A Project report on

DETECTING MALACIOUS ACCOUNTS BASED ON ERRONEOUS TRANSACTIONS

Submitted in partial fulfillment of the requirements

for the award of the degree of

BACHELOR OF TECHNOLOGY

in

Computer Science & Engineering

by

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
(B.Tech program accredited by NBA)

SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY: ANANTAPUR
(Accredited by NAAC with 'A' Grade, Affiliated to JNTUA, Approved by AICTE, New Delhi)

2019-2020

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Rotarypuram Village, B K Samudram Mandal, Anantapur – 515701

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Certificate

This is to certify that the project report entitled **DETECTING MALICIOUS ACCOUNTS BASED ON ERRONEOUS TRANSCATIONS** is the bonafide work carried out by **Y.Nafiz** bearing Roll Number **164G1A0557, C.Bushra Anjum** bearing Roll Number **164G1A0516, P.M.Pavani** bearing Roll Number **174G5A0503, I.Kalyan** bearing Roll Number **164G1A0535** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science &Engineering** during the academic year 2019-2020.

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Place:Rotarypuram

EXTERNAL EXAMINER

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DECLARATION

We, Ms Y. Nafiz with reg no: 164g1a0557, Ms C. Bushra Anjum with reg no: 164g1a0516, Ms P.M. Pavani with reg no: 174g5a0503, Mr I. Kalyan with reg no: 164g1a0535 students of SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY, Rotarypuram, hereby declare that the dissertation entitled "CREDIT CARD FRAUD ANALYTICS USING MACHINE LEARNING" embodies the report of our project work carried out by us during IV year Bachelor of Technology in Ms.B.Sujana,M.Tech., Department of CSE, SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY, ANANTAPUR and this work has been submitted for the partial fulfillment of the requirements for the award of the Bachelor of Technology degree.

The results embodied in this project report have not been submitted to any other University of Institute for the award of any Degree or Diploma.

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List of Abbreviations

OSN	Online Social Network
HTML	Hyper Text Markup Language
SQL	Structured Query Language
SRS	Software Requirements Specifications
WORA	Write Once Run Anywhere
API	Application Program Interface
GUI	Graphical User Interface
AWT	Abstract Windowing ToolKit
RWS	Rimfaxa Web Server
JDK	Java Development Kit
JRE	Java Runtime Environment
IDE	Integrated Development Environment
UML	Unified Modeling Language

ABSTRACT

Online social networks gradually integrate financial capabilities by enabling the usage of online ney.They serve as new platforms to host a variety of business activities such as online events,shopping etc. where users can possibly get virtual currency as rewards by participating such events.

Both OSNs and business partners are significantly concerned when attackers instrument a set of accounts to collect money from various accounts which are used by the registered users.By interrupting the server,unauthorized entry,bad history.

we propose a novel system,namely ProGuard, to accomplish this objective by systematically integrating features that characterize accounts from these perspectives including their general behaviors, their and the usage of their currency.

INTRODUCTION

Online social networks (OSNs) that integrate virtual currency serve as an appealing platform for various business activities, where online, interactive promotion is among the most active ones. specically, a user, who is commonly represented by her OSN account, can possibly get reward in the form of virtual currency by participating online promotion activities organized by business entities. She can then use such reward in various ways such as online shopping, transferring it to others, and even exchanging it for real currency. Suchvirtualcurrencyenabled online promotion model enables enormous outreach, offers directnancial stimuli to end users, and meanwhile minimizes the interactions between business entities and financial institutions. As a result, this model has shown great promise and gained huge prevalence rapidly. However, it faces a signicant threat attackers can control a large number of accounts, either by registering new accounts or compromising existing accounts, to participate in the online promotion events for virtual currency. Such malicious activities will fundamentally undermine the effectiveness of the promotion activities, immediately voiding the effectiveness of the promotion investment from business entities and meanwhile damaging ONSs' reputation. Moreover, a large volume of virtual currency, when controlled by attackers, could also become a potential challenge against virtual currency regulation.

It therefore becomes of essential importance to detect accounts controlled by attackers in online promotion activities. In the following discussions, we refer to such accounts as malicious accounts. The effective detection of malicious accounts enables both OSNs and business entities to take mitigation actions such asbanning these accounts or decreasing the possibility to reward these accounts. However, designing an effective detection method is faced with a few signicant.

CHAPTER - 1

1.1 Project Overview

Detecting Malicious Accounts in SocialNetworkBased Online Promotions challenges. First, attackers do not need to generate malicious content (e.g., phishing URLs and malicious executables) tolaunch successful attacks. Comparatively,attackers can effectively perform attacks by simply clicking links offered by business entities or sharing the benign content that is originally distributed by business partners. These actions themselves do not perceivably differentiate from benign accounts. Second, successful attacks do not need to depend on social structures (e.g.,``following" or ``friend" relationship in popular social networks). To be more specific, maintaining active social structures does not benefit to attackers, which is fundamentally different from popular attacks such as spammers in online social networks. These two challenges make the detection of such malicious OSN accounts fundamentally different from the detection of traditional attacks such as spamming and phishing. As a consequence, it is extremely hard to adopt existing methods to detect spamming and phishing accounts.

In order to effectively detect malicious accounts in online promotion activities by overcoming the aforementioned challenges, we have designed a system.Itemploys a collection of behavioral features to profile an account that participates in an online promotion event. These features aim to characterize an account from three aspects including i) its general usage profile, ii) how an account collects virtual currency, and iii) how the virtual currency is spent.Itfurther integrates these features using a statistical classifier so that they can be collectively used to discriminate between those accounts controlled byattackers and benign ones. To the best of our knowledge, this work represents there effort to systematically detect malicious accounts used for online promotion activity participation. Our experimental results have demonstrated that itcan achieve a high detection rate of 96.67% with a very low false positive rate of 0.3%.

1.2 Objectives :

- The web application can be developed by using java language.
- The detection can be performed by using statistical classifier.

CHAPTER – 2

LITERATURE SURVEY

Numerous literatures pertaining to detecting the malicious accounts in online social network have been published already and are available for public usage.A comprehensive understanding of detecting and blocking malicious accounts can be helpful for us to solve the problem of identifying the malicious accounts.

2.1 Detecting Automation of Twitter Accounts :

AUTHORS: Chu,S.Gianvecchio,H.Wang,andS.Jajodia

Twitter is a new web application playing dual roles of online social networking and microblogging.Users Communicate with each other by publishing text-based posts.The popularity and open structure of twitter have attracted a large number of automated programs,known as bots,which appear to be a double-edged sword to twitter.Legitimate bots generate a large amount of benign tweets delivering news and updating feeds,while malicious bots spread spam or malicious contents.More interestingly,in the middle between human and bot,there has emerged cyborg referred to either bot-assisted human or human-assisted bot.To assist human users in identifying who they are interacting with,this paper focuses on the classification of human,bot,and cyborg accounts on twitter.We first conduct a set of large-scale measurements with acolletion of over 500000 accounts.Weobsereve the difference among human,bot,and cyborg in terms of tweeting behavior,tweetcontent,and account properties.Based on the measurement results,we propose a classification system that includes the following four parts:1) an entropy-based component,2) a spam detection component,and 4) a decision maker.It uses the combination of features extracted from an unknown user to determine the likelihood of being a human,bot, or cyborg.Our experimental evaluation demonstrates the efficacy of the proposed classification system.

2.2 Intelligent financial fraud detection:A comprehensive review

AUTHORS: WestandM.Bhattacharya

This survey paper categorizes, compares,and summarizes the data set, algorithm and performance measurement in almost all the published technical and review articles in automated accountings fraud detection.Most researches regard fraud companies and non-fraud companies as data subjects,Eigen value covers auditor data,company governance data,financial statement data,industries,trading data and other categoires.Most data in earlier research were auditor data;Later research estabkish model by using sharing data and public statement data.Company governance data have been widely used.It is generally belived that ratio data is more effective than accontingdata;Seldom research on time Series Data Mining were conducted.The retrieved literature used mining algorithms including statistical test,regressionanalysis,neuralnetworks,decisiontree,Bayesiannetwork,andstackvariablesetc..Regression Analysis is widely used on hiding data.Generally the detecting effect and accuracy of NN are superior to regression model.General conclusion is that model detecting is better than auditor detecting rate without assisting.There is a need to introduce other algorithms of no tag data mining .Owing to the small size of fraud samples,some literature reached conclusion based on training samples and may overestimated the effect of model.

2.3 EXISTING SYSTEM :

- Lin et al. ranked the importance of fraud factors used in financial statement fraud detection, and investigated the correct classification rates of three algorithms including Logistic Regression, Decision Trees, and Artificial Neural Networks.
- Throckmorton et al. proposed a corporate financial fraud detection method based on combined features of financial numbers, linguistic behavior, and non-verbal vocal.
- Compared to the studied financial fraud detection problems, account behaviors of collecting and using the virtual currency in online promotion activities are almost completely different with traditional financial systems since they do not only involve financial activities but also networking and online promotion activities
- Lee et al. devised a method to first track HTTP redirection chains initiated from URLs embedded in an OSN message, then grouped messages that led to webpages hosted in the same server, and finally used the server reputation to identify malicious accounts.

2.3.1 DISADVANTAGES OF EXISTING SYSTEM :

- Attackers can control alarge number of accounts, either by registering new accountsor compromising existing accounts, to participate in the online promotion events for virtual currency.
- Such malicious activities will fundamentally undermine the effectiveness of the promotion activities, immediately voiding the effectiveness of the promotion investment from business entities and meanwhile damaging ONSs' reputation.
- Moreover, a large volume of virtual currency, when controlled by attackers, could also become a potential challenge against virtual currency regulation.
- None of existing methods is applicable to detecting malicious accounts in online promotion activities.

2.4 PROPOSED SYSTEM :

- We have designed a system,itemploys a collection of behavioral features to profile an account that participates in an online promotion event.
- These features aim to characterize an account from three aspects including i) its general usage profile, ii) how an account collects virtual currency, and iii) how the virtual currency is spent.
- It further integrates these features using a statistical classifier so that they can be collectively used to discriminate between those accounts controlled by attackers and benign ones.
- Our work aims to address a new problem caused by the new trend of integrating online social networks and financial activities. It features new capability of fusing features from both networking and financial aspects for detection. Nevertheless, we believe our method and existing approaches can complement each other to improve the security of online social networks.

2.4.1 ADVANTAGES OF PROPOSED SYSTEM :

- To the best of our knowledge, this work represents the first effort to systematically detect malicious accounts used for online promotion activity participation.
- We have evaluated our system using data collected from online social network that uses a widely-accepted virtual currency (i.e., Q coin), to support online financial activities for active accounts.
- Our experimental results have demonstrated that can achieve a high detection rate of 96.67% with a very low false positive rate of 0.3%.

CHAPTER -3

FEASIBILITY STUDY

Feasibility analysis is an assessment of the practicality of a proposed plan or method. And it reduces the development risks. The major areas are considered in feasibility analysis are as follows.

