
Software Requirements Specification

For

**Web Usage
Mining to
understand
Consumer
Trends**

Version 1.0 approved

Prepared by -

Ayan Chandra

Amit Kumar

Buddhi Rohan Sai

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1.Introduction

1.1 Purpose

The purpose of this document is to build a website which will let users know the worldwide search trends, and also region-wise and even search based trends. The website will also let users know the sentiment on these trends. It will provide them with a graphical representation of the trends as well.

This document lists the specifications of the Website and is subject to changes based on user feedback and evolution of requirements.

1.2 Document Conventions

The IEEE standard formatting requirements are followed

Font Family - Times New Roman , Font size - 11

1.3 Intended Audience and Reading Suggestions

This document is intended for:

- Requirement engineers
- Designers
- Software Developers
- Testers
- Documentation Writers
- Project Managers
- Users

The SRS contains the overall description of the project, the requirements- functional and non-functional, system, security, external. It also contains the work breakdown structure.

1.4 Product Scope

The scope of this project is to enable anyone to easily analyze the current consumer trends, i.e, how people are consuming the internet, and look into people's sentiments regarding it. This is useful in knowing how the people online feel about a certain incident or a product or a company or anything which is trending.This may also help small-business owners and small-time investors to check the general sentiment and trend of their investments.

1.5 References

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. , IEEE Computer Society, 1998.

2.Overall Description

2.1 Product Perspective

This website uses sentiment analysis and web mining together to show the current market and internet trends along with their positive or negative sentiments coming from people online who are interacting with those topics.

It lets people search certain keywords in the search bar and get to know the information regarding the general public's opinion about the search query.

Small time investors and small business owners can see how their investments and businesses are trending and how the sentiment is regarding them. The easy to use interface helps even new people in analyzing the current trends of the world. It can also lead to people from different professions working on topics that require more attention and have more demand.

2.2 Product Functions

The systems functionalities are :-

- The default homepage will be showing the trends currently most trending around the world.
- The website will use web mining and natural language processing (chunking) to collect data from the internet.
- People can search key-words according to their intent from the search bar.
- People can also go for region specific searches to dive deep into the trends of a place.
- The search page will display all the results.
- All the results will be displayed in a graphical, easy to read format.

2.3 User Classes and Characteristics

No prior knowledge is required to use the website, just basic knowledge of data or graphs is more than enough, although it is not a necessity.

- **Anyone interested** - Investor, Traders, Businessmen, Economists, Financial analysts, Educational Institutions, Students - No prior knowledge required.
- **Support Staff** - Needs technical knowledge of the system to solve any problems the system may face down the road.

2.4 Operating Environment

This Project is a website and hence doesn't depend on any Operating System and works in any modern browser that can run HTML5, as long as internet connection is available.

2.5 Design and Implementation Constraints

The data for some regions might not be available due to country specific restrictions on some websites or due to the lack of internet usage in some countries, eg. North Korea, China.

Python(NLTK) is used at the base for named entity recognition, and chunking will be used to determine its impact (positive or negative) and it will have to be made fast so as to ensure a fast user experience.

The website will be made using html, css, bootstrap and flask.

2.6 User Documentation

- Help section in the website will be provided which will guide users as to how to use the website to its full potential.
- A video guide of the working website will also be provided in the help section.

2.7 Assumptions and Dependencies

- Users have a working phone/tablet/computer/laptop which has a browser.
- Users have access to stable and fast internet connection while accessing the website.
- The browser used is compatible with HTML5.

3.External Interface Requirements

3.1 User Interfaces

- The Homepage of the Website will have a UI for any general user
- The Search module will have a search bar UI which leads to a search results page
- Filtering according to region will also have a UI where the user is allowed to select the region he/she wishes to view the trends in.
- The user can also select a button in the UI to view the sentiment of the trend.

3.2 Hardware Interfaces

- OS: Windows 7 and above
- Processor: Intel i3/Ryzen 3 and above
- Ram: 2gb and above
- Hard drive: 8gb and above

3.3 Software Interfaces

- Client side: HTML, CSS, JS, Flask, Python, Bootstrap
- Server side: NodeJS

3.4 Communications Interfaces

- A compatible web browser will be required to view the website like Mozilla Firefox, Google Chrome or Microsoft Edge.
- The website will be securely hosted and will work on HTTP/HTTPS protocol.

4. Functional Requirements

- User should be able to see global trends on homepage
- User should be able to filter trends based on region
- User should be able to search using a query for any trend
- User should be able to visualize the trends
- User should be able to check the sentiment of the trends

5.Other Nonfunctional Requirements

5.1 Performance Requirements

- The website should be fast and responsive to users.
- The search query should not take more than 0.5 s to be processed.
- The visualisation of the trend should be fast and <1s.
- The website, if it goes down, must be brought back as fast as possible <30 minutes.

5.2 Safety Requirements

- Website must not have spammy ads
- Users can contact us to report phishing.
- Users should not be able to DOS the website, or be able to change any source code from the client side.

5.3 Security Requirements

- HTTPS should be used to provide a secure service to the user.
- User data should not be stored, as it is not required by the website.
- The website must be hosted securely to avoid any types of attacks.

5.4 Software Quality Attributes

- The website must be easy to use and access.
- It should support multiple types of displays i.e it should be responsive.
- The website must also be free of ads so as to not disturb the user.

5.5 Business Rules

- The software developers must work closely with the customer so as to deliver the product as close to what the user wants.
- The processes being undertaken must be transparent so as to make the customer feel secure regarding the project.
- Not everyone must be given access to source code so as to ensure integrity of the project.

6. Other Requirements

Appendix A: Analysis Models

Deliverable-Based Work Breakdown Structure

