NEW HORIZON
COLLEGE OF ENGINEERING
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC
Accredited by NAAC with 'A' Grade.

OPINION MINING

A MINI PROJECT
REPORT

Submitted by

PRESKSHA SHRIDHAR

1NH17CS102

In partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

NEW HORIZON
COLLEGE OF ENGINEERING
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Certificate

This is to certify that the mini project work titled

OPINION MINING

Submitted in partial fulfilment of the degree of Bachelor of Engineering in Computer Science and Engineering

Submitted by

PREKSHA SHRIDHAR
1NH17CS102

DURING EVEN SEMESTER 2019-2020

For

CSE65

Signature of Reviewer   Signature of HOD

SEMESTER END EXAMINATION

Name of the Examiner   *Signature with date*

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2.________________________   ________________________

ABSTRACT

Opinion mining is the procedure in which information is extracted from the opinions and emotions of the people in regards to entities, events and their attributes.

Opinion mining extracts the attitude of the writer in a document.

This project implements the opinions of the customer who visits the shop and buy products.

The feedback they give is then analysed and the result of their opinion is stored.

With the help of this, the feedback given by each customer can be analysed and changed accordingly for the better marketing of the products.

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be, but impossible without the mention of the people who made it possible, whose constant guidance and encouragement crowned my efforts with success.

I have great pleasure in expressing gratitude to **Dr. Mohan Manghnani,** Chairman of New Horizon Educational Institutions for providing necessary infrastructure and creating good environments

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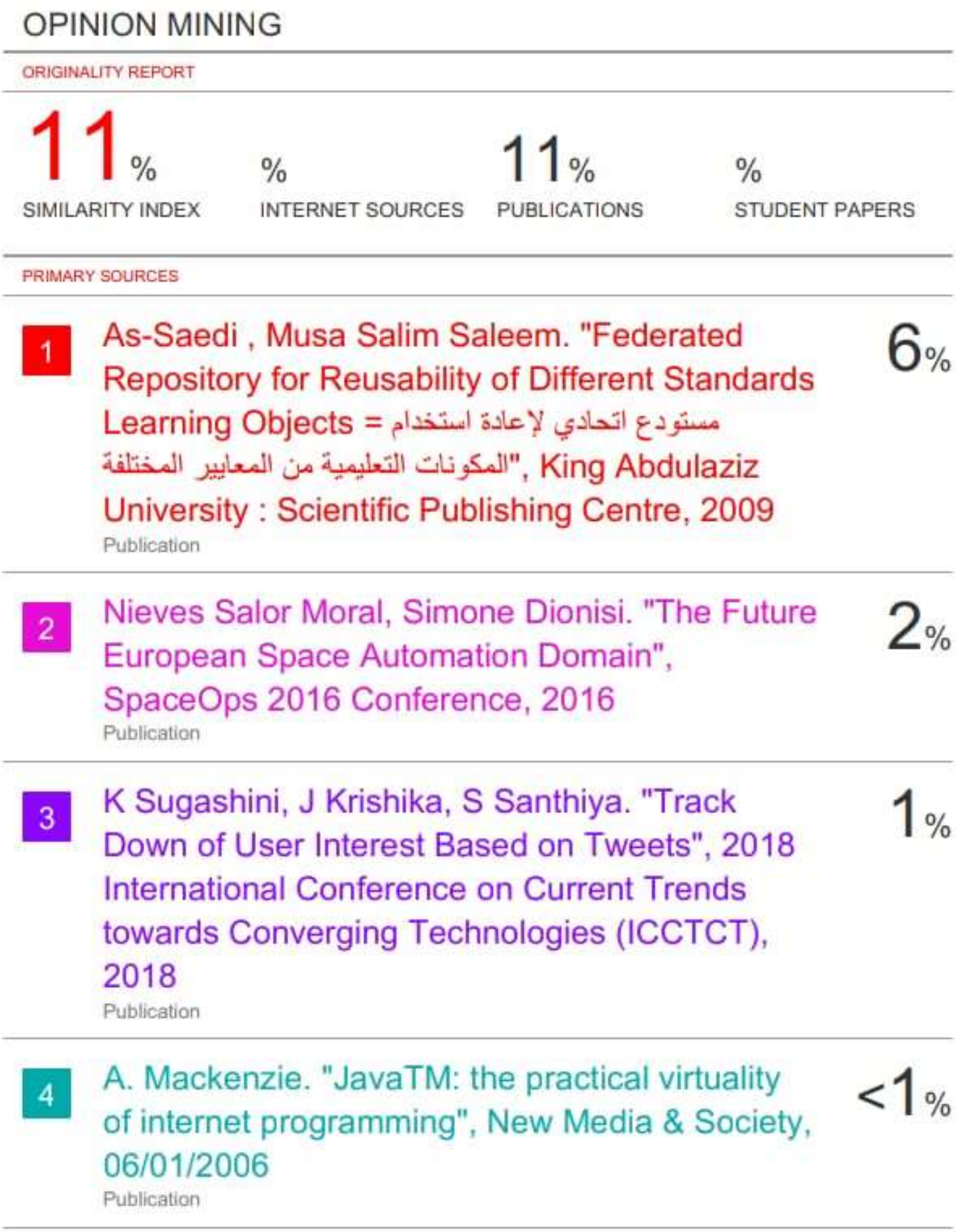
PREKSHA SHRIDHAR

1NH17CS102

PLAGIARISM



OPINION MINING

ORIGINALITY REPORT

11%	%	11%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	As-Saedi , Musa Salim Saleem. "Federated Repository for Reusability of Different Standards Learning Objects = مستودع اتحادي لإعادة استخدام المكونات التعليمية من المعايير المختلفة", King Abdulaziz University : Scientific Publishing Centre, 2009 Publication	6%
2	Nieves Salor Moral, Simone Dionisi. "The Future European Space Automation Domain", SpaceOps 2016 Conference, 2016 Publication	2%
3	K Sugashini, J Krishika, S Santhiya. "Track Down of User Interest Based on Tweets", 2018 International Conference on Current Trends towards Converging Technologies (ICCTCT), 2018 Publication	1%
4	A. Mackenzie. "JavaTM: the practical virtuality of internet programming", New Media & Society, 06/01/2006 Publication	<1%

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CHAPTER 1

INTRODUCTION

Opinion mining which is a type of sentiment analysis in which the emotions within the text data given by the user is interpreted and classified using text analysis technique. Sentiment analysis allows a major advantage in business and marketing field by identifying the customer sentiment towards products, brands or services in feedback. It is also known as emotion AI. In this, the project uses the concept of Stanford natural language processing, text analysis, and biometric to systematically identifying, quantify and study the affective state and subjective the information. It is the procedure in which information is extracted from opinions of people and based on the information collected the attitude of the writer is also documented.

1.1 PROBLEM DEFINITION

Opinion mining is contextual mining of text, which is a way to analyse the subjective information in the text and then mine the opinion. It is the procedure in which information is extracted from the users and their opinions and emotions of the people in regards to entities, events and their attributes. This allows us to identify and extract subjective information in source material. Opinion mining extracts the attitude of writer in a document. This opinion extracted can be categorized and analysed and the result can be recorded based on the emotions extracted and can be used for the better performance of marketing.

1.2 OBJECTIVES

The aim of this project is to implement the concept of object-oriented program using java. The concept of database is also used and is connected to the java program with the help of JDBC. For the frontend the concept of swing is used. This project looks forward to get the emotions of the customer. The customer who visits the shop and buy items and entered in the stored. After the items bought are entered the customer has to give a feedback on his experience at the store. The feedback given by the customer will be analysed and the emotion will be displayed based on his emotion. It can be either very happy, happy, neutral, sad or disappointed. The smiley accordingly will be displayed.