The feasibility study concerns with the considerations made to verify whether the system is to fit to be developed in all terms. Once an idea to develop software is put forward the question that arises first will pertain to the feasibility aspects. It involves developing and understanding of the selected program.

An important outcome of preliminary investigation is the determination that the system request is feasible. This is possible only if it is feasible within limited resource and time. The different feasibilities that have to be analyzed are

- Operational Feasibility
- Economic Feasibility
- Technical Feasibility

3.1 Operational Feasibility

Operational Feasibility deals with the study of prospects of the system to be developed. This system operationally eliminates all the tensions of the Admin and helps him in effectively tracking the project progress. This kind of automation will surely reduce the time and energy, which previously consumed in manual work. Based on the study, the system is proved to be operationally feasible.

3.2 Economic Feasibility

Economic Feasibility or Cost-benefit is an assessment of the economic justification for a computer based project. As hardware was installed from the beginning & for lots of purposes thus the cost on project of hardware is low. Since the system is a network based, any number of employees connected to the LAN within that organization can use this tool from at anytimes. The Virtual Private Network is to be developed using the existing resources of the organization. So the project is economically feasible.

3.3 Technical Feasibility

According to Roger S. Pressman, Technical Feasibility is the assessment of the technical resources of the organization. The organization needs IBM compatible machines with a graphical web browser connected to the Internet and Intranet. The system is developed for platform Independent environment. Java Server Pages, JavaScript, HTML, SQL server and WebLogic Server are used to develop the system. The technical feasibility has been carried out. The system is technically feasible for development and can be developed with the existing facility.

CHAPTER -4

REQUIREMENTS SPECIFICATIONS

Software Requirement Specification is the starting point of the software developing activity. As system yow more complex it became evident that the goal of the entire system cannot be easily comprehended. Hence the need for the requirement phase arose. The software is initiated by the client needs. The SRS is the means of translating the ideas of the minds of the clients (the input) into a formal document (the output of the requirement phase). The SRS phase consists of two basic activities:

The process is order and more nebulous of two, deals with understand the problem, the goal and constraints. Here, the focus is on specifying what has been found giving analysis such as representation, specification languages and tools, and checking the specifications are addressed during this activity. The requirements phase terminates with the production of validate SRS document. Producing the SRS document is the basic goal of this phase. The software Requirements Specification begins the translation process that converts the software requirements into the language the developers will use. The SRS draws on the use-cases from the User Requirement Document and analyses the situations, and omissions before development progresses significantly under mistaken assumptions. To run our project on a specified computer, that must configure the following hardware and software requirements.

4.1 Hardware Requirements:

- System : Pentium Dual Core.
- Hard Disk : 120 GB
- Ram : 1 GB

4.2 Software Requirements:

- Operating system : Windows 7.
- Coding Language : JAVA/J2EE
- Tool : Netbeans 7.2.1
- Database : MYSQL

After analyzing the requirements of the task to be performed, the next step is to analyze the problem and understand its context. The first activity in the phase is studying the existing system and other is to understand the requirements and domain of the new system. Both the activities are equally important, but the first activity serves as a basis of giving the functional specifications and then successful design of the proposed system. Understanding the properties and requirements of a new system is more difficult and requires creative thinking and understanding of existing running system is also difficult, improper understanding of present system can lead diversion from solution.

CHAPTER -5
TECHNOLOGY

5.1 Language Used :

The programming language that was used in this Anomaly detection project is Java. The implementation of source code was done through Java. Java is a general-purpose programming language that is class-based, object-oriented, and designed to have as few implementation dependencies as possible. It is intended to let applicationdevelopers write once, run anywhere (WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.

5.1.1 HISTORY OF JAVA

James Gosling, Mike Sheridan, and Patrick Naughton initiated the Java language project in June 1991. Java was originally designed for interactive television, but it was too advanced for the digital cable television industry at the time. The language was initially called *Oak* after an oak tree that stood outside Gosling's office. Later the project went by the name *Green* and was finally renamed *Java*, from Java coffee, the coffee from Indonesia. Gosling designed Java with a C/C++-style syntax that system and application programmers would find familiar.

Sun Microsystems released the first public implementation as Java 1.0 in 1996. It promised Write Once, Run Anywhere (WORA) functionality, providing no-cost run-times on popular platforms. Fairly secure and featuring configurable security, it allowed network- and file-access restrictions. Major web browsers soon incorporated the ability to run Java applets within web pages, and Java quickly became popular. The Java 1.0 compiler was re-written in Java by Arthur van Hoff to comply strictly with the Java 1.0 language specification. With the advent of Java 2 (released initially as J2SE 1.2 in December 1998 – 1999), new versions had multiple configurations built for different types of platforms. J2EE included technologies and APIs for enterprise applications typically run in server environments, while J2ME featured APIs optimized for mobile applications. The desktop version was renamed J2SE. In 2006, for marketing purposes, Sun renamed new J2 versions as *Java EE*, *Java ME*, and *Java SE*, respectively.

5.1.2 Features of Java

Java provides lot of Features that are listed below:

- **Simple:**

  Java is very easy to learn, and its syntax is simple, clean and easy to understand.

- **Object-Oriented:**

  Java is an object-oriented programming language. Everything in Java is an object. Object-oriented means we organize our software as a combination of different types of objects that incorporates both data and behaviour.

- **Platform Independent:**

  Java is platform independent because it is different from other languages like C, C++, etc. which are compiled into platform specific machines while Java is a write once, run anywhere language. A platform is the hardware or software environment in which a program run.

- **Secured:**

  Java is best known for its security. With Java, we can develop virus-free systems.

- **Robust:**Robust simply means strong. Java is robust because:
  - It uses strong memory management.
  - There is a lack of pointers that avoids security problems.
  - There is automatic garbage collection in java which runs on the Java Virtual Machine to get rid of objects which are not being used by a Java application anymore.
  - There are exception handling and the type checking mechanism in Java. All these points make Java robust.

- **ArchitectureNeutral:**Java is architecture neutral because there are no implementation dependent features, for example, the size of primitive types is fixed.

- **Portable:**Java is portable because it facilitates you to carry the Java bytecode to any platform. It doesn't require any implementation.

- **High Performance:**Java is faster than other traditional interpreted programming languages because Java bytecode is "close" to native code. It is still a little bit slower than a compiled language (e.g., C++). Java is an interpreted language that is why it is slower than compiled languages, e.g., C, C++, etc.
- **Distributed:** Java is faster than other traditional interpreted programming languages because Java bytecode is "close" to native code. It is still a little bit slower than a compiled language (e.g., C++). Java is an interpreted language that is why it is slower than compiled languages, e.g., C, C++, etc.
- **Multi-threaded:**A thread is like a separate program, executing concurrently. We can write Java programs that deal with many tasks at once by defining multiple threads. The main advantage of multi-threading is that it doesn't occupy memory for each thread. It shares a common memory area. Threads are important for multimedia, Web applications, etc.
- **Dynamic:**Java is a dynamic language. It supports dynamic loading of classes. It means classes are loaded on demand. It also supports functions from its native languages, i.e., C and C++.Java supports dynamic compilation and automatic memory management (garbage collection).

5.1.3 Applications of Java:Various types of applications that runs on Java are as follows:

- **Desktop GUI Applications:**Java provides GUI development through various means like Abstract Windowing Toolkit (AWT), Swing and JavaFX. While AWT contains a number of pre-constructed components such as menu, button, list, and numerous third-party components, Swing, a GUI widget toolkit, additionally provides certain advanced components like trees, tables, scroll panes, tabbed panel and lists. JavaFX, a set of graphics and media packages, provides Swing interoperability, 3D graphic features and self-contained deployment model which facilitates quick scripting of Java applets and applications.
- **Mobile Applications:**Java Platform, Micro Edition (Java ME or J2ME) is a cross-platform framework to build applications that run across all Java supported devices, including feature phones and smartphones. Further, applications for Android, one of the most popular mobile operating systems, are usually scripted in Java using the Android Software Development Kit (SDK) or other environments.
- **Embedded Systems:**Embedded systems, ranging from tiny chips to specialized computers, are components of larger electromechanical systems performing dedicated tasks. Several devices, such as SIM cards, blue-ray disk players, utility meters and televisions, use embedded Java technologies. According to Oracle, 100% of Blu-ray Disc Players and 125 million TV devices employ Java.

- **Web Applications:**Java provides support for web applications through Servlets, Struts or JSPs. The easy programming and higher security offered by the programming language has allowed a large number of government applications for health, social security, education and insurance to be based on Java. Java also finds application in development of e-commerce web applications using open-source e-commerce platforms, such as Broadleaf.
- **Web Servers and Application Servers:**The Java ecosystem today contains multiple Java web servers and application servers. While Apache Tomcat, Simple, Jo!, Rimfaxe Web Server (RWS) and Project Jigsaw dominate the web server space, WebLogic, WebSphere, and Jboss EAP dominate commercial application server space.
- **Enterprise Applications:**Java Enterprise Edition (Java EE) is a popular platform that provides API and runtime environment for scripting and running enterprise software, including network applications and web-services. Oracle claims Java is running in 97% of enterprise computers. The higher performance guarantee and faster computing in Java has resulted in high frequency trading systems like Murex to be scripted in the language. It is also the backbone for a variety of banking applications which have Java running from front user end to back server end.
- **Scientific Applications:**Java is the choice of many software developers for writing applications involving scientific calculations and mathematical operations. These programs are generally considered to be fast and secure, have a higher degree of portability and low maintenance. Applications like MATLAB use Java both for interacting user interface and as part of the core system.

5.2 Java Installation Procedure:

Java Development Kit (JDK) allows you to code and run Java Java Development Kit(JDK) allows you to code and run Java programs. It's possible that you install multiple JDK versions on the same PC. But Its recommended that you install only latest version.

The Java Development Kit(JDK) can be downloaded form

http://oracle.com/technetwork/java/javase/downloads/index.html

The Eclipse IDE can be downloaded form

http://www.eclipse.org/downloads/.

The Android platform SDK starter package can be downloaded from

http://developer.android.com/sdk/index.html.

The Android Development Tools (ADT) Plug-in can be downloaded from http://developer.android.com/sdk/eclipse-adt.html. The plug-in contains project templates and Eclipse tools that help in creating and managing Android projects.

The Android SDK is not a full development environment and includes only the core SDK tools, which are used to download the rest of the SDK components. This means that after installing the Android SDK Tools, you need to install Android platform tools and the other components required for developing Android applications.

After downloading Android SDK Tools package, double click it to initiate the installation process. The Android SDK Manager window opens. The dialog boxes you see from now are form windows installer, and the screens may vary from other operating system installers.

