Software Requirements

Specification

for

Sentimental Analysis

Version 1.0 approved

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1. Introduction

1.1 Purpose

The SRS describes the full Sentimental Analysis. The Purpose of this document is to clearly describe the architecture, interfaces, functional, non-functional requirements and constraints for developing an efficient text sentiment Analyzer. This document will help the intended audience to understand the requirements thoroughly for designing, developing and testing of sentiment analyzer.

1.2 Document Conventions

The following conventions have been considered in this SRS;

Table 1.1 shows intended readers of the document

Convention	Reason for using the convention
Template: IEEE	Provides Detailed Description about the Product, Convenient to use
Writing Times New Roman	Standard writing In Industry
Font: 12	One of the Standard fonts used in Industry
Writing Justified	Best Practice for any Document

1.3 Intended Audience and Reading Suggestions

These are the intended readers of this document;

Table 1.2 shows intended readers of the document

Reader	Use of the document to the reader
Dr. Abdul Aziz	Check/Review
Arun Kumar	Designing and Development of Product
Abdul Manan	Development and Testing of Product
Sanjay Kumar	Development of Product

1.4 Product Scope

1.4.1 Goal

The scope of the product is to efficiently analyze the sentiments/emotions of the writer by accurately processing the stated statements, and labeling them as positive, negative, or neutral based on their polarity score.

1.4.2 Objectives

The objective for developing this product is to implement an efficient Sentiment analyzing Algorithm by using the core concepts of NLP (Natural Language Processing) with Data Structures.

1.4.3 Benefits

This Sentiment analyzer can be of great use for the brands, who wants to identify their customer needs, and wants to know satisfactory ratio of their products. It can help them in identifying certain flaws in their products quite efficiently in less amount of time. This can also be used to analyze the big data present on social media platforms such as twitter, Facebook, and Instagram.

1.5 References

- http://www.cse.aucegypt.edu/~rafea/SATA/Reports/RequirementsSpecifications-Rafea-3.pdf
- https://www.slideshare.net/ToseefHasan2/srs-for-library-management-system
- https://www.reqview.com/doc/iso-iec-ieee-29148-srs-example

2. Overall Description

2.1 Product Perspective

The current age is the era of big data which is an opportunity as well as a challenge for the cooperate sector. Artificial Intelligence is all about making the machine enable to think and understand the human sentiments in order to make the best yield. In addition to it, in this digital world, for marketers to get an insight of their customer's reviews, it has become challenging due to the versatility in data. In order to tackle these issues and efficiently analyzing the sentiments of people, a "TEXT SENTIMENTAL ANALYZER" is being developed using the concepts NLP (Natural Language Processing) being implemented using data structures.

2.2 Product Functions

Tokenization

This Function will help us to split the text in smaller parts and reduce the complexity of the problem.

Noise Removal

This Function will help us in clearing the text, it will remove all the parts of the text which does not carry any significant meaning and should not be used in analysis.

Remove Punctuations

This function is used in some of the cases but is very important, it will help us to remove the punctuations from the text and makes the analyzation process very easy

Polarity-Calculator

This is the most important function for the analyzer. It will help us to formulate the polarity score of a sentence by computing the polarity value of different words present in lexicon dictionary in such a way that we can get perfect score of a sentence, for Sentiment determination

2.3 User Classes and Characteristics

The following are the different users and their Characteristics for the product;

Developers

This user will use this product for Testing and Maintenance

The user will be required to Must Know the purpose and desired outcomes of the system

Supervisor

This user will use this product for Evaluation of System

The user will be required to Must have knowledge of the system requirements, functionalities and outcomes from the system.

2.4 Operating Environment

Table 1.3 shows the operating environment

Operating Environment	Reason
windows version 7	This System will run smoothly on windows 7 and above, as it is a desktop application so requires windows
windows server 2012	To run visual studio for the systems execution windows server of 2012 or above is required, without which visual studio will no run, so we will be unable to execute the system
Visual Studio	Visual Studio is the main IDE on which our system will be executed, visual studio 2017 is recommended.
Ram	To run visual studio smoothly, ram should be at least 4GB it is recommended to have above 4Gb ram. So that other operations can also run Concurrently.

2.5 Design and Implementation Constraints

1) The system must be developed using C++ language.
2) System must be Completed in the given time span.
3) The System should be designed in a such a way that core concepts of data structures should be embedded in it

2.6 User Documentation

The tutorials, will provide users with the help they need to effectively and efficiently use the product.

2.7 Assumptions and Dependencies

Assumptions

1) The System will be User friendly.
2) Sentence provided as input is grammatically correct.
3) System will be developed on time if resources are available.
4) The System is available 24 a day.