1.3 METHODOLOGY TO BE FOLLOWED

Methodology followed involved the following:

1. System Analysis: The software and hardware requirements required for successful completion of the project were first analysed
2. Design: The algorithm and structure of database were designed
3. Specification: The different test and use cases were determined
4. Disintegration: The entire algorithm designed was broken down into small modules
5. Development: The code for each module was developed
6. Testing: Each module was tested individually and after integration

1.4 EXPECTED OUTCOMES

- Customer is asked to give the feedback. The feedback given by the customer is classified into affective categories.
- These categories are based on the presence of fairly unambiguous affect words like positive, negative and average.
- While this approach can correctly classify the statement as whether if it’s happy or sad or satisfied for positive, negative, neutral sentence accordingly.

1.5 HARDWARE AND SOFTWARE REQUIREMENTS

- **Hardware Specifications:**
    - RAM: 256MB
    - Processor: Pentium IV or above
    - Speed: 2.50 GHz

- **Software Specifications:**
    - Operating System: Linux
    - Developing Language used: Java
    - Tools Used: Java eclipse, jdbc, Stanford NLP, Swing

CHAPTER 2

OBJECT ORIENTED CONCEPTS

Java is an object-oriented program language. Object Oriented Programming refers to languages that use the programming constructs to represent and implement real world entities like inheritance, polymorphism, hiding, etc in programming. The most of OOPS is to bind data and functions into a one simple unit called as a class.

The different concepts involved in OOPs are:

2.1 CLASS

A class: it's an entity that determines how an object will behave. It consists of member data and member functions.

Syntax for creating class:

```
class ClassName
{
        //member data and member functions
}
```

2.2 OBJECT

An object is an OOPs component that's want to represent the properties and behaviours of a real-world entity.

Objects have a state and a behaviour. An object's state is stored in fields and behavior is shown via functions or methods.

Methods operate the interior state of an object in software development and also the object-to-object communication is completed via methods.

An object has three characteristics:

1. **State:** represents the information (value) of an object.
2. **Behaviour:** the behaviour (functionality) of an object is represented. As an example, deposit, withdraw, etc.
3. **Identity:** Via a novel ID an object identity is usually implemented. External user cannot view the value of the ID. However, it’s used internally by the JVM which is used to identify each object uniquely.

An object is made from a class. To make new objects the new keyword is employed in java.

Following are the three steps utilized in creating an object from a class:

1. Declaration: A variable is declared with a variable name with an object type.
2. Instantiation: To make the object the 'new' keyword is employed.
3. Initialization: The keyword 'new’ is followed by a call to a constructor. This call initializes the new object.

Syntax to make an object:

```
ClassName ObjectName = new ClassName();
```

Example of declaring an object of a class:

```
Class Project
{
        //methods and variables
}
Project obj1 = new Project();
```

2.3 INHERITANCE

Inheritance: It’s a mechanism in which all the properties and behaviours of another class one class acquires.

The class acquiring properties is understood as the child class or the sub class whereas the class whose properties are being acquired is known the parent class or the super class.

The idea behind inheritance is that, new classes will be created that are built upon existing classes. Once you inherit from an existing class, you’ll reuse methods and fields of the parent class while also having the ability to feature new methods and fields within the current class without affecting the parent class.

Inheritance represents the **IS-A relationship.** This is often known as a *parent-child* relationship.

The syntax of Inheritance:

```
class SubclassName extends SuperclassName
{
    //methods and fields
}
```

Example of Inheritance:

```
class Test extends Project
{
      //methods and fields
}
```

The **extends keyword:** It indicates that new class is been made that derives from an existing class.

The "extends" implies that it is to extend the functionality.

There are five forms of inheritance in java: Single, Multilevel, Hierarchical and Hybrid.

Java does not support Multiple inheritance of classes in order to avoid ambiguity.

Single Inheritance

When another class is inherited by a class, it’s called as a *single inheritance*

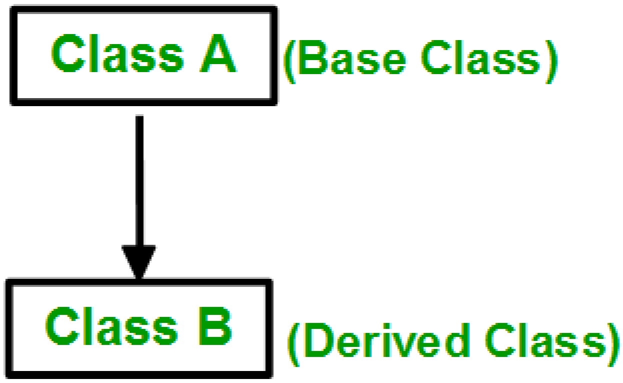


Fig 2.1 Single Inheritance

Multilevel Inheritance

When there is a chain of inheritance of classes, it’s called *multilevel inheritance*. That’s a derived class becomes a base class.

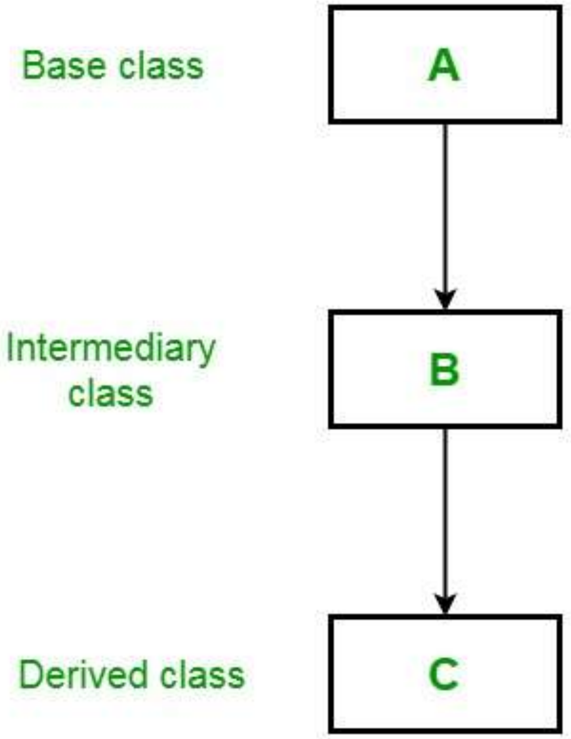


Fig 2.2 Multilevel Inheritance

Hierarchical Inheritance

When a single class is inherited by multiple classes it’s called hierarchical inheritance.

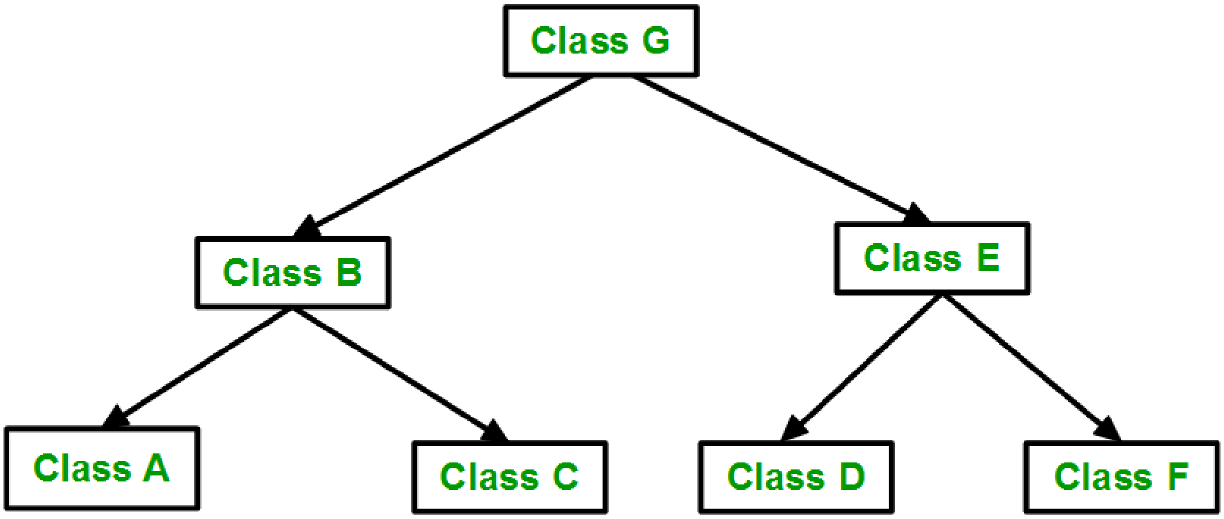


Fig 2.3 Hierarchical Inheritance

Hybrid Inheritance

It is the combination of two or more types of Inheritance is understood as hybrid inheritance.

