the company through the eyes of the public and how it may be improved. Bob knows how to conduct an analysis of the publics opinion, but it will take way too long to collect an accurate dyamic data set. Bob can now input the name of the company he wishes to conduct an analysis on and generate a report with various filters. He will then be presented with results displayed on a webpage for him to examine which could have taken weeks otherwise.

3 Project Constraints

3.1 Mandated Constraints

There are global constraints put in place by the existing software, the stakeholders, and the structure of the course (Computer Science 4ZP6). The project must be built upon the existing applications being used to aid in the generation of the analysis (Twitter and IBM Watson Sentiment). The final code should be able to display any current data extracted from the prior on a web application. The web application should be able to correctly display on any web browser. Finally, the final product must be completed by the end of April, 2017. If the global constraints are not met, then the final product is not acceptable.

3.2 Naming Conventions & Terminology

Throughout the document, "the web application", "the product", "the project", and/or "the software" all refer to the end web analysis product tool being developed.

Table 2: Glossary

Term	**Description**
Team Jazzmen	Group currently assigned to the planning and development of the proposed application
Analyst	The business analyst who will primarily be using the developed software
Web application, product, project, software	Refers to the end web analysis product tool developed

3.3 Relevant Facts and Assumptions

3.3.a Facts

- Run the app through a web browser
- Twitter API to collect information
- IBM watson API to calculate feedback rating

3.3.b Assumptions

- The user will have a basic understanding of analysis and web tools

4 Requirements

4.1 The Scope of the Work

4.1.a The Current Situation

Currently analysts are tasked with weeks of data preparation and consultation of data which is very time consuming and tedious.

4.1.b The Context of the Work

See Figure below

4.2 Business Data Model & Data Dictionary

The product displays results dynamically. In order to do sentiments analysis, the system does it dynamically by running throught the APIs. The data that will be stored in a database is for historical comparison purposes.

4.3 Functional Requirements

Req. #: 1 **Description**: Twitter API is able to parse through applicable keyword searches **Rationale**: Design requirement, will ensure all available tweets in a specified time zone are obtained **Fit Criterion**: Running the API with a keyword should dynamically retrieve and store tweets for further analysis **Priority**: Very High **History**: Created January 7, 2017

Req. #: 2

Description: IBM Watson API is able to parse through twitter messages and apply an accurate score.

Rationale: Need to ensure that all retrieved tweets are assigned a score and that it accurately corresponds to the message.

Fit Criterion: Running the API should assign a score to each tweet that was found through the search.

Priority: Very High **History**: Created January 7, 2017

Req. #: 3

Description: Searching for keywords using various filters displays results

Rationale: All applicable tweets will be displayed when searched with associated scores

Fit Criterion: Searching applicable keyword will display for the user a page of pulled information with score ratings.

Priority: Medium **History**: Created January 7, 2017

Req. #: 4

Description: Account registration.

Rationale: To individualize a user's experience and store previous searches.

Fit Criterion: A registered user can use the application and see previous searches.

Priority: Medium **History**: Created April 6, 2017

Req. #: 5

Description: User login.

Rationale: All registered users should be able to securely login.

Fit Criterion: After entering the correct username and password, the user should be able to complete the login process. If any inputs are incorrect, they are prompted to try again.

Priority: Medium **History**: Created April 6, 2017

Req. #: 6

Description: User logout.

Rationale: All logged in users should be abe to securely logout.

Fit Criterion: After logging out, the user must login again if they wish to see personal information.

Priority: Medium **History**: Created April 6, 2017

Req. #: 7

Description: Main page menu traversing.

Rationale: Choosing an appropriate sub menu should traverse the page to appropriate sub section.

Fit Criterion: User is taken to appropriate sub section of the main page.

Priority: Medium **History**: Created April 6, 2017

Req. #: 8

Description: Demo selector.

Rationale: To give the user an idea of how queries behave once searched.

Fit Criterion: User is shown an analysis table of tweets based on selected demo.

Priority: Medium **History**: Created April 6, 2017

Req. #: 9

Description: Table sorter.

Rationale: To give the user some flexibility in terms of filtering displayed data.

Fit Criterion: User is able to sort the table from lowest to highest value or vise verse when appropriate table header is clicked.

