Low Level Design (LLD)

Facebook Post Status Prediction

Written By	Diana Laveena DSouza
Document Version	0.1
Last Revised Date	9-Sep-2022

Document Version Control

Change Record:

Version	Date	Author	Author
0.1	09/09/2022	Diana Laveena DSouza	Introduction & Architecture Defined

Reviews:

Version	Date	Reviewer	Comments
0.1	09/09/2022		Document Content, Version Control and Unit Test Cases to be added

Approval Status:

Version	Review Date	Reviewed By	Approved By	Comments

Contents

Document Version Control……2

Abstract……..4

1 Introduction ……5

1.1 What is Low-Level design document? ……..5

1.2 Scope ……5

2 Technical Specifications……..……5

2.1 DataSet…….. ……6

2.1.1 Dataset Overview.....……..6

2.1.2 Input Schema……..7

2.2 Predicting Emotional Quotient ……..7

2.3 Database ……7

2.4 Deployment…… ……7

3 Technology Stack ……....8

4 Proposed Solution ……...8

5 Model Training/Validation Workflow……9

6 User I/O Workflow……10

7 Test Cases ……11

Abstract

Many teenagers go through a difficult adolescence period, which can lead to depression. It's usually linked to the emotional and socioeconomic pressures they're under. This can lead to dangerous and violent conduct, substance misuse and self-harm. Young people use social media to stay in touch with friends, teachers, family, and other members of their peer group. As a result, it can be utilized as an efficient instrument for disseminating information to those young people who are affected. So, here we need to identify the emotional quotient of young people through their Facebook posts.

1 Introduction

1.1 Why is Low-Level Design Document?

The goal of LLD or a low-level design document (LLDD) is to give the internal logical design of the actual program code for Facebook Status Prediction. LLD describes the class diagrams with the methods and relations between classes and program specs. It describes the modules so the programmer can directly code the program from the document.

1.2 Scope

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. This process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

2 Technical specifications

2.1 Dataset

DataSet	Finalized	Source
Facebook Posts	yes	https://www.kaggle.com/datasets/praveengovi/emotions-dataset-for-nlp

2.1.1 Dataset Overview

The Dataset consists of a person's Facebook status information and emotions.

There are a total of 16000 Facebook statuses in the training set and 2000 in the validation set.

Facebook Posts

	Post_Text	Emotions
2	im in confuse and feeling so blank rite now	sadness
3	i know what i believe and how i feel but some part of me is still hesitant because the old me would have said that anyone who believed there was a god was crazy	fear
4	i lie awake for hours and look at him and at times i feel so ashamed of my thoughts	sadness
5	i instantly feel anxious that a police officer is going to pull me over	fear
6	i listen to the hurricane rain outside the window i feel a little melancholy	sadness
7	i am very excited to finally meet that companion that companion who will be with me at all times especially when i am lonely very lonely that companion who will nev	love
8	i feel weird knowing mine died when i wasn t around	surprise
9	i feel pressured helpless because i dont have control over this	fear
10	i feel assaulted when i hear the radio ad	fear
11	i honestly never expected to feel so vulnerable	fear
12	i actually begin to feel sorry for him that he has settled for someone like me for life	sadness
13	i often feel fucked regardless	anger
14	i would feel like a hypocrite supporting palin for any of those reasons	joy
15	i didnt feel too needy i didnt feel too emotional	sadness
16	im feeling a bit greedy	anger
17	i would have liked to go out but i just wasnt feeling it and i think it was partly because it would be with someone that i am not thrilled with being around right now	joy
18	i just feel very satisfied and content	joy
19	i feel really fucked up why do such things always happen to me	anger
20	i can feel the hesitation the temptation to pull back and dull the activities of the season out of habit	sadness
21	i still feel so agitated	anger
22	i just read this on yahoo and thought it verrrrrrrryyyy interesting n n n n red may be the color of love for a reason it makes men feel more amorous ntoward	love
23	i feel honoured and humbled cos hes a legend and one i still look up to	joy
24	i love this service because it is easy to use set up amp because i feel like by using the service im supporting a small company which we all know i love to do	love
25	i had been lying to myself feeling that maybe because i so loved spending time with this fellow and thought he enjoyed his time so equally with me that maybe the end	love
26	i almost could feel it attempting to smother me like a hot blanket pressed down over me	love

2.1.2 Input schema

Feature Name	Datatype	Size	Null/Required
Post_Text	text	250	Not Required
Emotions	varchar	20	Not Required

2.2 Predicting Emotional

- The system presents the set of inputs required from the user.
- The user gives the required information.
- The System should be able to predict whether a person has a mental disorder based on the user information.