2.4 POLYMORPHISM

Polymorphism means one name many forms. Polymorphism will be achieved by method overloading and method overriding in Java.

There are two styles of polymorphism in java:

- Compile time polymorphism.
- Run time polymorphism.

Compile Time Polymorphism

Compile time polymorphism: In java, it's nothing but method overloading. You will be able to define various methods with same name but different method arguments.

Runtime Polymorphism

Runtime Polymorphism: In java, it's nothing but method overriding. If a subclass has the identical method as base class then it's referred to as method overriding or in another word, if subclass provides specific implementation to any method which is present in its one of parent's classes then it's referred to as method overriding.

2.5 ABSTRACT CLASS

In Java, a class declared with the abstract keyword is thought as an abstract class. It can have abstract and it can have non-abstract methods (method with the body) also.

Abstraction: it's a process where the implementation details are hidden and showing only functionality to the user.

Another way to inform is that it shows only essential things to the user and hides the internal details, for instance, sending SMS where you type the text and send the message. The user won't bear in mind about the internal processing of the message delivery. Abstraction lets the user focus on what the object does rather than showing how it does it.

The two ways by which the abstraction is achieved in java:

1. Abstract class
2. Interface

2.6 MULTITHREADING

In Java the method of executing multiple threads simultaneously in java is thought as **multithreading**.

A thread, it’s a light-weight sub-process and therefore the smallest unit of processing. To gain multitasking, Multiprocessing and multithreading both are used.

However, multithreading is employed more than multiprocessing because threads use a shared memory area. They do not allocate separate memory area so memory is saved, and takes less time for the context-switching between the threads than process.

Threads will be created by using two mechanisms:

1. Extending the Thread class
2. Implementing the Runnable Interface

A class is made that extends the **java.lang.Thread** class. The run() method is overridden by the class within in the Thread class. A thread begins its life inside run() method. The start() method is called when we create an object of our new class to start the execution of a thread. Start() invokes the run() method on the Thread object.

2.7 IO FUNCTIONS

Java performs I/O through Streams. To create input and output operation in java, Stream is linked to a physical layer by java I/O system In generally, a stream means continuous flow of data.

Without having every a part of your code understand the physical, streams are clean way to deal with input/output.

Java encapsulates Stream under java.io package.

Java defines two styles of streams. They are,

1. Byte Stream: gives a convenient means for handling input and output of byte.
2. Character Stream: gives a convenient means for handling input and output of characters. It will be internationalized since the character stream uses Unicode.

Using two abstract class at the top of hierarchy Byte stream is defined by. They're Input Stream and Output Stream.

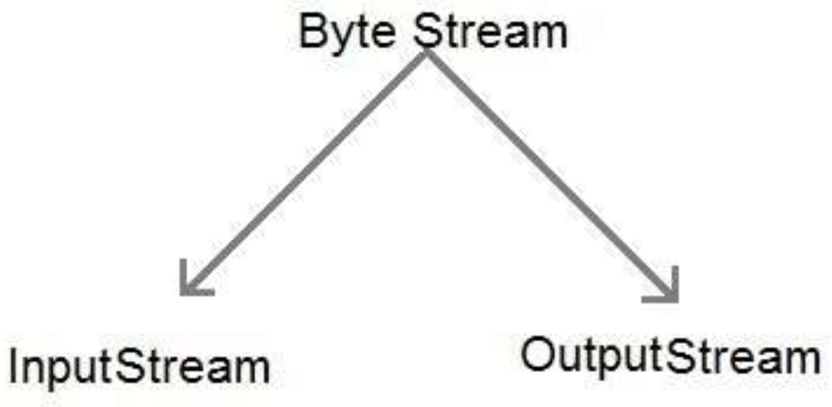


Fig 2.4 Byte Stream

Several concrete classes under these two abstract classes handle various devices like disk files, network connection etc.

Character stream is additionally defined by using two abstract class they are Reader and Writer at the top of hierarchy.

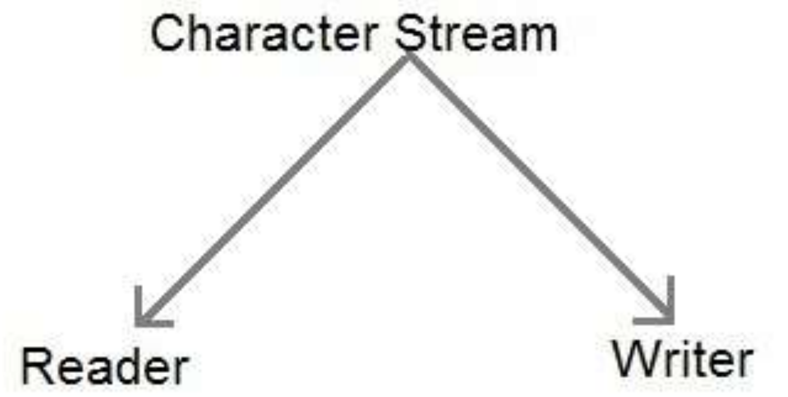


Fig 2.5 Character Stream

Several concrete classes under these two abstract classes handle unicode character.

2.8 JAVA PACKAGES

From the name itself suggests that package could be a pack(group) of classes, interfaces and other packages. In java, to organize and arrange our classes and interfaces packages are used.

We have two **styles of packages in Java**:

1. User defined package: The package created by us is named user-defined package.
2. Built-in package: The built-in packages are already defined package like java.io.*, java.lang.* etc.

2.9 EXCEPTION HANDLING

In Java it is one among the very interesting topic. Exception is nothing but an error event that can happen during the execution of a program and disrupts the traditional flow of the program. In java, robust and object-oriented are the way to handle exception scenarios, referred to as **Java Exception Handling**.

Java being an object-oriented programing language, an **exception object** is created whenever an error occurs while executing a statement and then the traditional flow of the program halts and JRE tries to find someone the raised exception can be handled. Plenty of debugging information within the exception object such as method hierarchy, line number where the exception occurred, type of exception etc. **Throwing the exception** is when the exception occurs in a method, the method of creating the exception object and handing it over to runtime environment.

Java provides specific keywords for exception handling purposes:

1. Throw
2. Throws
3. Try
4. Catch
5. Finally

CHAPTER 3

DESIGN

3.1 DESIGN GOALS

Platform Independent

One of the important key feature of java language that makes java as the most powerful language is the concept of Write-once-run-anywhere (known as the Platform independent). Not a single language is idle to this feature but java is closer to this feature. Provided the platform have the JVM the programs written on one platform can run on any platform.

Simple

There are various features that makes java a simple language. Programs are easy to write and debug because java does not use pointers explicitly. It is much harder to write the java programs that can crash the system but that cannot be said about the other programming languages. Because of the strong memory management, java provides the bug free system. Automatic memory allocation and deallocation system are also present in it.