Priority: Medium **History**: Created April 6, 2017

Req. #: 10

Description: Custom search.

Rationale: Allow the user to analyze any keyword they wish to search.

Fit Criterion: User enters a keyword and analysis tables are generated for and displayed to the user.

Priority: Medium **History**: Created April 6, 2017

Req. #: 11

Description: Result accuracy.

Rationale: Ensure the data is correct.

Fit Criterion: All pulled tweets must incorporate the searched keyword and be associated with an appropriate score.

Priority: Medium **History**: Created April 6, 2017

Req. #: 12

Description: Bubbles higlight the most positive and negative tweets

Rationale: Every table must have bubbles highlighting the most positive and negative tweets.

Fit Criterion: Low

Priority: Created April 9, 2017 **History**:

Req. #: 13

Description: Users have the ability to display the whole table or just extremities

Rationale: Users can choose how the data are displayed to them with either whole tables or just the most positive and negative tweets.

Fit Criterion: Low

Priority: Created April 9, 2017 **History**:

4.4 Look and Feel Requirements

4.4.a Style Requirements

Req. #: 14

Description: All pages on the web application should follow a uniform theme of light blue and white.

Rationale: To have a uniform look and feel to represent consistency

Fit Criterion: Running the application should be a smooth process without any visual inconsistencies.

Priority: Medium **History**: Created January 7, 2017

4.5 Usability and Humanity Requirements

4.5.a Ease of Use Requirements

NA – There are no Usability and Humanity Requirements

4.5.b Personalization and Internationalization Requirements

Req. #: 15

Description: The user will be able to personalize their request in terms of score and keyword.

Rationale: The web app deliver filters in a dynamic setting.

Fit Criterion: A user who is able to sort a given score rating and keyword search should be able to view messages and scores filtered.

Priority: Medium **History**: Created January 7, 2017

4.5.c Learning Requirements

NA – The software will not have any specific learning requirements other then basic use of web applications.

4.5.d Understandability and Politeness Requirements

NA

4.5.e Accessibility Requirements

NA – The software will not provide any specific support for accessibility.

4.6 Performance Requirements

4.6.a Speed and Latency Requirements

Req. #: 16

Description: The time between a search and result should be almost instantaneous only deviating depending on the users internet connection

Rationale: The web app does not involve heavy computational effort, and should evaluate in timely fashion thus wise.

Fit Criterion: Searching a keyword with applicable filters will deliver a result page in a set time frame unless affected by issues on the users side.

Priority: Low **History**: Created January 7, 2017

4.6.b Safety Critical Requirements

NA – The software is not used in safety critical environments. The web app is used by analysts to see opioniated scores on keywords.

4.6.c Precision of Accuracy Requirements

Req. #: 17

Description: Analyzed messages should include keyword searched, timeframe and score with no margin of error.

Rationale: If result page is inaccurate their is no validity of using the product.

Fit Criterion: The results of the filtered search should be completely accurate to what was filtered by the user on the previous page.

Priority: Very High **History**: Created January 7, 2017

4.6.d Reliability and Availability Requirements

Req. #: 18

Description: The product should always be available on the web. If not an applicable message should be displayed on the domain explaining the status of the page.

Rationale: If the product is not available on the web app, it is not able to be used by the customer.

Fit Criterion: If the web app is down for maintenance an applicable message should be displayed on the domain listing out that it is infact down for maintenance and how long it will approxiamately be down for.

Priority: High **History**: Created January 7, 2017

4.6.e Robustness or Fault-Tolerance Requirements

Req. #: 19

Description: If an error occurs, the product will throw an exception with a description why the exception happened

Rationale: Throwing an exception as a safeguard in case of an error

Fit Criterion: When an error occurs an exception is thrown and the user it notified about it.

Priority: Medium **History**: Created January 7 2017

4.6.f Capacity Requirements

NA – Not storing collected data, dynamically displaying.

4.6.g Scalability Requirements

NA

4.6.h Longevity Requirements

NA – The product is to be completed by April 2017.

4.7 Operational and Environmental Requirements

4.7.a Expected Physical Environment

The product shall be used by an Engineering analysts who will most likely be sitting down in a temperature controlled environment.

4.7.b Requirements for interfacing with adjacent Systems

The product will used in all web browsers that support HTML5.

