Software Requirement Specification Document

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1 Introduction

1.1 Purpose of this document

This document serves the purpose of the software requirement specification documentation and to provide a detailed overview of our software product, its parameters and goals and to describe the project's target audience and its user interface, hardware and software requirements.

1.2 Scope of this document

It defines how our client, team and audience see the product and its functionality. Our main concern here is that everyone gets the right idea as our functionality as presented to the audience is to develop a system which would be considered as a sub-system on a larger scale to detect and take further actions upon encountering cyberbullying. Our timeline of delivery shall be June 2019, while it may cost 0 LE as it is presented for academic purposes, however that may change in the future while taking into consideration the market need. Nonetheless, it helps any designer and developer to assist in software delivery lifecycle (SDLC) processes.

1.3 Overview

Depending on the social platform needs our developed program will be embedded within a larger system for cyberbullying detection and to make countermeasures regarding this issue.

1.4 Business Context

Moreover as to a business point of view more and more about cyberbullying will be dug through the vast extent of social media platforms as incidents of cyberbullying have doubled throughout the past 5 years.
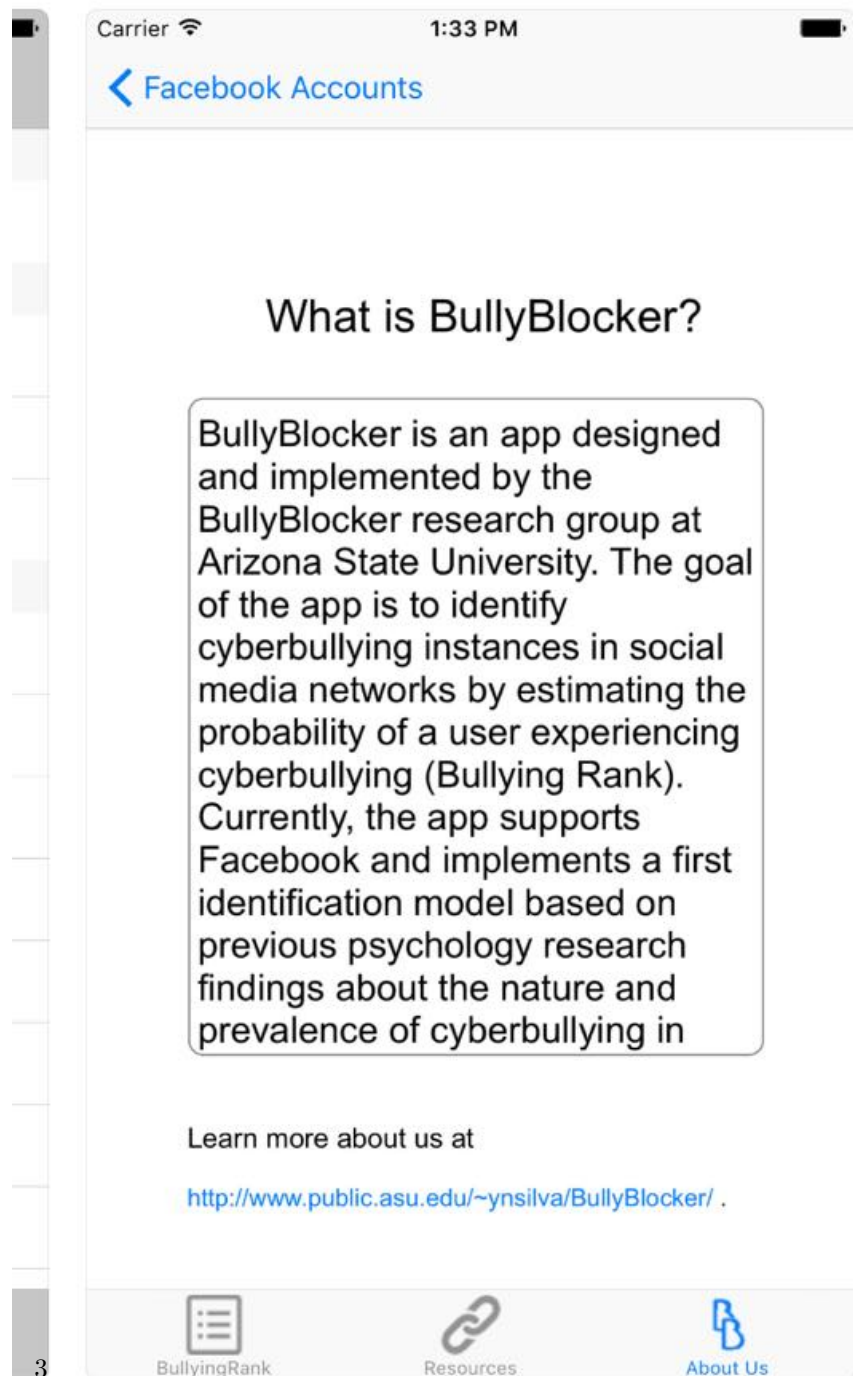
2 General Description

2.1 Product Functions

Our project aims to enhance the detection of cyberbullying along with sarcasm. The main goal in this project is to make voting between three classifiers to detect cyberbullying in messages between two users by sending these messages to the cloud then it will return with the result if it sarcasm or not. Preprocessing module 1. Read file. 2. Tokenization. 3. Stemming. 4. Lemmatization 5. Remove Encoding 6. Word correction Feature extraction. 1. TFIDF 2. LIWC 3. Sentiment features Processing 1. Training 2. SVM 3. NaÃŕve Base 4. Random Forest.