Downloading the JDK

To download the Java Development Kit (JDK), launch your web browser (e.g. Internet Explorer) and go to this address:

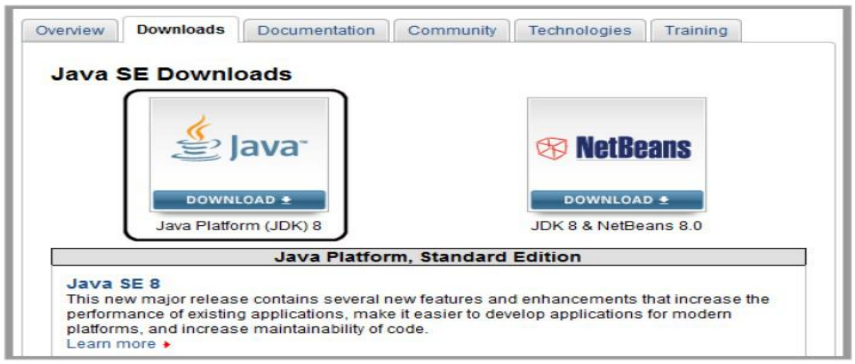

Figure 5.2.1 Java SE download

http://www.oracle.com/technetwork/java/javase/downloads/index.html. This page shows many download options. The top of the page shows the most current JDK download options (e.g. JDK 8 or JDK 9).

You want to download the “Java Platform (JDK)”, so click on the download button circled above. Note that more recent versions of Java may be available by the time you begin your course. It is OK to install the latest Java version for your course work. You may, however, choose to install an earlier version (e.g. Java 7 or Java 8) by scrolling down on this same page.

Figure 5.2.2 Java SE 7u51

After clicking on the Download button for the Java Platform, you will arrive at the download page.

Scroll down to the first download block which contains individual links for each operating system. You need to click the “Accept License Agreement” radio button and then click on the link for your particular operating system. Choose the “Windows x86” line for 32-bit Windows or the “Windows x64” line for 64- bit Windows. Your exact filenames may vary depending on the actual JDK version.

Figure 5.2.3 Java SE Development Kit

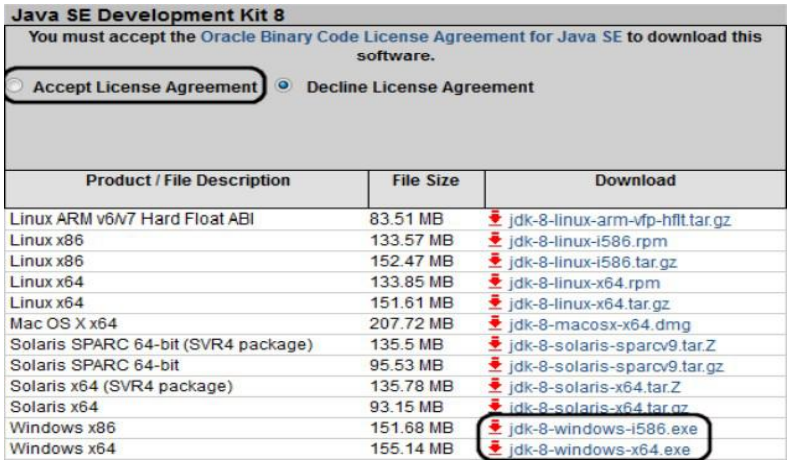

Figure 5.2.4 Development kit

As soon as you click to download the file, a pop-up window will appear with options to “Save”, “Save File”, or similar phrasing. The look of this window will depend on the version of Windows and the Internet browser you are using to download the file. The following screenshot is from Mozilla Firefox:

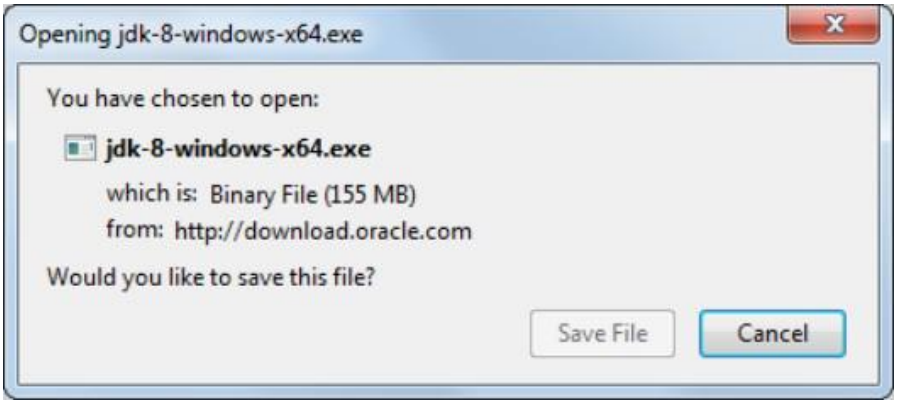

Figure 5.2.5 Opening jdk-8-windows

Select “Save File” or “Save” to save the file to a location on your local hard drive. You can save it to your Desktop or some other file folder. Remember this location so you can find it later! Some browsers may have a very different download experience, so follow the windows for your browser. Oracle updates the exact version of the JDK frequently. Our examples show JDK version 8.0, but keep in mind that the version available to you at the time of download will be different as Oracle releases new patches. Once the file is saved, use your Windows Explorer to find and run the program by double-clicking in it. Depending on your version of Windows and security settings you may get a security popup; click on “Run” or “OK” to continue.

When setup is launched you should see the following screen: This is the first screen in the install process. Click “Next” to continue.

Figure 5.2.6 Java Installiation wizard

This next screen lists all of the possible JDK options that can be installed. Since we will be covering the basics of Java in this course, you can just accept the defaults and simply click on the “Next” button to continue. There is no need to make any changes on this screen.

Write down the “Install to:” location as you will need this path for a later activity!

The next screen will display a simple progress bar while the JDK files are being installed. This process could take anywhere from seconds to minutes, depending on the speed of your computer

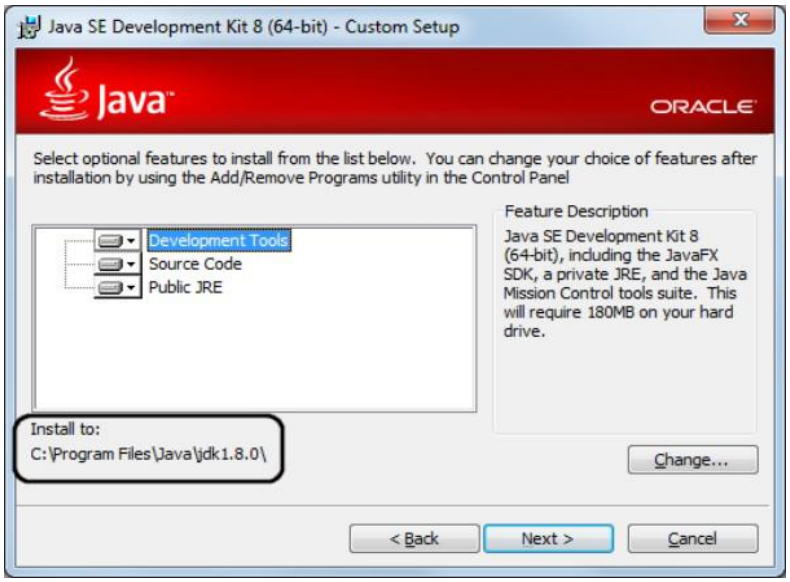

Figure 5.2.7 Java custom setup

When the JDK is finished installing, the installation program will install the JRE(Java Runtime Environment) files. The screen above will allow you to choose the directory where the JRE will be located. We recommend that you allow the files to install in the default directory, as shown below.

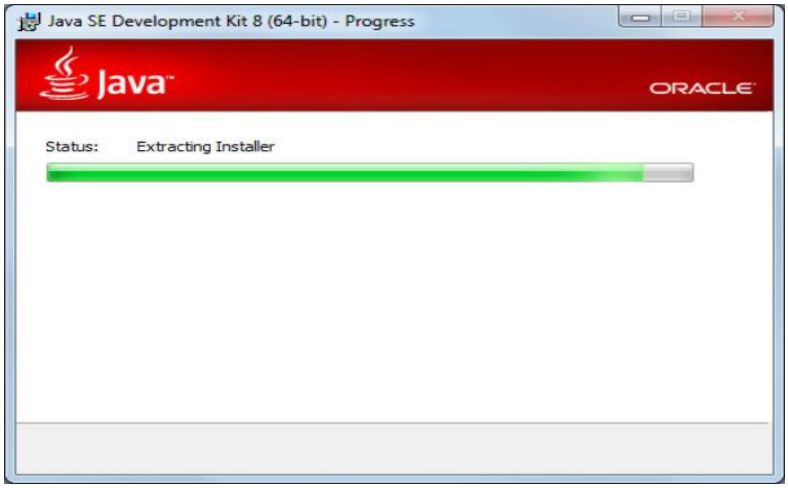

Figure 5.2.8 Java Extracter

Once you choose the “Next” button, the installation will display another progress bar. This will show the progress of the installation of the JRE files.

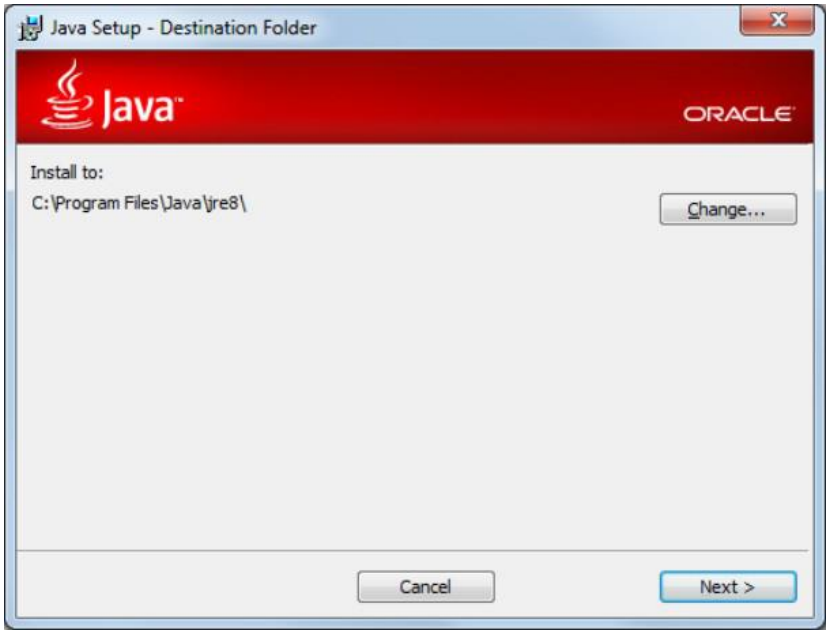

Figure 5.2.9 Destination Folder

The next screen will simply show the progress of your JRE installation. In this first step, the installation program will automatically download additional files from the Oracle website. This is a large program and will take some time!

Figure 5.2.10 Java setup

At this point,the installation of the JDK files is complete.Click on the “Close” button on this screen,to Finish the setup.

Figure 5.2.11 Java SE development kit

Registration of the JDK with Oracle is not required. If you are prompted for registration of any kind, you can cancel out of or close those windows. Congratulations! You have finished the installation of the JDK and JRE in your Windows computer.

- In our project, we use NetBeans IDE.