2.3 Database

The database used in this project to store the data is the Cassandra database.

2.5 Deployment

3 Technology Stack

Front End	HTML/CSS
Backend	Python Flask
Database	Cassandra
Deployment	GCP

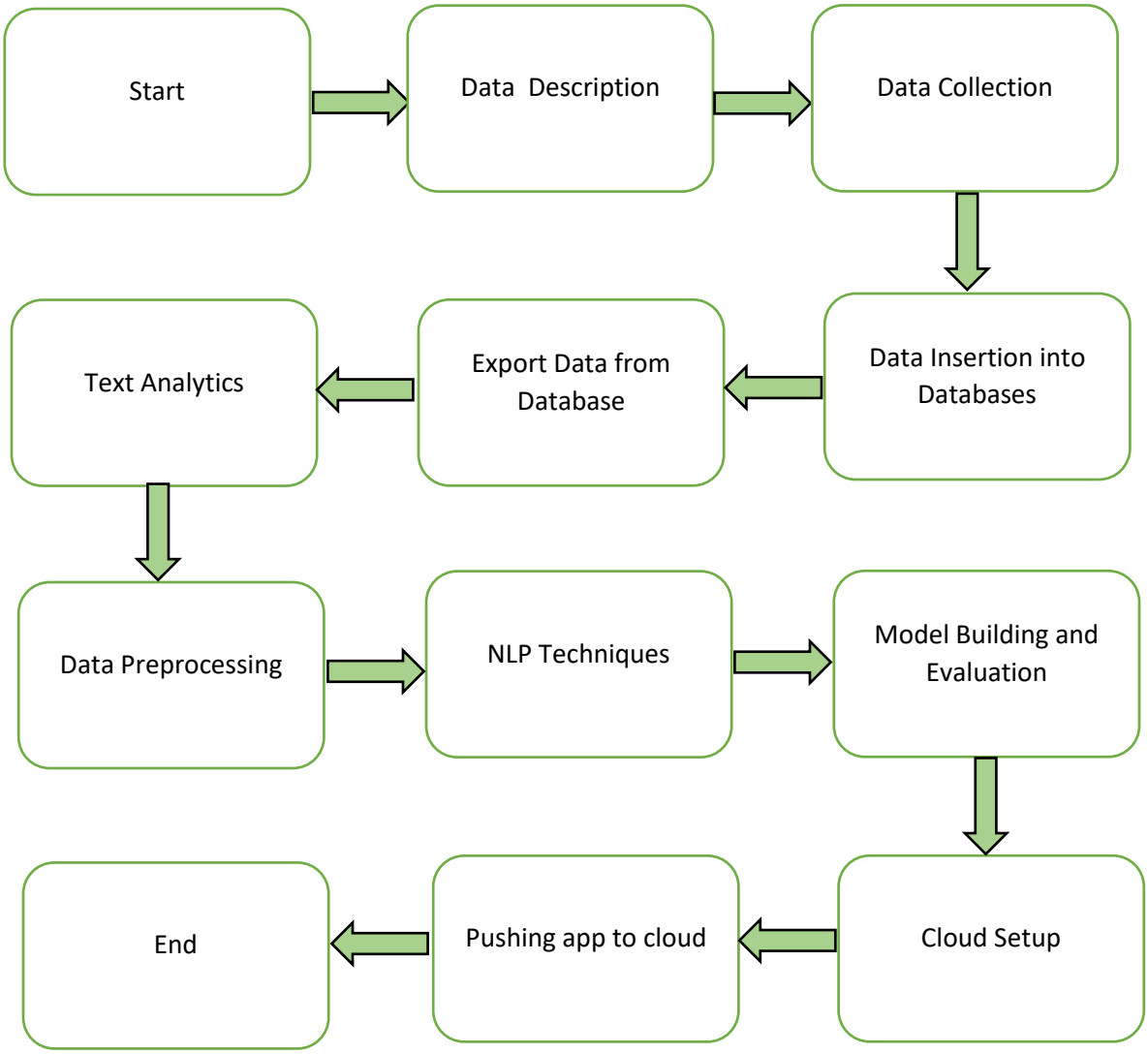
4 Proposed Solution

Refer: https://www.hindawi.com/journals/cin/2022/4395358/

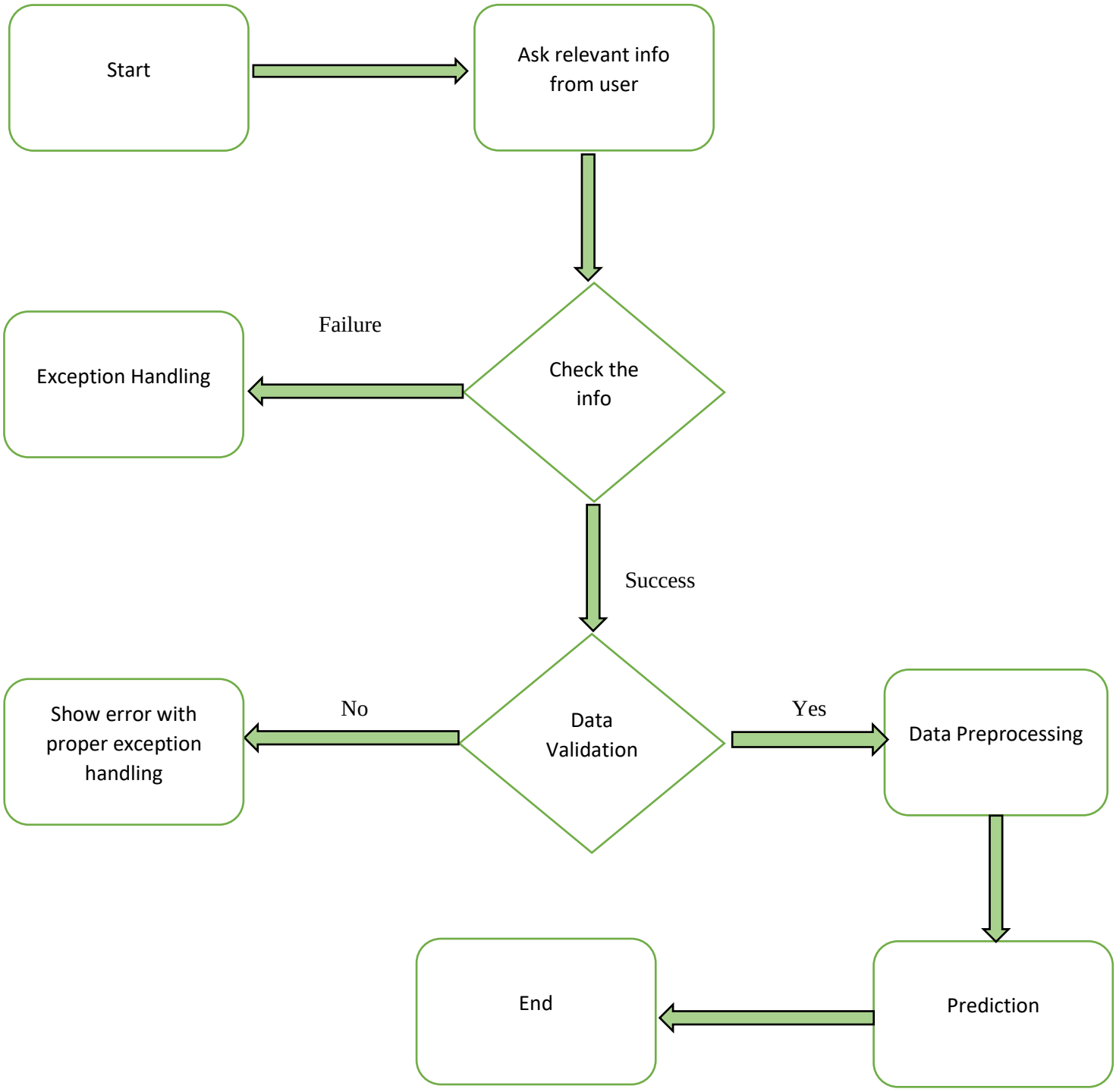
The actual research paper proposed various methods like Lexicon-based, Machine Learning-based, and Hybrid Methods. Finally, we selected Machine learning-based methods. Under Machine learning-based methods, we can choose either Supervised or Unsupervised methods. We decided on Supervised methods such as tree-based methods, Logistic Regression, K-nearest neighbour and SVC. But SVC gives better results than others.

Baseline Model: SVC, since this is a classification problem.

5 Model Training/Validation Workflow



6 User I/O workflow



7 Test Cases

Test Case Description	Pre-Requisite	Expected Result
Verify whether the Application URL is accessible to the user	1. Application URL should be defined	The application URL should be accessible to the user.
Verify whether the Application loads entirely for the user when the URL is accessed	1. Application URL is accessible 2. Application is deployed	The Application should load entirely for the user when the URL is accessed.
Verify whether the user can input the text in all input fields	1. Application is accessible	The user should be able to input the text in all input fields.
Verify whether the user gets Submit button to submit the inputs.		The user should get Submit button to submit the inputs.
Verify whether the user is presented with results on clicking submit.		The user should be presented with results on clicking submit