Object Oriented

To be an Object-Oriented language, any language must follow at least following four characteristics:

- Inheritance: It is the process where new classes created and uses the behaviour of the existing classes by extending them just to reuse the existing code and adding the additional features as needed.
- Encapsulation: It is the mechanism of combining the information and providing the abstraction.
- Polymorphism: As the name suggest one name multiple form, It is the way in which the functions having the same name provides the different functionality based on the signatures of the methods.
- Dynamic binding: Sometimes the knowledge of objects is unknown, about their specific types while writing our code. It is the way in which the specific type at runtime is given maximum functionality to a program.

Though languages like C, C++ have the above the above four characteristics yet they are not fully object-oriented languages because they are structured as well as object-oriented languages. But in case of java, it is a complete Object-Oriented language since object is at the outer most level of data structure in java. Stand-alone methods, constants, and variables are not there in java. Everything in java is object, like even the primitive data types can also be converted into object by using the wrapper class in java.

Robust

The strong memory allocation and automatic garbage collection mechanism is present in the Java. Which provides the powerful exception handling and sort type checking mechanism as compare to other programming languages. Error detection is done by Compiler and run time error is checked by interpreter and makes the system secure from crash. Thanks to all of the above features which makes the java language robust.

Distributed

The HTTP and FTP are the widely used protocols and are developed in java. Rather than writing codes on their local system functions can be called on these protocols by internet programmers and can get access the files from any remote machine on the internet.

Portable

Provided that the system must have interpreter for the JVM the feature Write-once-run-anywhere makes the java language portable. Irrespective of operating system or the processor java also has the standard data size. These features make java a portable language.

Dynamic

The required files can be accessed by users dynamically from a local drive or from a computer thousands of miles away from the user just by the method of connecting with the Internet while executing the java program.

Secure

Java does not use memory pointers explicitly. Sand box is the area where all the programs in java are run. The accessibility options of a class like reading and writing a file to the local disk is determined by security manager. The public key encryption system is used in java to allow the java applications to transmit over the internet in the secure encrypted form. The bytecode Verifier checks the classes after loading.

Performance

Native code usage, and lightweight process called threads is used in java. In the beginning, interpretation of bytecode resulted in slow performance but the adaptive and just in time compilation technique the advance version of JVM is used that improves the performance.

Multithreaded

As we all know Secure, Robust, Portable, dynamic etc are several features of Java; it'll will be more delightful to know another feature of Java which is Multithreaded.

Java is also a Multithreaded programming language. A single program having different threads that is executing independently at the same time is known as multithreading. Instructions are executed by Multiple threads which is according to the program code in a process or a program. Multithreading works similar to the way as multiple processes run on one computer.

It is also one of the very interesting concepts in Java. Not even a single thread disturbs the execution of other thread in multithreaded programs. From the pool of available ready to run threads the thread are obtained and they run on the system CPUs.

Interpreted

We all do know that Java is also an interpreted language. Programs run directly from the source code with an interpreted language such as Java,. The interpreter program reads the source code and translates it on the fly into computations. Thus, Java as an interpreter language depends on an interpreter program.

The language java outshines from other languages as its versatility of being platform independent. The source code that is written and distributed is all platform independent.

Its error debugging quality is another advantage of Java as an interpreted language is. Due to this any error occurring in the program gets traced easily. This is how it is different to work with Java compared to other languages.

Architecture Neutral

The term architectural neutral seems to be weird, but also Java is an architectural neutral language. Developers start thinking distributed by the growing popularity of networks. In the world of network, the applications must be able to migrate easily to different computer systems and not only to computer systems but to a wide variety of hardware architecture and Operating system architectures, it is very essential.

This is done by java compiler by generating byte code instructions, so that it will be easy to interpreted on any machine and to be easily translated into native machine code on the fly. To make a Java application be able to execute or run anywhere on the network, the compiler generates an architecture-neutral object file format and then, given the presence of the Java runtime system the compiled code is executed on many processors. Hence Java was designed to give support to applications on network. This feature of Java has an impact the programming language.

3.2 ALGORITHM

1. In Welcome Page:

- The welcome page has two buttons which asks if the customer is a new member then click on “Register” button.
- or if the customer is already a member and has a register number then click on button “Already Member/Registered”.

2. In Register Page:

- In the register page the customer should enter the ‘number’, their ‘first name’, ‘last name’, ‘mobile number’ and their ‘email-id’.
- After entering the details of the customer it’ll lead to the “item page”.

3. In Already Registered Page:

- If the customer is already a member then it’ll lead to this page, where the “register number” should be entered.
- After entering the register number it’ll lead to item page.
- If the register number doesn’t exist it’ll lead to the “register page” and suggest to register.

4. In Item Page:

- In this page all the details of the items bought by the customer like item code, item name, date it is bought will be entered.
- After entering the details of the items it’ll ask to give feedback.

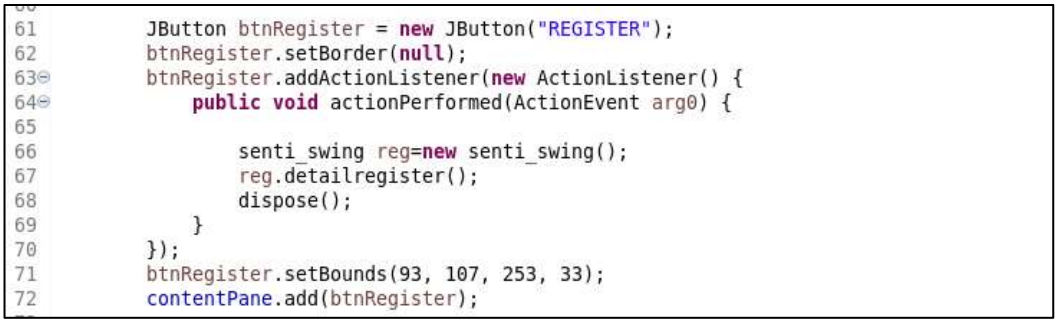
5. In Feedback Page:

- Here the page will ask the customer to enter the registered ID and then give the feedback based on the experience the customer had.
- The feedback given by the customer will be analysed. Based on the analysis the statement is categorised into positive or negative or neutral.
- If the statement is given a positive feedback then a “happy emoji page” will pop up.
- If the statement is given a very positive feedback then a “awesome emoji page” will pop up.
- If the statement is given a neutral feedback then a “satisfactory emoji page” will pop up.
- If the statement is given a negative feedback then a “sad emoji page” will pop up.
- If the statement is given a very negative feedback then a “disappointed emoji page” will pop up.