5.3 NetBeans IDE:

NetBeans is an integrated development environment (IDE) for Java. NetBeans allows applications to be developed from a set of modular software components called modules. NetBeans runs on Windows, macOS, Linux and Solaris. In addition to Java development, it has extensions for other languages like PHP, C, C++, HTML5, and JavaScript. Applications based on NetBeans, including the NetBeans IDE, can be extended by third party developers.

5.3.1 NetBeans IDE Installation Procedure:

Step-1: There are several NetBeans version, now we will install the NetBeans 7.2.1 by downloading the setup from netbeans.org

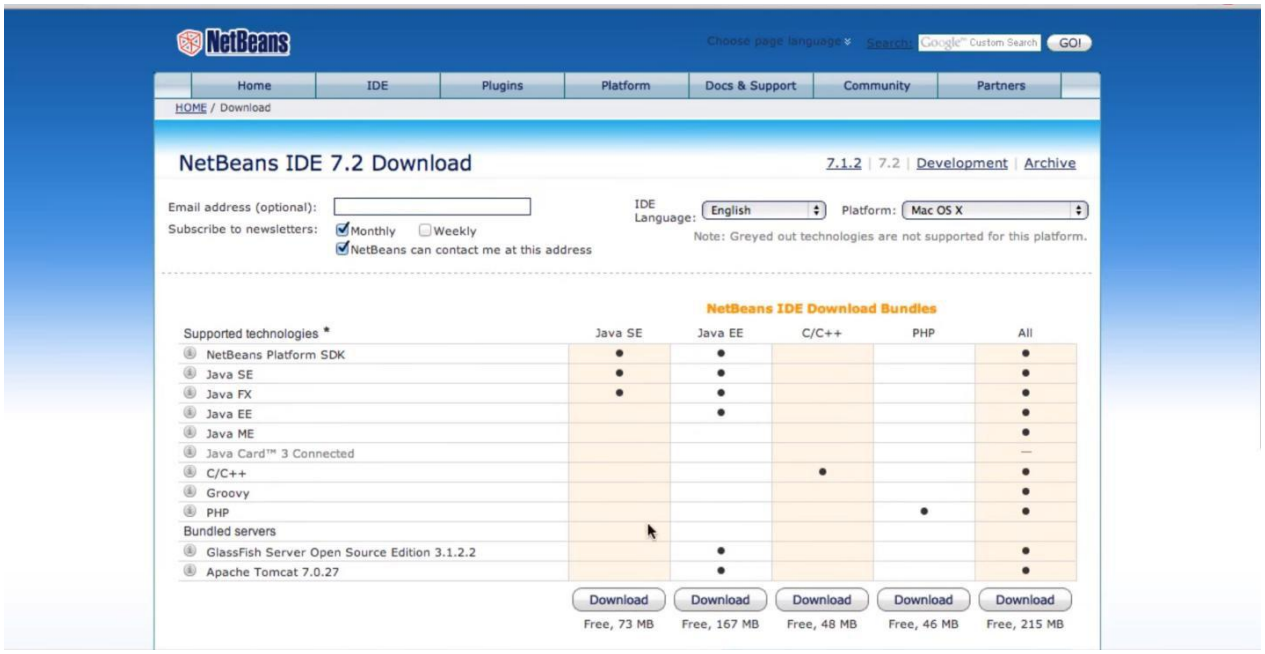

Figure 5.3.1 Install netbeans 7.2.1

Step-2: Double-click the downloaded executable to run the installer.

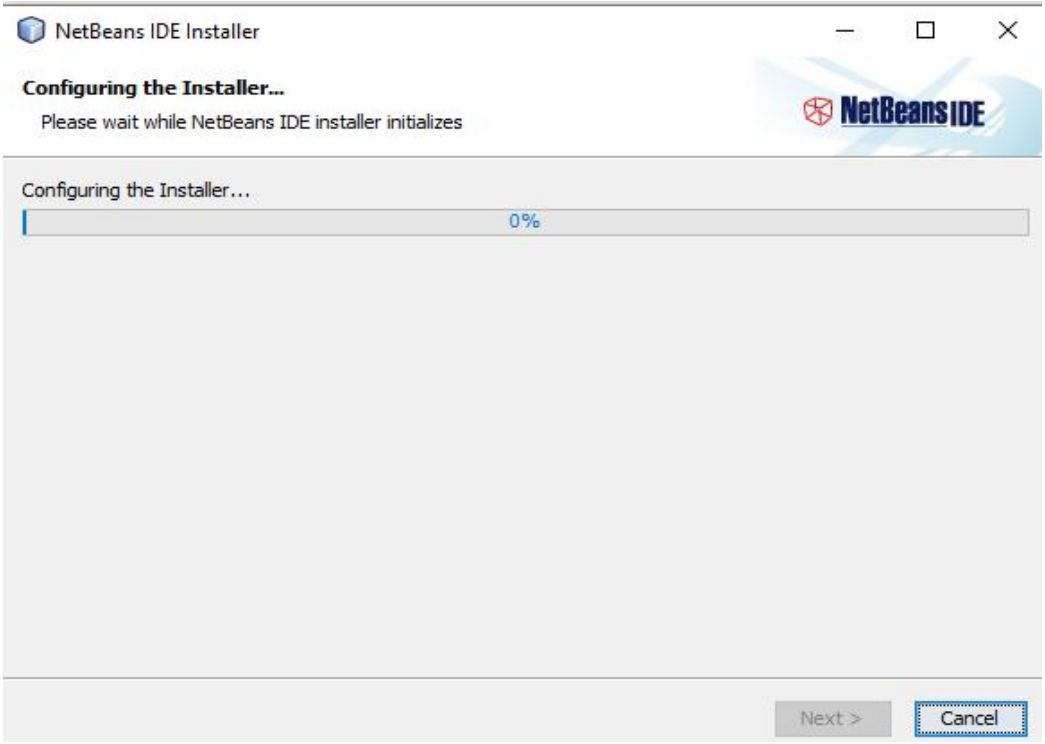

Figure 5.3.2 : Run Install

- After the configuration, the installation will start.

Step-3: The installer will ask to select the application server to install along with the IDE . Select the first one.

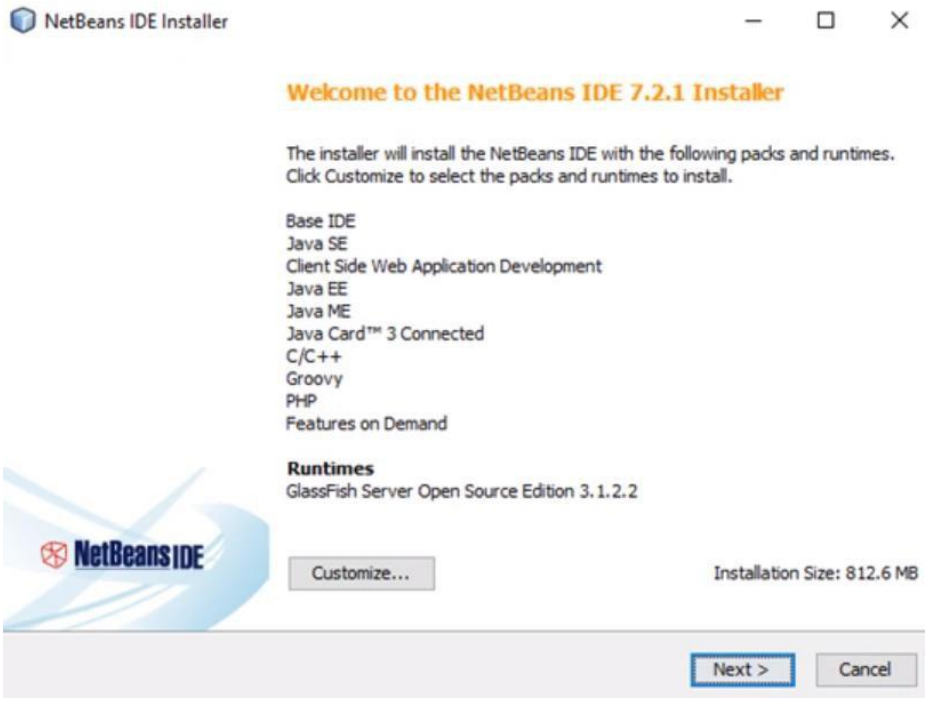

Figure 5.3.3: Select application server to install

- Accept the license agreement and click next.

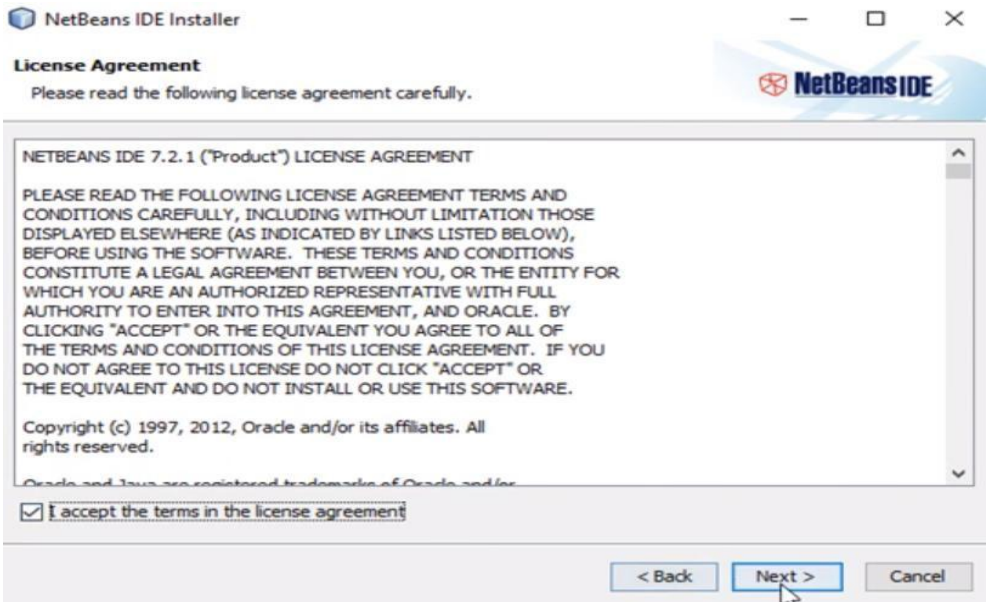

Figure 5.3.4 : Accept license agreement

- Also accept the license agreement for installing Junit.