2.2 Similar System Information

Bully Blocker app it is an app that is published on apple store that is give info about the bullying on Facebook like the comments on posts and on photos then it

Carrier 🛜 1:33 PM ▬

‹ Facebook Accounts

What is BullyBlocker?

BullyBlocker is an app designed and implemented by the BullyBlocker research group at Arizona State University. The goal of the app is to identify cyberbullying instances in social media networks by estimating the probability of a user experiencing cyberbullying (Bullying Rank). Currently, the app supports Facebook and implements a first identification model based on previous psychology research findings about the nature and prevalence of cyberbullying in

Learn more about us at

http://www.public.asu.edu/~ynsilva/BullyBlocker/ .

| BullyingRank | Resources | About Us |

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gives statistics on it. article graphicx

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‹ Facebook Accounts   ‹

Name: Tester Blocker

Bullying Rank: High Risk

0   100
                               84

Warning Signs:

　Insulting Feed Content: 20

　Insulting Photo comments: 30

　Insulting Video comments: 10

Vulnerability Factors:

　New Neighborhood Factor: 0.00

　New School Factor: 0.00

　Age/Gender Factor: 0.54

Number of Bullies: 0

Number of Days Scanned: 90

Number of Insults per day: 0.67

BullyingRank   Resources   About Us

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2.3   User Characteristics

This project aims to target large number of people who use messenger applications. The users of our applications hope to not be bullied during their conversations on their messenger applications. Our application will detect the people who are making cyberbullying and report them.

2.4   User Problem Statement

Data in internet nowadays are too huge to be monitored manually by humans to detect cyberbullying and people use messenger applications in many times these so they have of bullying messages. In previous cyberbullying detection papers there has been a problem in detecting false positive cyberbullyingâĂŹs cases. The accuracy in these papers is not high enough and could be improved. Sarcasm which is type of cyberbullying is not detected in these papers.

2.5   User Objectives

The application is designed for individual users who are using messenger applications, like whatâĂŹs app and messenger to detect bullying and sarcasm in messages .and the applications can report this messages.

2.6   General Constraints

Our system constraints is the ambiguity of words also the high rate of the false positive. It is used for mobiles and laptops. It used by all people who are using messenger applications.

3   Functional Requirements

3.1   Send_Message

Scope	
Description	This function sends Messages to application
Action	Sends messages from one user to another one
Input	String and Integer
Output	Boolean
Precondition	the user must be logged in
Post-condition	None
Dependencies	
Priority	10\10

Table 1: Send_Message

3.2   Preprocessing

Scope	
Description	This function extract features from text
Action	Takes text and go some preprocessing
Input	String
Output	String
Precondition	There is text to process
Post-condition	The text then goes to the feature extraction
Dependencies	
Priority	10\10

Table 2: Preprocessing

3.3   Extract_Features

Scope	
Description	This function extract features from preprocessed text
Action	Takes text and extract features from it
Input	String
Output	Model object
Precondition	There is preprocessed text to extract the feature from
Post-condition	Then goes to the classifier to classify the object
Dependencies	
Priority	10\10

Table 3: Extract_Features

3.4   Classification

Scope	
Description	This function Trains and tests the classifier
Action	Model is taken to train the data
Input	Model object
Output	None
Precondition	There is an object of the model
Post-condition	classify data
Dependencies	
Priority	10\10

Table 4: Classification

3.5   SignUp

Scope	
Description	This function creates account for users
Action	Takes Data of user and insert in database
Input	String firstName, String LastName,int age, String gender, String email
Output	Boolean
Precondition	That the user doesn't exists
Post-condition	Account created
Dependencies	
Priority	10\10

Table 5: SignUp

3.6   Update_Classifier

Scope	
Description	This function updates the classifier with new data
Action	Train the classifier with new data
Input	Model object
Output	None
Precondition	There is new data to train the classifier with
Post-condition	Classify data
Dependencies	
Priority	10\10

Table 6: Update_Classifier

3.7   Login

Scope	
Description	This function verifies user's account
Action	Check for username and password in database
Input	String user-name & Sting password
Output	Boolean
Precondition	User has an account already
Post-condition	None
Dependencies	The application can't be accessed without being logged in
Priority	10\10

Table 7: Login

3.8   Send_Notification

Scope	
Description	This function sends notifications
Action	Sends notification from cloud to application
Input	String
Output	Boolean
Precondition	None
Post-condition	None
Dependencies	
Priority	10\10