CHAPTER 4

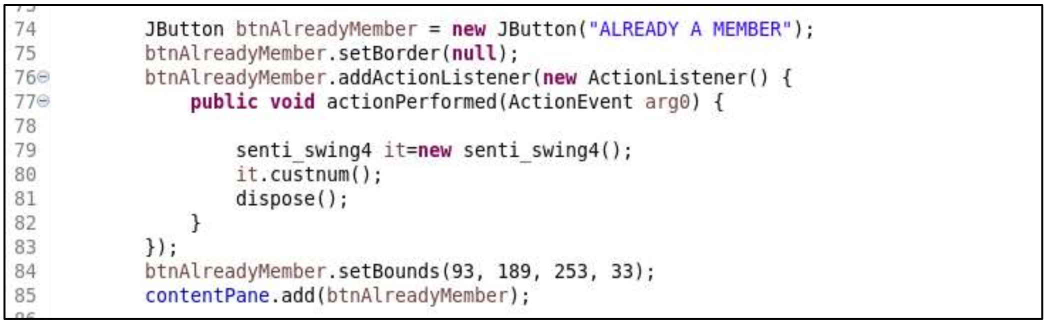
IMPLEMENTATION

This project was implemented in Java language using Eclipse IDE. The main parts of working logic are shown and explained below:



```
        JButton btnRegister = new JButton("REGISTER");
        btnRegister.setBorder(null);
        btnRegister.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent arg0) {

                senti_swing reg=new senti_swing();
                reg.detailregister();
                dispose();
            }
        });
        btnRegister.setBounds(93, 107, 253, 33);
        contentPane.add(btnRegister);
```

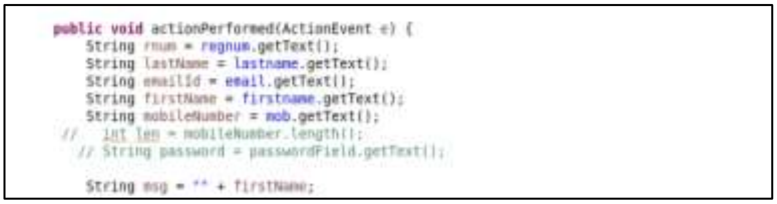
4.1 Register Button



```
        JButton btnAlreadyMember = new JButton("ALREADY A MEMBER");
        btnAlreadyMember.setBorder(null);
        btnAlreadyMember.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent arg0) {

                senti_swing4 it=new senti_swing4();
                it.custnum();
                dispose();
            }
        });
        btnAlreadyMember.setBounds(93, 189, 253, 33);
        contentPane.add(btnAlreadyMember);
```

4.2 Already a member Button

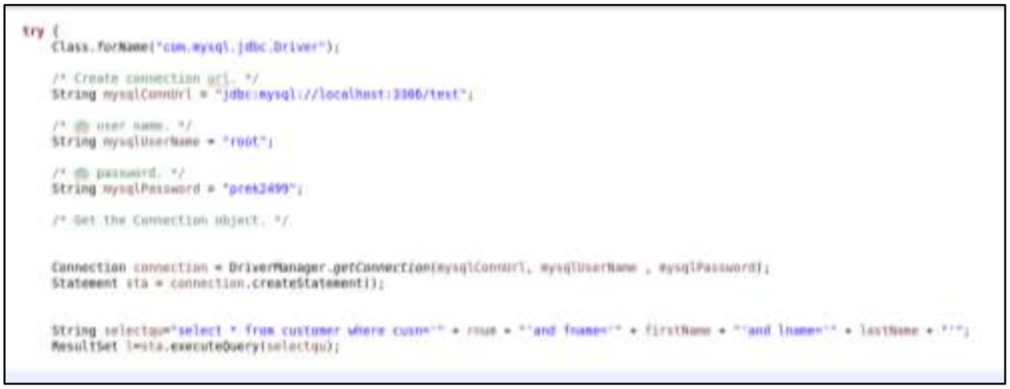
The above two pictures are of the functions that displays two buttons in the Welcome Page. When the button is clicked on. The action is listened and is processed accordingly. If the Register function listens the actions then the module called senti_swing is called else the module senti_swing4 is called.



```
    public void actionPerformed(ActionEvent e) {
        String rnum = regnum.getText();
        String lastName = lastname.getText();
        String emailId = email.getText();
        String firstName = firstname.getText();
        String mobileNumber = mob.getText();
  //    int len = mobileNumber.length();
     // String password = passwordField.getText();

        String msg = "" + firstName;
```

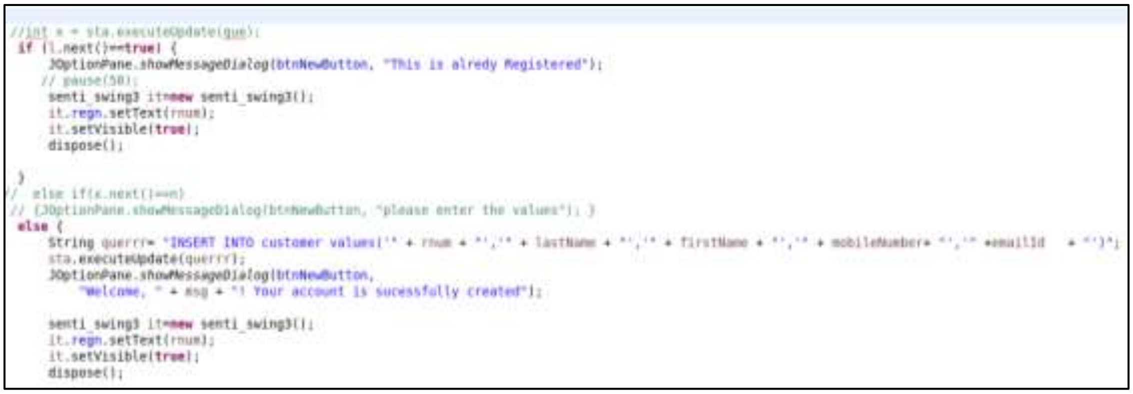
4.3 User entry

After the details of the customer are entered and when the button is pressed the action is performed by storing in other variable.



```
try {
    Class.forName("com.mysql.jdbc.Driver");

    /* Create connection url. */
    String mysqlConnUrl = "jdbc:mysql://localhost:3306/test";

    /* user name. */
    String mysqlUserName = "root";

    /* password. */
    String mysqlPassword = "prek2499";

    /* Get the Connection object. */


    Connection connection = DriverManager.getConnection(mysqlConnUrl, mysqlUserName , mysqlPassword);
    Statement sta = connection.createStatement();


    String selectqu="select * from customer where cusn='" + rnum + "'and fname='" + firstName + "'and lname='" + lastName + "'";
    ResultSet l=sta.executeQuery(selectqu);
```

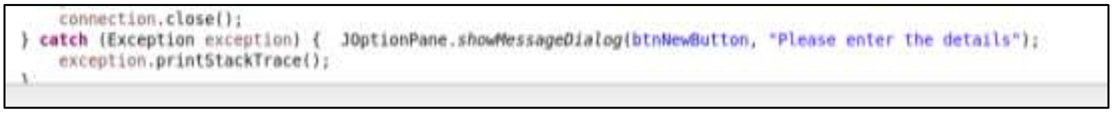
4.4 JDBC connection



```
//int x = sta.executeUpdate(que);
 if (l.next()==true) {
     JOptionPane.showMessageDialog(btnNewButton, "This is alredy Registered");
    // pause(50);
     senti_swing3 it=new senti_swing3();
     it.regn.setText(rnum);
     it.setVisible(true);
     dispose();

 }
//  else if(x.next()==n)
// {JOptionPane.showMessageDialog(btnNewButton, "please enter the values"); }
 else {
     String querrr= "INSERT INTO customer values('" + rnum + "','" + lastName + "','" + firstName + "','" + mobileNumber+ "','" +emailId   + "')";
     sta.executeUpdate(querrr);
     JOptionPane.showMessageDialog(btnNewButton,
         "Welcome, " + msg + "! Your account is sucessfully created");

     senti_swing3 it=new senti_swing3();
     it.regn.setText(rnum);
     it.setVisible(true);
     dispose();
```