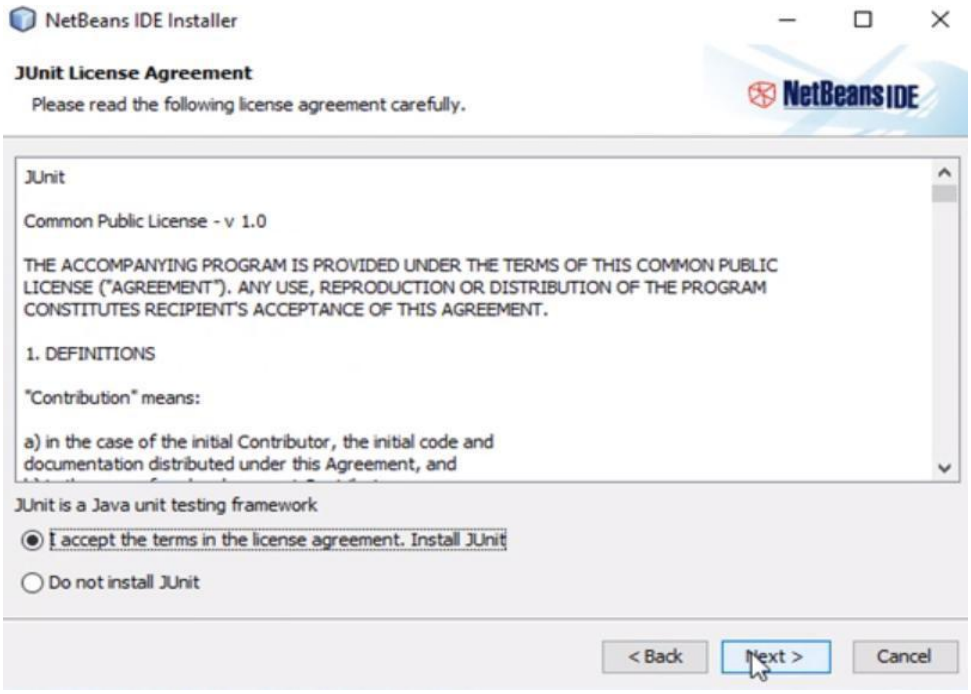

Figure 5.3.5 : Junit License agreement

Step-4: Choose the destination folder to install the NetBeans.

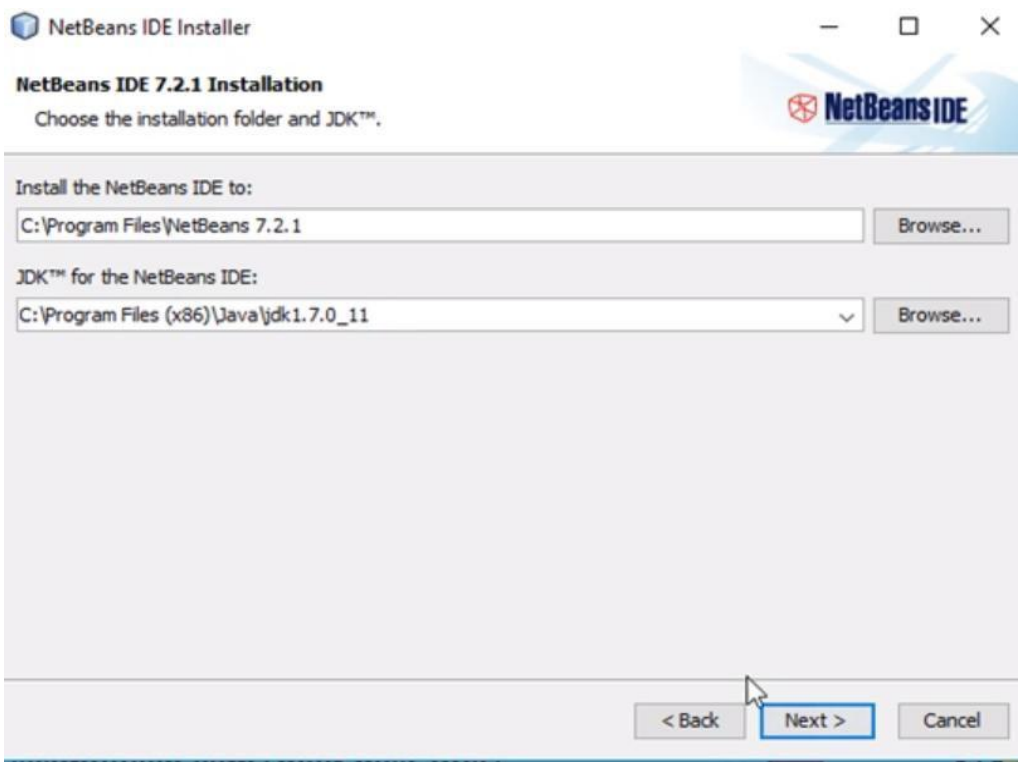

Figure 5.3.6 : Choose destination folder for Netbeans

- Choose thedestination folder for installing the Glassfish

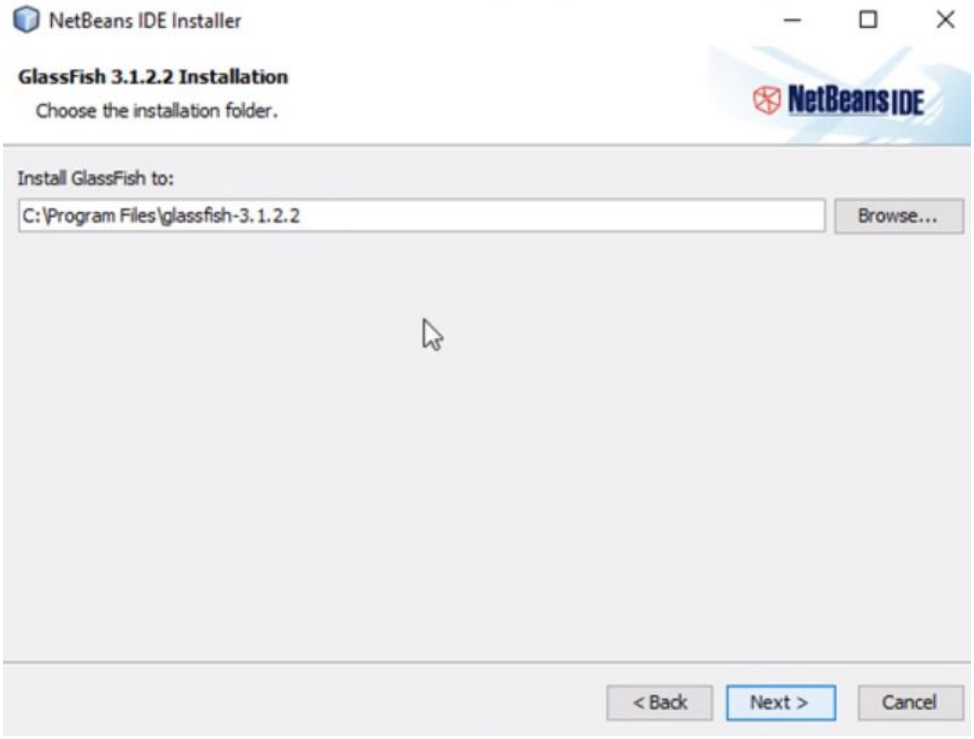

Figure 5.3.7 : Destination folder for glass fish

Step-5: Click the install button to start the installation

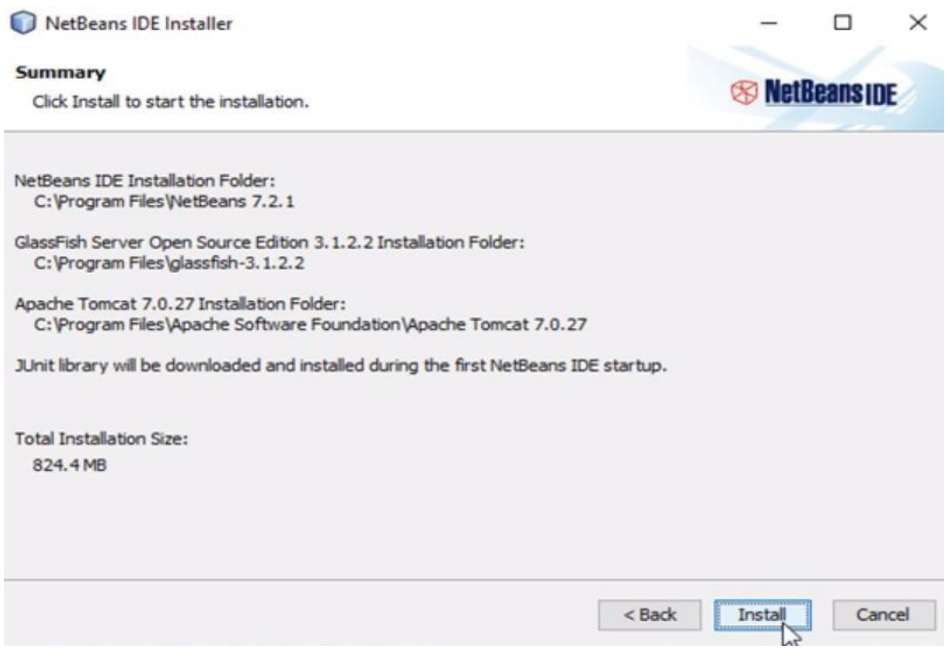

Figure 5.3.8: start installation

- The progress of the installation will be displayed. Wait for the completion of the installation.

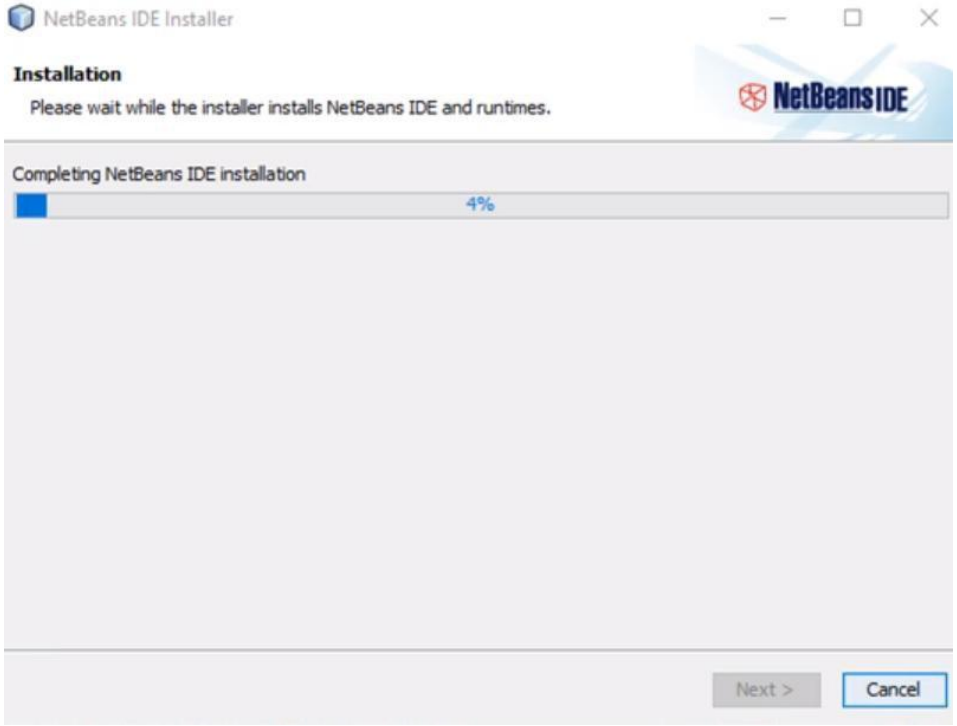

Figure 5.3.9 : Wait to install

- Click finish to complete the installation.