Dependencies

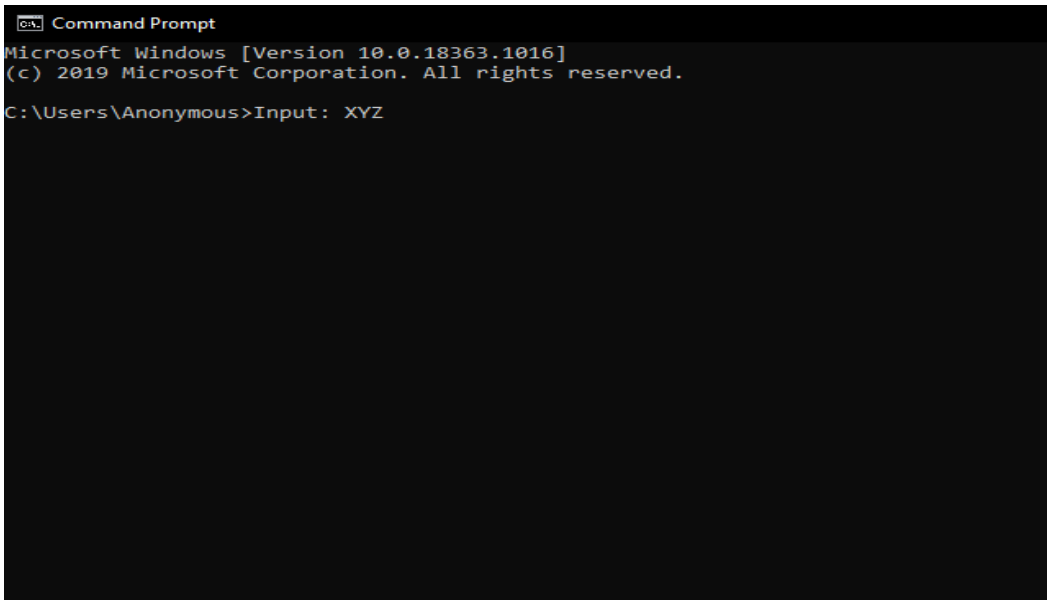
1) Input provided Shall be in English Language

3. External Interface Requirements

3.1 User Interfaces

- **Windows Console Screen**

  The main window of the system will be a simple console screen to interact with the user where user will provide the input. Later on, the results will be displayed accordingly.



3.2 Hardware Interfaces

- **Any Windows Device**

This device will neither provide and nor take in any data from the system. It will communicate using Visual Studio. Which will run windows 7 or higher version.

3.3 Software Interfaces

- **Visual Studio**

This device will neither provide and nor take in any data from the system.
Our system will be executed on visual studio.

4. System Features

4.1 Sentiment Determination

This is a high priority feature. Sentiment Determination is the main feature of our system. This feature tells the emotion/sentiment of the text provided as an input. These sentiments are distributed in three categories I-e positive, negative and neutral based on the polarity score computed.

Table 1.5 shows Sentiment Determination feature

RQ code	Requirement
191049	Data Extraction
191050	Tokenization
191071	Noise Removal
191072	Punctuation Removal
191111	Polarity Computation

4.2 User Feedback

This is a medium priority feature. After Displaying the Computed Sentiment, we ask the user to confirm the displayed answer.

5. Non-functional Requirements

5.1 Performance Requirements

Table 1.6 shows performance requirements

RQ code	Requirement
01	The System must be able to perform sentiment analysis on at least one complete sentence.
02	The System must be able to process the inputs as many times as user desires.

5.2 Security Requirements

Table 1.8 shows the security requirements

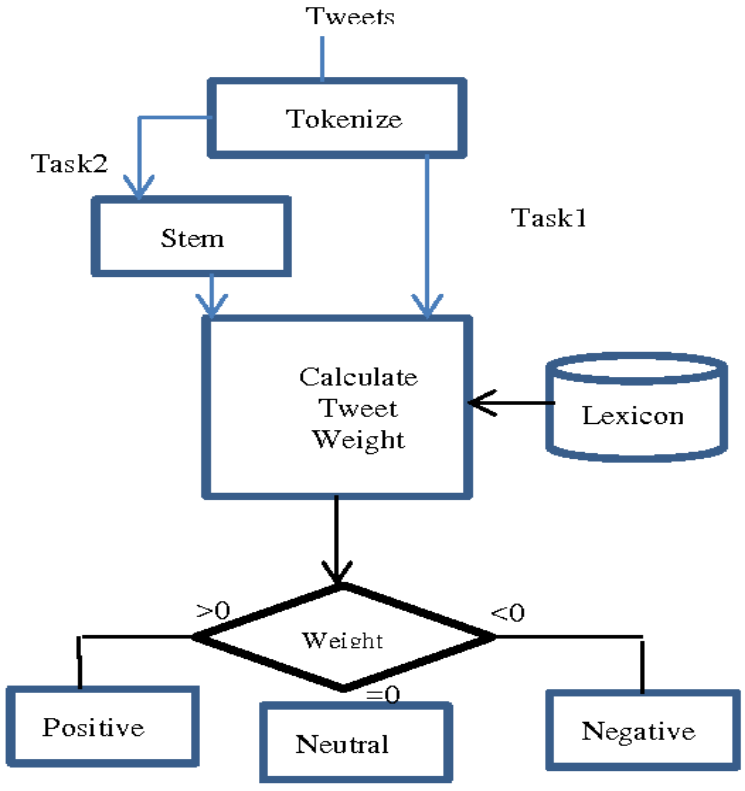
RQ code	Requirement
03	The Data provided by the user shall not be lost during the Analysis process so that user shall be able to get accurate result for the input