4.5 Values into table

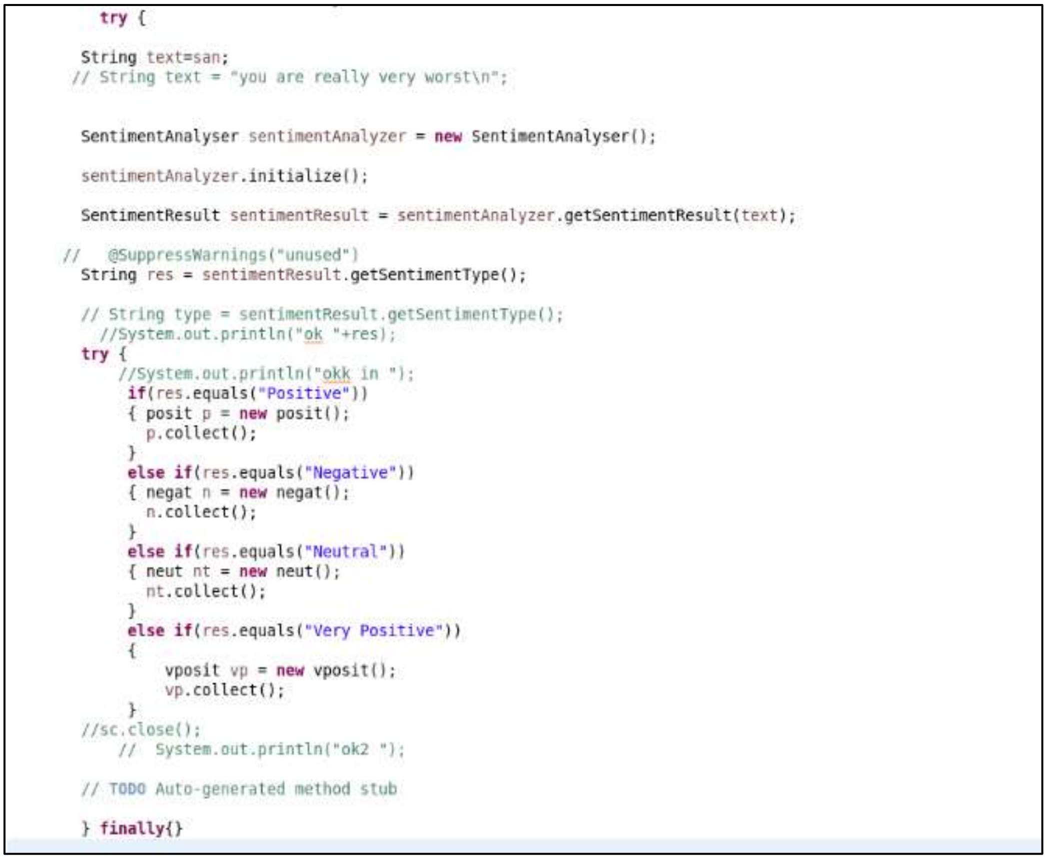
The values entered will be stored in the tables created accordingly. There is also validation done in such a way that the number should be proper with ten digits. Else the message pops up telling to enter the proper phone number or any other details.



```
    connection.close();
} catch (Exception exception) {  JOptionPane.showMessageDialog(btnNewButton, "Please enter the details");
    exception.printStackTrace();
}
```

4.6 Catch message

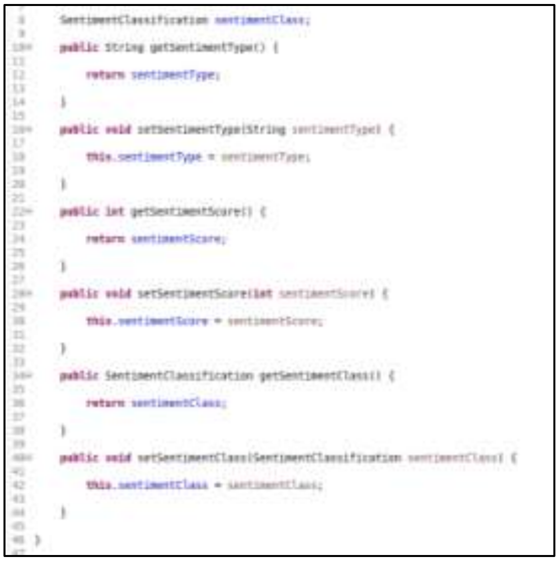
Any error in the inputs or any wrong inputs will throw an error so the catch function catches the error and displays the messages accordingly.



```
      try {

     String text=san;
    // String text = "you are really very worst\n";


     SentimentAnalyser sentimentAnalyzer = new SentimentAnalyser();

     sentimentAnalyzer.initialize();

     SentimentResult sentimentResult = sentimentAnalyzer.getSentimentResult(text);

   //   @SuppressWarnings("unused")
     String res = sentimentResult.getSentimentType();

     // String type = sentimentResult.getSentimentType();
       //System.out.println("ok "+res);
     try {
         //System.out.println("okk in ");
          if(res.equals("Positive"))
          { posit p = new posit();
            p.collect();
          }
          else if(res.equals("Negative"))
          { negat n = new negat();
            n.collect();
          }
          else if(res.equals("Neutral"))
          { neut nt = new neut();
            nt.collect();
          }
          else if(res.equals("Very Positive"))
          {
              vposit vp = new vposit();
              vp.collect();
          }
     //sc.close();
         //  System.out.println("ok2 ");

     // TODO Auto-generated method stub

     } finally{}
```

4.7 Sentiment Analysis

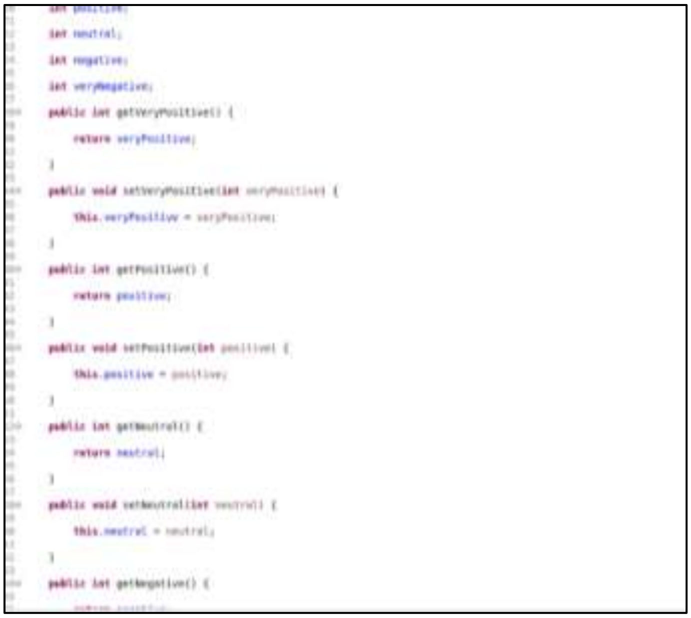
This is the main function of the sentiment analysis where the sentence analysed throws the result and calls the emoji page.



```
    SentimentClassification sentimentClass;

    public String getSentimentType() {

        return sentimentType;

    }

    public void setSentimentType(String sentimentType) {

        this.sentimentType = sentimentType;

    }

    public int getSentimentScore() {

        return sentimentScore;

    }

    public void setSentimentScore(int sentimentScore) {

        this.sentimentScore = sentimentScore;

    }

    public SentimentClassification getSentimentClass() {

        return sentimentClass;

    }

    public void setSentimentClass(SentimentClassification sentimentClass) {

        this.sentimentClass = sentimentClass;

    }

}
```