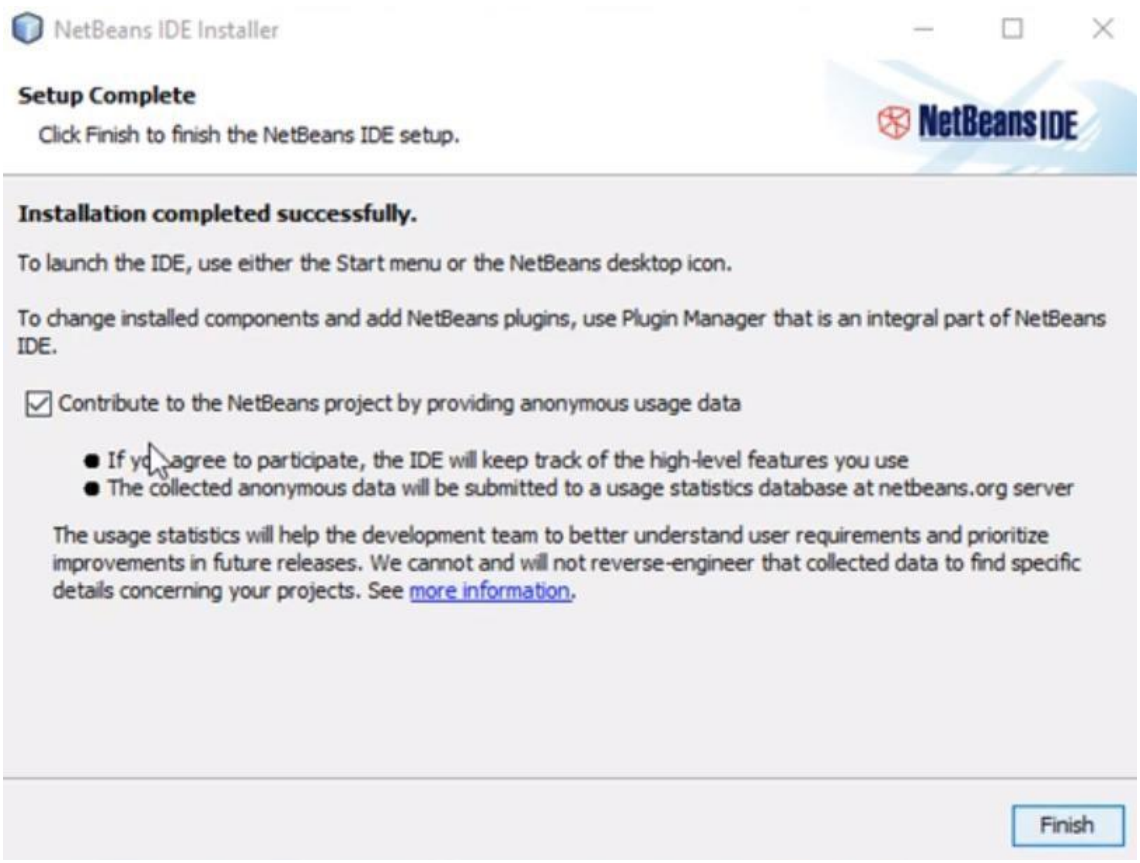

Figure 5.3.10: Installation Completed

- NetBeans is successfully installed in your System.

CHAPTER -6

DESIGN

6.1 UML Introduction :

The unified modeling language allows the software engineer to express an analysis model using the modeling notation that is governed by a set of syntactic, semantic and pragmatic rules. A UML system is represented using five different views that describe the system from distinctly different perspective.

UML is specifically constructed through two different domains, they are

- UML Analysis modeling, this focuses on the user model and structural model views of the systems.
- UML Design modeling, this focuses on the behavioral modeling, implementation modeling and environmental model views.

6.1.1 GOALS:

The Primary goals in the design of the UML are as follows:

1. Provide users a ready-to-use, expressive visual modeling Language so that they can develop and exchange meaningful models.
2. Provide extendibility and specialization mechanisms to extend the core concepts.
3. Be independent of particular programming languages and development process.
4. Provide a formal basis for understanding the modeling language.
5. Encourage the growth of OO tools market.
6. Support higher level development concepts such as collaborations, frameworks, patterns and components.
7. Integrate best practices.

6.1.2 Usage of UML in Project:

As the strategic value of software increases for many companies, the industry looks for techniques to automate the production of software and to improve quality and reduce cost and time to the market. These techniques include component technology, visual programming, patterns and frameworks. Additionally, the development for the World Wide Web, while making some things simpler, has exacerbated these architectural problems. The UML was designed to respond to these needs.
Simply, systems design refers to the process of defining the architecture, components, modules, interfaces and data for a system to satisfy specified requirements which can be done easily through UML diagrams.

6.1.3 Use Case Diagrams:

In software engineering, a use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted. Use cases are used during requirements elicitation and analysis to represent the functionality of the system. Use cases focus on the behavior of the system from the external point of view. The actors are outside the boundary of the system, whereas the use cases are inside the boundary of the system.