Table 8: Send_Notification

3.9   Encrypt

Scope	
Description	This function encrypt messages
Action	Encrypt messages before being sent
Input	String
Output	String
Precondition	Data needed to be encrypted
Post-condition	Encrypted data
Dependencies	
Priority	9\10

Table 9: Encrypt

3.10   Decrypte

Scope	
Description	This function decrypte messages
Action	Decrypte messages when the messages are received
Input	String
Output	String
Precondition	Data needed to be decrypted
Post-condition	Decrypted data
Dependencies	
Priority	9\10

Table 10: Decrepit

3.11   Delete_Message

Scope	
Description	This function deletes messages
Action	Delete message from database
Input	Integer
Output	Boolean
Precondition	The id exists in database
Post-condition	The message has been deleted
Dependencies	
Priority	8\10

Table 11: Delete_Message

3.12   Copy_Message

Scope	
Description	This function copies messages
Action	Copies message to clipboard
Input	Integer
Output	Boolean
Precondition	None
Post-condition	The message has been copied to the clipboard
Dependencies	
Priority	8\10

Table 12: Copy_Message

3.13   Paste_Message

Scope	
Description	This function paste messages
Action	print message from clipboard on screen
Input	Integer
Output	Boolean
Precondition	The id exists in clipboard
Post-condition	The message is pasted on screen
Dependencies	
Priority	8\10

Table 13: Paste_Message

3.14   Logout

Scope	
Description	This function logs the user out of the application
Action	Logout and redirect to login screen
Input	None
Output	Boolean
Precondition	The user must be logged in
Post-condition	Go to login screen
Dependencies	For the user to use the application he must login again
Priority	7\10

Table 14: Logout

3.15   Show_Notification

Scope	
Description	This function is for notification displaying
Action	Shows notification on screen
Input	String
Output	Boolean
Precondition	None
Post-condition	The notification is printed in screen
Dependencies	
Priority	7\10

Table 15: Show_Notification

4 Interface Requirements

4.1 User Interfaces

4.1.1 GUI

4.1.2   API

1. Twitter API

5   Performance Requirements

The application will be fast as we know that the application will the send the messages to the cloud to detect if there is cyberbullying and sarcasm in the message or not. This must be fast and we aim to make it in less than one second. Our application will use memory as the other freeware and cross-platform messaging and Voice over IP service we estimate that it will use 100 MB as average usage.

6   Design Constraints

6.1   Standards Compliance

Our application will need an android device or IOS device that is connected to the internet that we will install the application on it.And the application will be installed on the cloud.

6.2   Hardware Limitations

The phone must be at least 512 Ram also it must contain appropriate storage space to put the application. and it must be a smart phone.

6.3   others as appropriate

7   Other non-functional attributes

7.1   Security

The Login Data and Payment Data should be stored securely besides the messages and notifications that the use receives and his Credentials for the desired Social Media Platform

7.2   Portability

The Software is going to be portable as it is going to be available for both desktop and mobile environments and could make it support any platform as the core of the application is on a cloud and this application is just a client that sends the data for the core to process it

7.3 Maintainability

Our Proposed Application should be maintable as it learns it self from the previous wrong classifications by the help of the user feedback on random clasifications and also by the reporting of the user to the wrong classifications

8 Preliminary Object-Oriented Domain Analysis

8.1 Inheritance Relationships

Figure 1: Inheritance Relations

8.2 Class descriptions

8.2.1 Class name

8.2.2 List of Superclasses:

8.2.3 List of Subclasses:

8.2.4 Purpose:

8.2.5 Collaborations:

8.2.6 Attributes:

8.2.7 Operations:

8.2.8 Constraints:

9 Operational Scenarios

10 Preliminary Schedule Adjusted

Task Name	Start Time	Finish
Idea Discussion	1/8/2018	1/8/2018
Idea Research	1/8/2018	13/9/2018
Proposal Writing	13/9/2018	16/9/2018
Implementing Prototype	16/9/2018	17/9/2018
Delivering Rehearsal	18/9/2018	18/9/2018
Delivering Proposal	18/9/2018	26/9/2018
Doing Survey	10/10/2018	20/10/2018
Implementing Demo	20/10/2018	25/10/2018
Writing SRS	25/10/2018	30/10/2018
Training Model	30/10/2018	25/11/2018
Preparing For External Examiner	25/11/2018	3/12/2018
Building Desktop App	3/12/2018	18/1/2019
Writing SDD	18/1/2019	1/2/2019
Building Android App	1/2/2019	1/4/2019
Preparing For Implementation Evaluation	1/4/2019	25/4/2019
Writing 8 Pages Paper	25/4/2019	28/4/2019
Testing and Debuging Project	28/4/2019	7/5/2019
Writing Final Thesis	10/5/2019	25/5/2019
Presenting Final Thesis	25/6/2019	25/6/2019

11 Preliminary Budget Adjusted

Google Machine Learning engine 0.7usd/h

12 Appendices

12.1 Definitions, Acronyms, Abbreviations

Software delivery lifecycle (SDLC)

12.2 Collected material

N/A

13 References

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