5.3 Software Quality Attributes

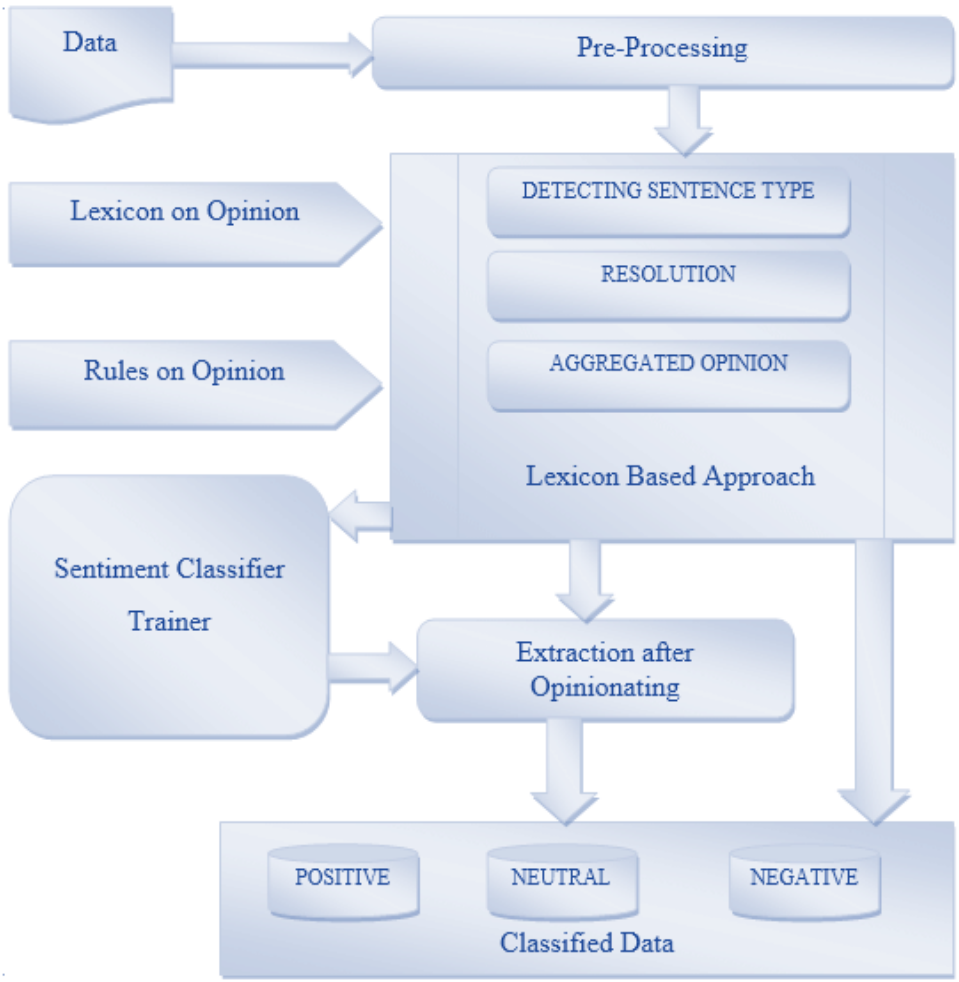
Table 1.9 shows the quality attributes

RQ code	Requirement
04	The System should be reliable so that the user of the product will run with all the features mentioned in this document are available and executing perfectly. It should be tested and debugged completely. All exceptions should be well handled.
05	The System should be able to process the data accurately and compute satisfactory polarity score, so that users can perfectly analyze their data for sentiments.

6. Diagrams



Architecture Diagram



Architecture Diagram