4.8 Sentiment Result

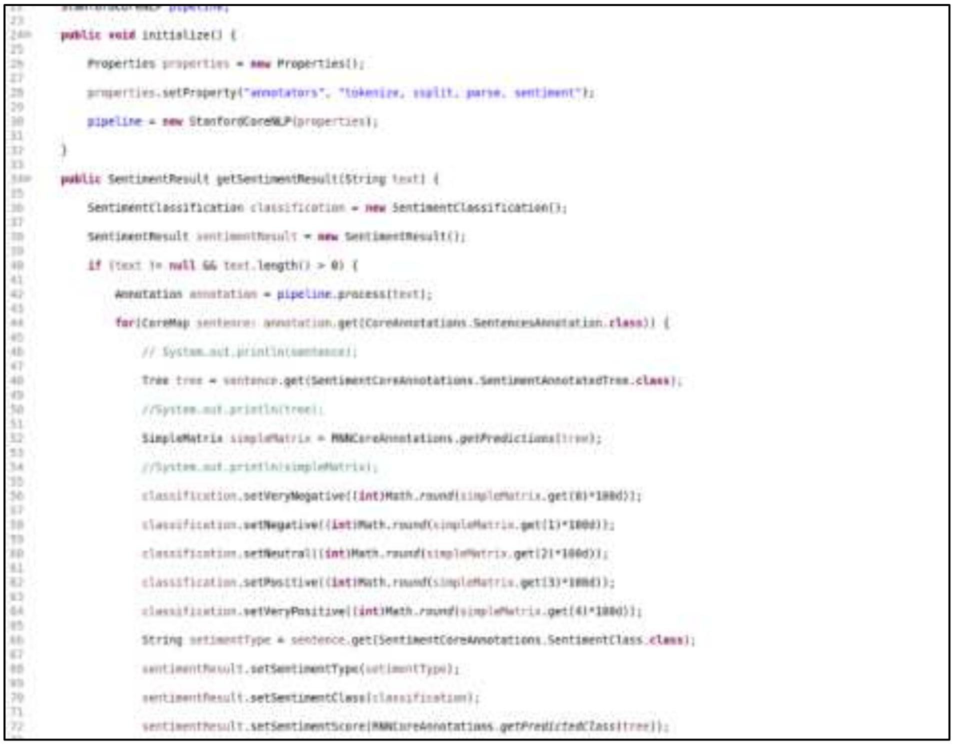
This function stores the result of the sentence is it's positive or negative or neutral sent by the sentiment classification and sentiment analyser modules and the result is sent to the sentiment Analysis function.



```
    int positive;

    int neutral;

    int negative;

    int veryNegative;

    public int getVeryPositive() {

        return veryPositive;

    }

    public void setVeryPositive(int veryPositive) {

        this.veryPositive = veryPositive;

    }

    public int getPositive() {

        return positive;

    }

    public void setPositive(int positive) {

        this.positive = positive;

    }

    public int getNeutral() {

        return neutral;

    }

    public void setNeutral(int neutral) {

        this.neutral = neutral;

    }

    public int getNegative() {

        return negative;
```

4.9 Sentiment Classification

This function classifies the emotion of the sentence given. And the result is sent to sentiment result function



```
    StanfordCoreNLP pipeline;

    public void initialize() {

        Properties properties = new Properties();

        properties.setProperty("annotators", "tokenize, ssplit, parse, sentiment");

        pipeline = new StanfordCoreNLP(properties);

    }

    public SentimentResult getSentimentResult(String text) {

        SentimentClassification classification = new SentimentClassification();

        SentimentResult sentimentResult = new SentimentResult();

        if (text != null && text.length() > 0) {

            Annotation annotation = pipeline.process(text);

            for(CoreMap sentence: annotation.get(CoreAnnotations.SentencesAnnotation.class)) {

                // System.out.println(sentence);

                Tree tree = sentence.get(SentimentCoreAnnotations.SentimentAnnotatedTree.class);

                //System.out.println(tree);

                SimpleMatrix simpleMatrix = RNNCoreAnnotations.getPredictions(tree);

                //System.out.println(simpleMatrix);

                classification.setVeryNegative((int)Math.round(simpleMatrix.get(0)*100d));

                classification.setNegative((int)Math.round(simpleMatrix.get(1)*100d));

                classification.setNeutral((int)Math.round(simpleMatrix.get(2)*100d));

                classification.setPositive((int)Math.round(simpleMatrix.get(3)*100d));

                classification.setVeryPositive((int)Math.round(simpleMatrix.get(4)*100d));

                String setimentType = sentence.get(SentimentCoreAnnotations.SentimentClass.class);

                sentimentResult.setSentimentType(setimentType);

                sentimentResult.setSentimentClass(classification);

                sentimentResult.setSentimentScore(RNNCoreAnnotations.getPredictedClass(tree));
```

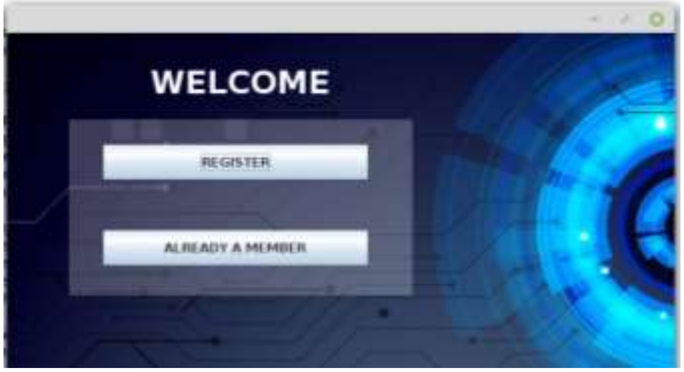
4.10 Sentiment Analyser

This is where the sentence sent is analysed, tokenized, split, parsed and the sentiment is calculated. The percentage of how negative or positive of the sentence is calculated and based on that the sentiment classified is sent to the module sentiment classification.

CHAPTER 5

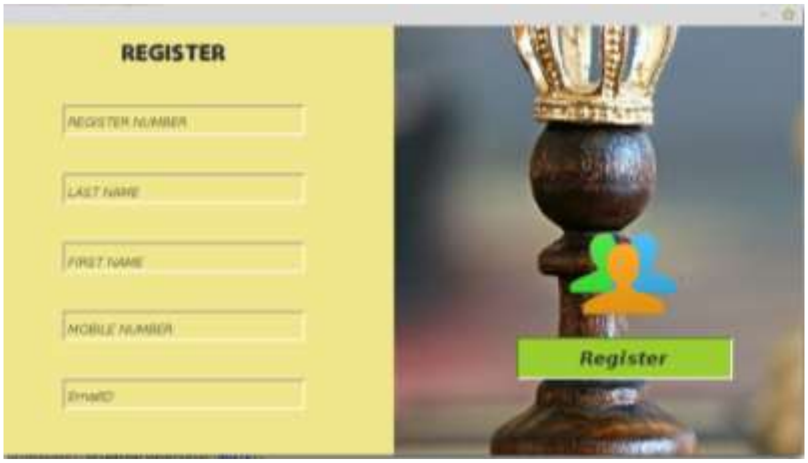
RESULTS

The user on running the software is taken to the following form first:



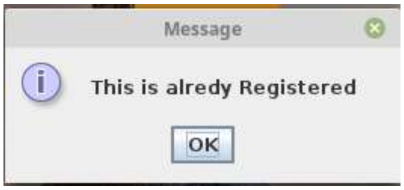
5.1 Welcome Page

The two buttons are displayed and should be clicked on accordingly. Clicking ‘Register’ takes to register form and clicking ‘Already a member’ takes to ‘Enter register number’ page.



5.2 Register page

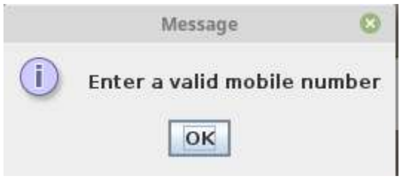
When the ‘Register’ button is clicked on this page opens where the customer details should be entered. And all the details should be entered properly.