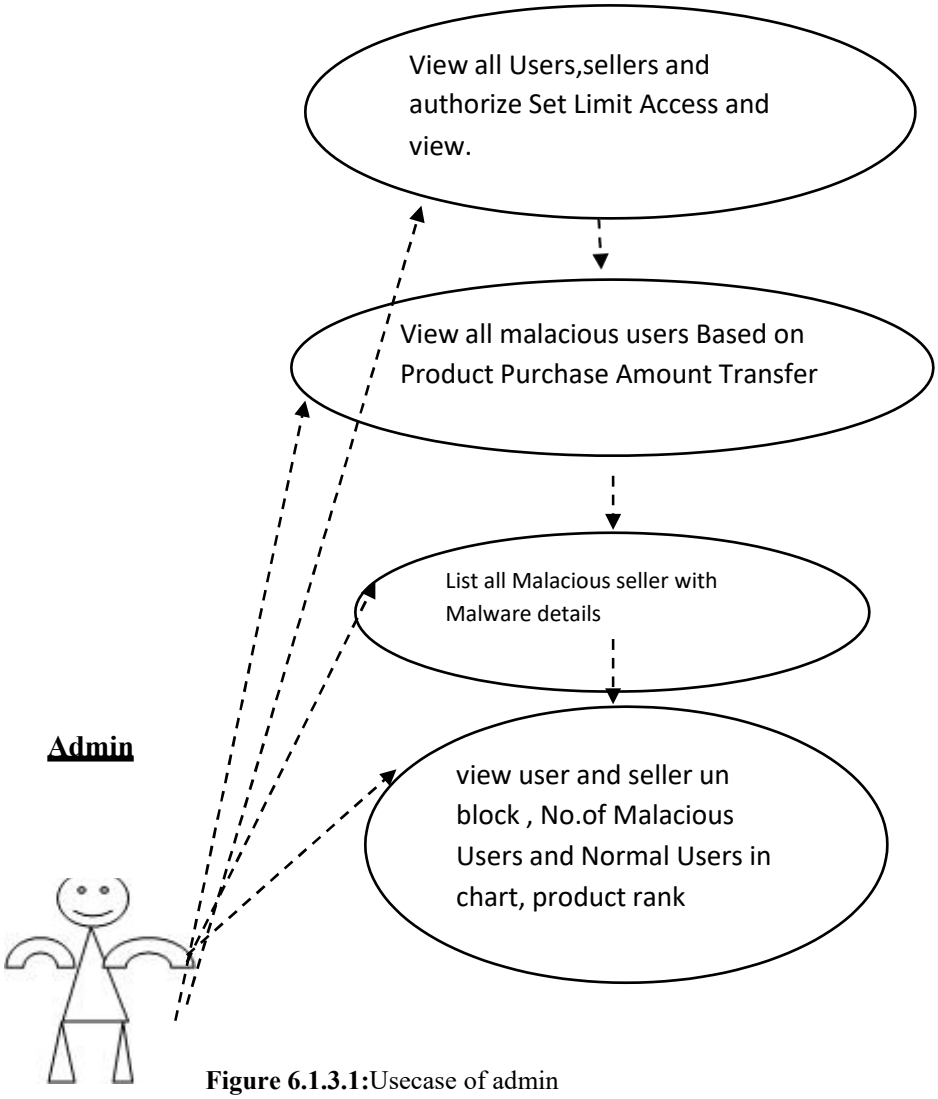

Figure 6.1.3.1: Usecase of admin

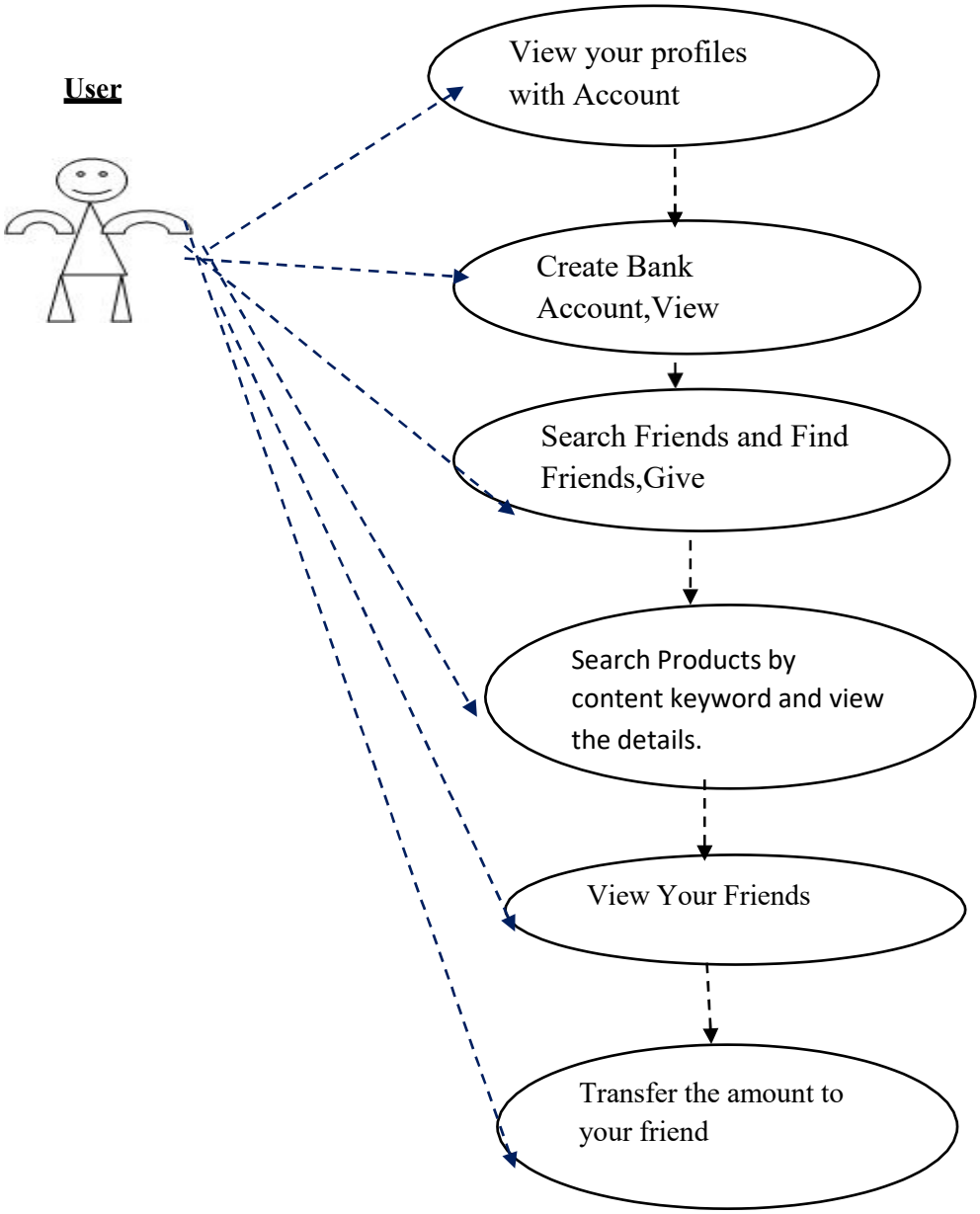

Figure 6.1.3.2: Usecase of user

Seller

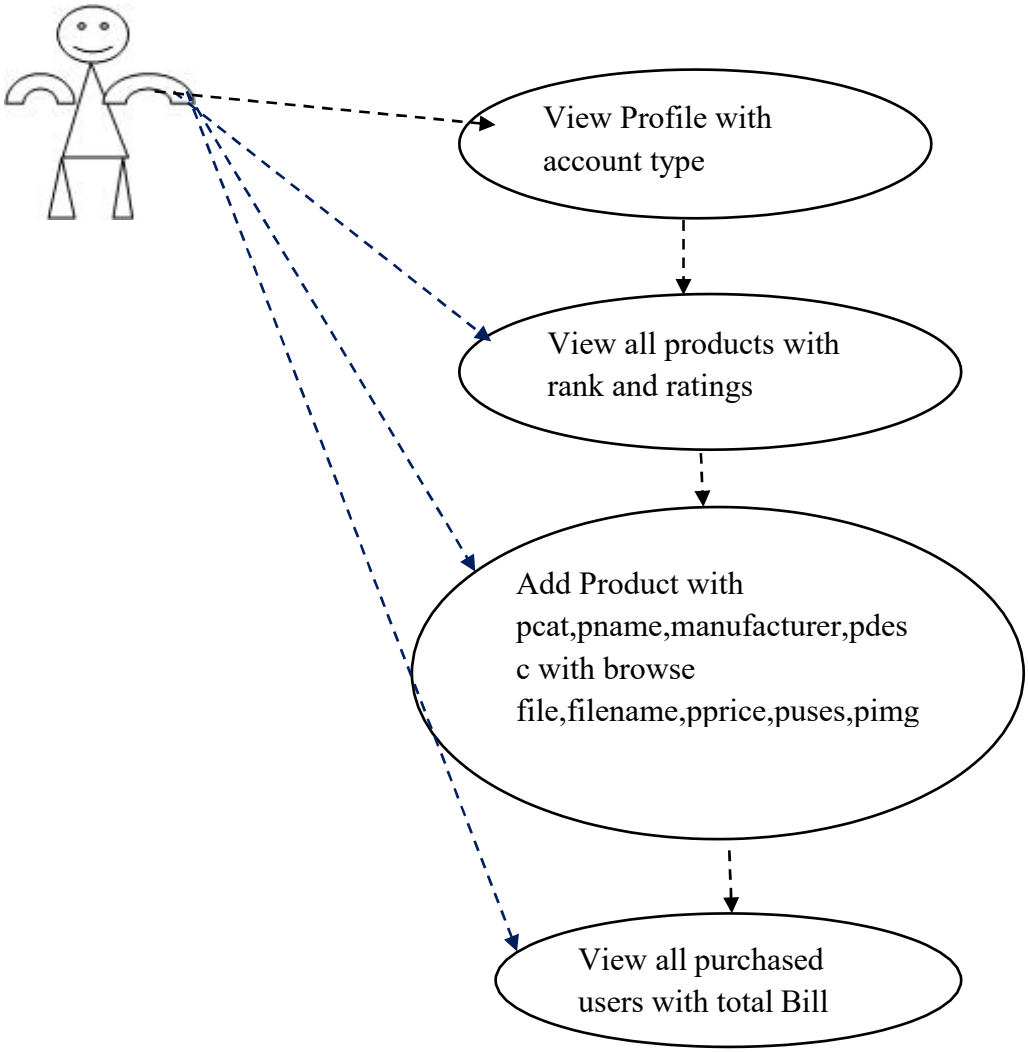

Figure 6.1.3.2: Usecase of seller

6.2 SEQUENCE DIAGRAM :

A sequence diagram in Unified Modeling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. Sequence diagrams are sometimes called Event-trace diagrams, event scenarios, and timing diagrams

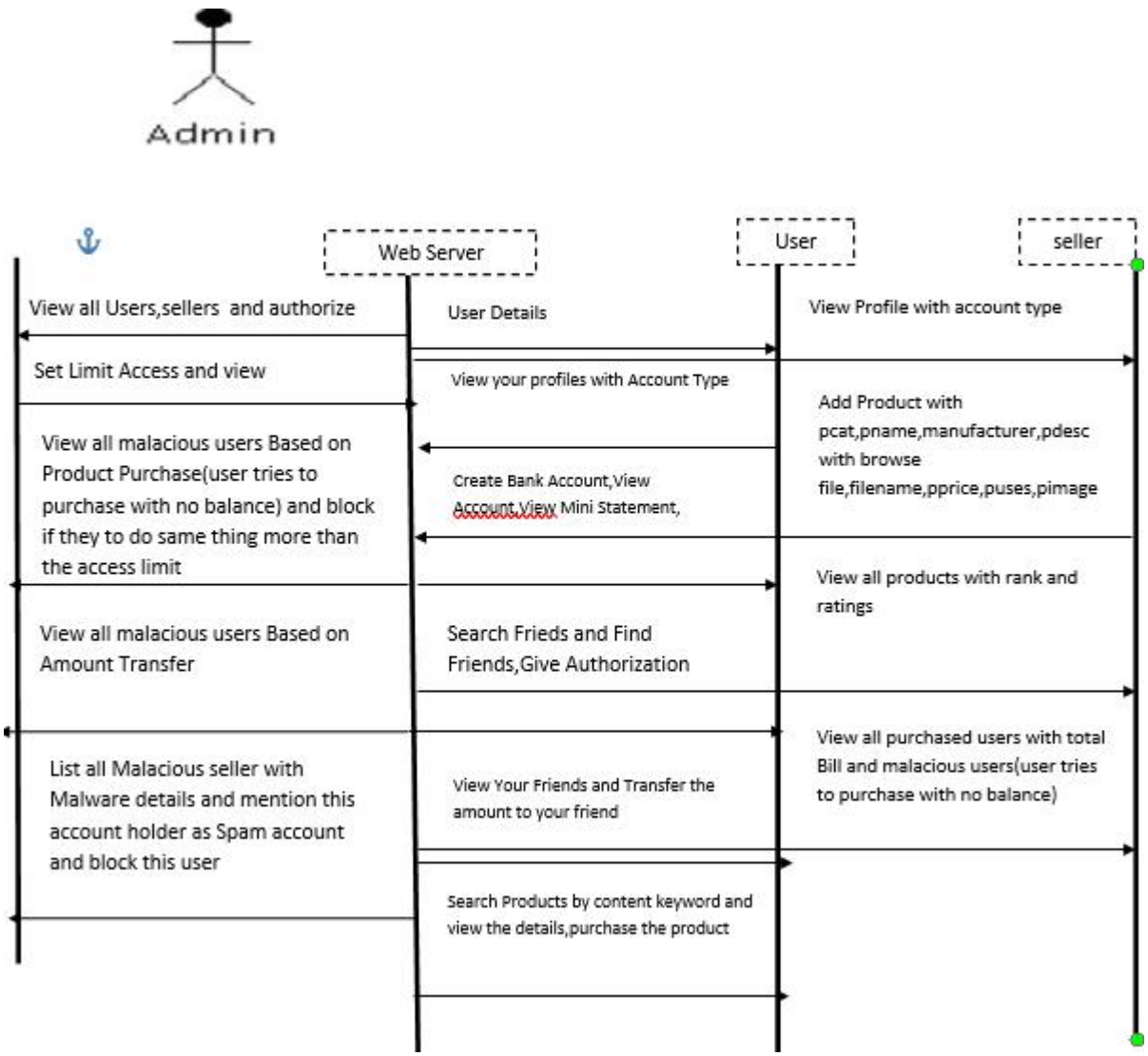

Figure 6.2: Sequence diagram

6.3 CLASS DIAGRAM:

In software engineering, a class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among the classes. It explains which class contains information.