4.7.c Productization Requirements

Req. #: 20

Description: The web app will be available on the world wide web to be used anywhere there is an internet connection.

Rationale: The product has to be readily available to everyone in the easiest way possible.

Fit Criterion: High majority of users should be able to easily access and use the product.

Priority: Low **History**: Created January 7, 2017

4.7.d Release Requirements

Req. #: 21

Description: New versions of the product will automatically be updated onto the web page.

Rationale: Users will not have to do anything on their end to recieve the new updates as it is a web app.

Fit Criterion: Each new update will either remove,modify or add onto the existing framework.

Priority: Medium **History**: Created January 7, 2017

4.8 Maintainability and Support Requirements

4.8.a Maintenance Requirements

The code and application will only be maintained by Team JazzMen for the foreseable future. The original developers will not be maintaining the code after the final milestone of 4ZP6.

4.8.b Supportability Requirements

There will be instructions on the web app which shortly goes into detail on how to use the app and all its available settings.

4.8.c Adaptability Requirements

The web application will be able to run on any web browser. Although it is mainly intended to be used with Google Chrome, but it is not limited to Google Chrome.

4.9 Security Requirements

4.9.a Access Requirements

Req. #: 22

Description: All users only have access to the front end system.

Rationale: Front end is all the customer needs to be able to get the most out of the product.

Fit Criterion: A user should always be able to achieve any task that is available for them to use.

Priority: High **History**: Created January 7, 2017

4.9.b Integrity Requirements

NA – Other then possible hardware and connectivity issues there should be no integrity problems.

4.9.c Privacy Requirements

NA – The privacy of the data will be managed entirely by and at the discretion of the user.

4.9.d Audit Requirements

NA – The software does not need to meet any specific audits.

4.9.e Immunity Requirements

NA – There will be no specific features to ensure immunity.

4.10 Cultural Requirements

NA – The product is intended for a small number of stakeholders. All content is objective.

4.11 Legal Requirements

4.11.a Compliance Requirements

NA – The product does not store or access any user information. It does not need to comply with any legal standards.

4.11.b Standards Requirements

NA – There are no internal standards that are required to be met by the product.

5 Project Issues

5.1 Open Issues

- Tools needed to get sentiments score
- Where to display and what to use as the platform for the Project
- What frameworks will be needed depending on the platform
- The database structures that will be used to store data
- Functionality to user group can be varied, so the product might need maintenance to fit into systems that are already implemented by the user
- Results of usability test may completely change the business model
- Scope of the project, given project deadlines
- Security and Permissions

5.2 Off-the-Shelf Solutions

5.2.a Ready-Made Products

No ready-made products exist with similar functionalities

5.2.b Reusable Components

N/A

5.2.c Products That Can Be Copied

Our product changes according to the user needs so it is a service that will be provided by the developers. Copying this service could be done only by IT Solutions for companies who have the exact expertise and project idea we have.

5.3 New Problems

5.3.a Effects on the Current Environment

N/A

5.3.b Effects on the Installed Systems

N/A

5.3.c Potential User Problems

N/A

5.3.d Limitations of the Anticipated Implementation Environment That May Inhibit the New Product

Old web browsers are usually not compatible with current programming language versions, and applications.

5.4 Tasks

5.4.a Project Planning

- Show requirements document to supervisor for critique
- Create a prototype for demo purposes
- Test and develop more features

5.4.b Planning of Development Phase

- Make a decision on whether to use relational database or a NoSQL database and then design it
- Design a target User Interface
- Design back-end of the web application
- Split application into modules and assign tasks to group members for completion

5.5 Risks

- Security issues with user accounts
- Not a huge userbase
- Additions to project, cause us to not be able to meet deadlines

5.6 Costs

- Server costs in order to go live
- Development Time costs

5.7 User Documentation and Training

5.7.a User Documentation Requirements

A user guide will be included A quick walk through will be available on the main page

5.7.b Training Requirements

No training is needed for a user

5.8 Waiting Room

5.9 Ideas for Solutions

- Bootstrap: A free open-source Framework for designing websites and web applications
- Flask: A web framework written in Python to create websites
- Twitter API: Provides programmatic access to retrieve Twitter data such as tweets
- Alchemy Language API: IBM developed language API which provides sentiments analysis