This is alredy Registered

5.3 Message

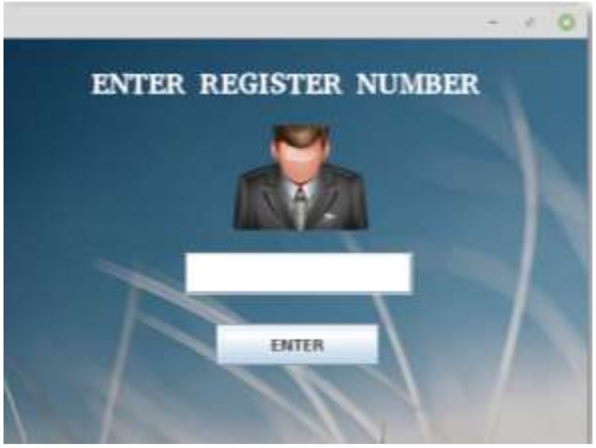
If the registering number is already registered then the message pops up telling it’s already registered and takes to entering items details page directly.



Enter a valid mobile number

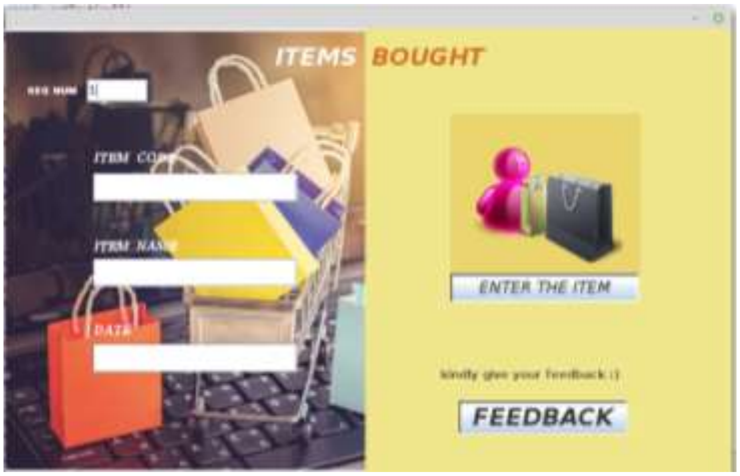
5.4 Phone number validation

This is the message that pops up when the complete phone number is not entered. As the phone number is of ten digits.



5.5 Enter register number

This is the page that opens when you click on ‘Already a member’ button on the welcome page. If the number entered is not registered then the message pops up telling it’s not registered and opens the register page and gives a message telling to register as the number entered wasn’t registered before or the item page opens.



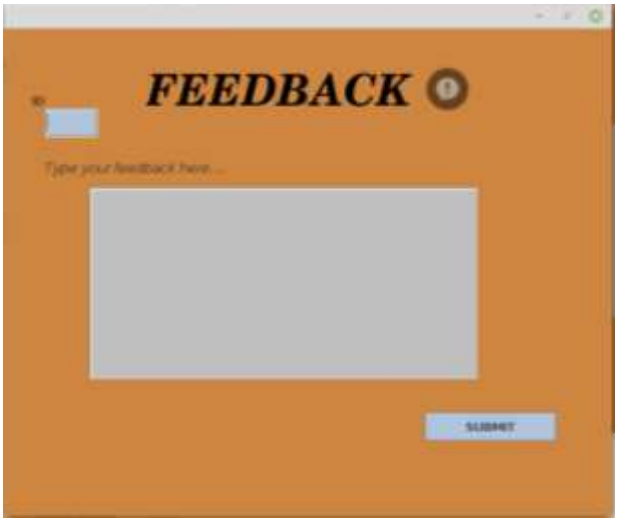
5.6 Item page

This page opens after the register number is all entered. Here the items bought by the customer is entered and will be stored in the database.

Kindly give feedback :)

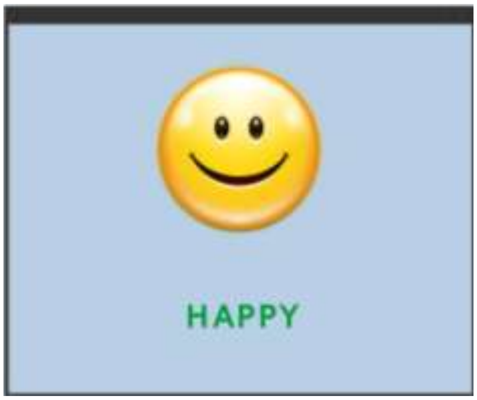
5.7 Message to give Feedback

After the items details are entered and the button is clicked a message pops up asking to give feedback.

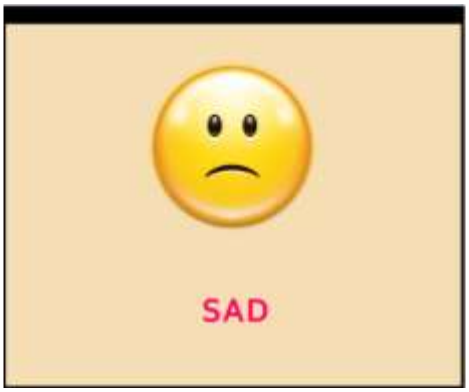


5.8 Feedback page

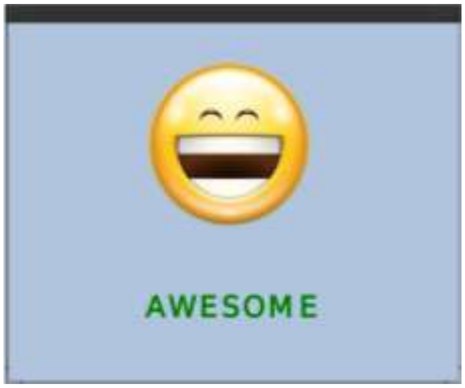
The feedback is entered by the customer and is stored in database and feedback is analysed.



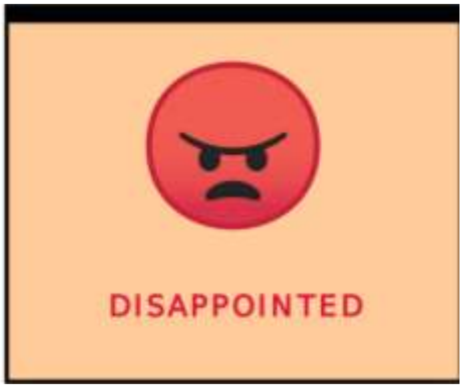
5.9 Positive



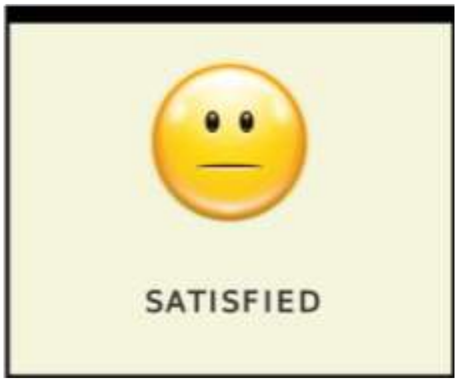
5.10 Negative



5.11 Very Positive



5.12 Very Negative



5.13 Neutral

The above are the forms that pops according to the emotion of the customer based on their feedback given. If the feedback is positive then displays that the customer is happy, if negative then sad, if very positive then awesome, if very negative then disappointed, if the feedback is neutral then displays that customer is just satisfied with the experience.

CHAPTER 6

CONCLUSION

In essence, it is the process of determining the emotional tone behind a series of words given by the public and this helps to gain the understanding of the attitudes, opinions and emotions of the users.

It shows an essential part of market research and customer service approach. Not only you can see what people keeps opinion of the products you sell but also you can see what they think about your competitors too.

The overall experience of the users can be revealed quickly with this approach and can be rectified accordingly. This approach gives a huge benefit in the chance of making the changes for the great marketing of the products they sell.

CHAPTER 7

REFERENCES

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