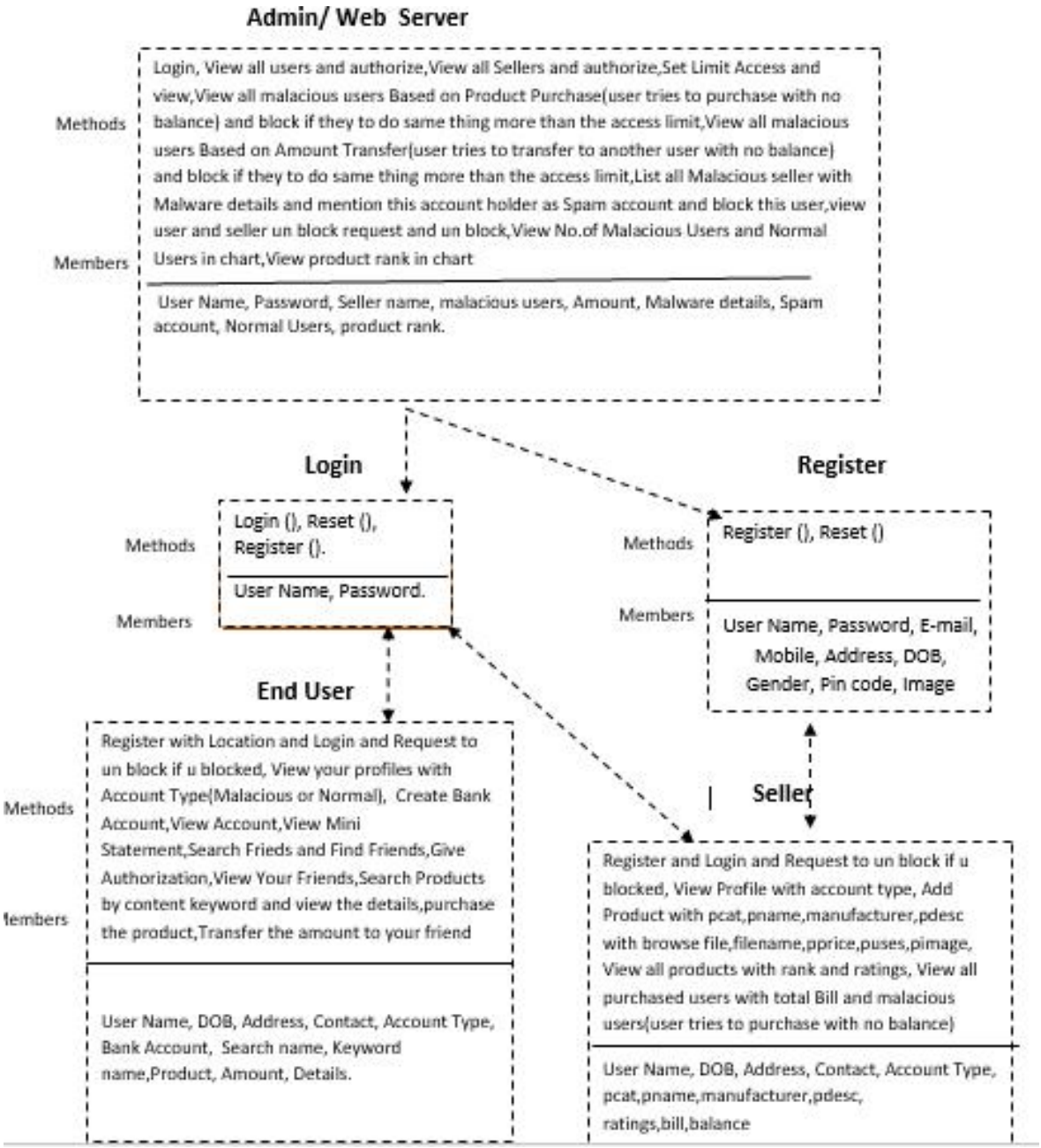

Figure 6.3: Class diagram

CHAPTER -7

IMPLEMENTATION

7.1 MODULES:

The following are the modules:

- Bank Admin
- Seller
- Use

7.2 MODULES DESCRIPTION:

7.2.1 Bank Admin :

In this module, the Admin has to login by using valid user name and password. After login successful he can do some operations such as View all users and authorize, View all Sellers and authorize, Set Limit Access and view, View all malicious users Based on Product Purchase(user tries to purchase with no balance) and block if they to do same thing more than the access limit,View all malicious users Based on Amount Transfer(user tries to transfer to another user with no balance) and block if they to do same thing more than the access limit, List all Malicious seller with Malware details and mention this account holder as Spam account and block this user, view user and seller un block request and un block, View No.of Malicious Users and Normal Users in chart, View product rank in chart**.**

7.2.2 User

In this module, there are n numbers of users are present. User should register with group option before doing some operations. After registration successful he has to wait for admin to authorize him and after admin authorized him. He can login by using authorized user name and password. Login successful he will do some operations like --- Register with Location and Login and Request to un block if u blocked View your profiles with Account Type(Malicious or Normal, Create Bank Account, View Account, View Mini Statement, Search Friends and Find Friends, Give Authorization, View Your Friends, Search Products by content keyword and view the details, purchase the product, Transfer the amount to your friend.

7.2.3 Seller

In this module, there are n numbers of users are present. Seller should register with group option before doing some operations. After registration successful he has to wait for admin to authorize him and after admin authorized him. He can login by using authorized user name and password. Login successful he will do some operations like View Profile with account type, Add Product with pcat,pname,manufacturer,pdesc with browse file,filename,pprice,puses,pimage

View all products with rank and ratings, View all purchased users with total Bill and malicious users(user tries to purchase with no balance)

7.3 Algorithm :

7.3.1 Random forest :

Random forest is a classifier that contains a number of decision trees on various subsets of the given dataset and takes the average to improve the predictive accuracy of that dataset.It can be used in marketing to identify the marketing trends.

We have used normalized random forest algorithm as the statistical classifier to evaluate its detection accuracy.

7.3.2 Advantages :

- Random forest is capable of performing both classification and regression tasks.
- It is capable of handling large datasets with high dimensionality.
- It enhances the accuracy of the model and prevents the overfitting issue.
- If a large part of the features are lost,accuracy can still be maintained.

7.3.3 Disadvantages :

Random forest data with different values,attributes with more values will have a greater impact on randomforests,so the attribute weights generated by random forest on such data are not credible.

CHAPTER -8

SYSTEM TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub assemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

8.1 TYPES OF TESTS:

8.1.1 Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

8.1.2 Integration testing

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

8.1.3 Functional test

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields,

predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

8.1.4 System Test

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

8.1.5 White Box Testing

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

8.1.6 Black Box Testing

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

CHAPTER – 9

EXECUTION & RESULTS

This project has been successfully executed its source code. Initially there were some errors and bugs occurred while running the code.

By resolving them, the code is fully free from errors and bugs. The following are screenshots of some of the outcomes while executing the source code and some are the screenshots of environment which we have used in our project.

There are three actors which include in this application,

They are:

- Admin
- Seller
- User

9.1 : Admin :

Bank admin has to login with valid username and password

Figure 9.1 shows login form for admin.

Figure 9.1.1: Login form for a admin

- Admin main menu,where admin can do all the operations are

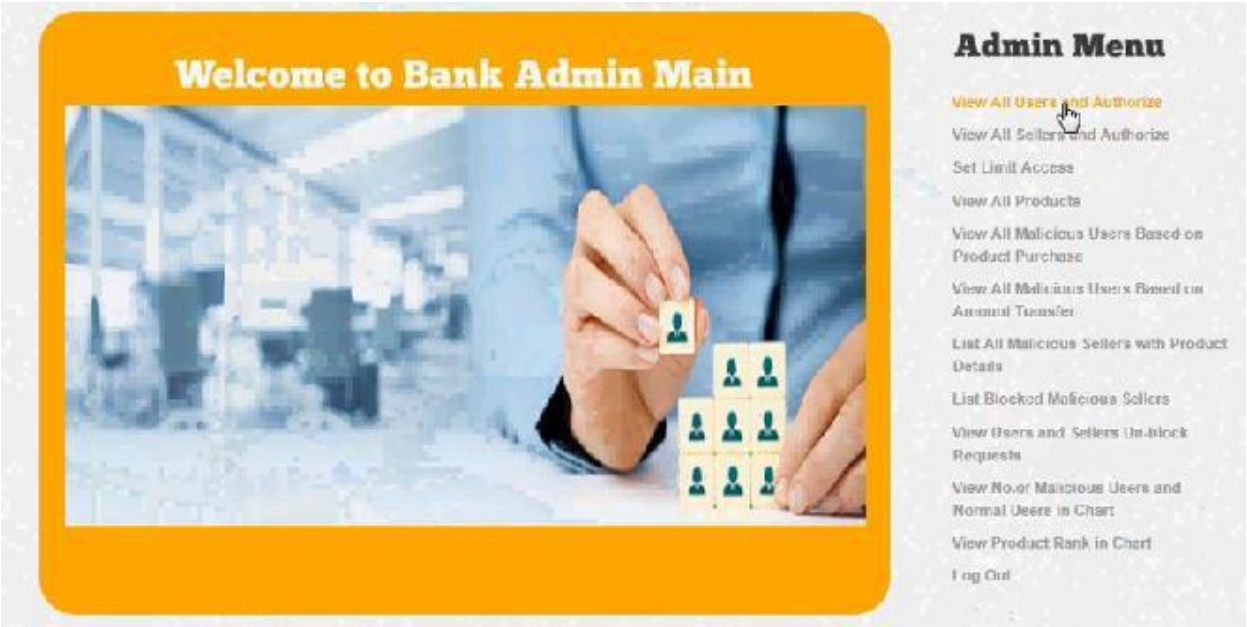

Figure 9.1.2:Admin Menu

- Admin can view all the users and authorize them

Figure 9.1.3 : View all users and authorize

- Admin can view all the sellers and authorize them

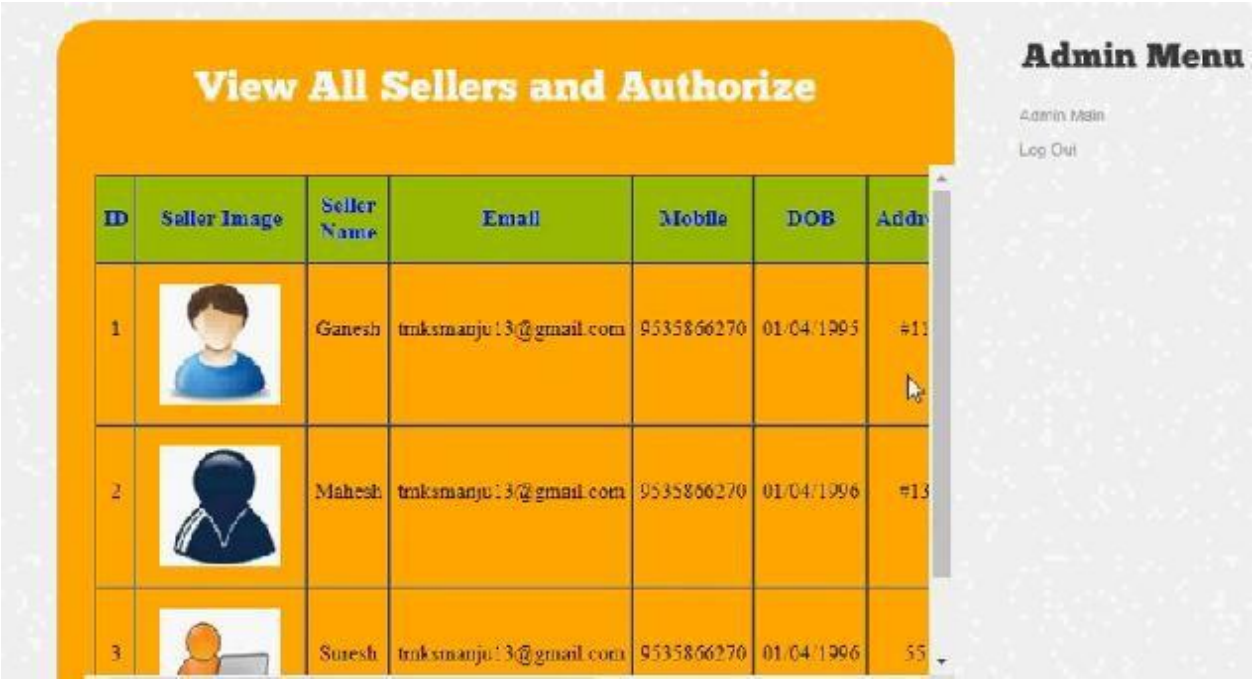

Figure 9.1.4 : Sellers and authorize

- Admin can set the access limit

Figure9.1.5: Set access limit

- Admin can view all the malicious users based on product purchase

Figure 9.1.6: Malicious users based on product purchase

- Admin can view all the malicious users and normal user in the form of chart

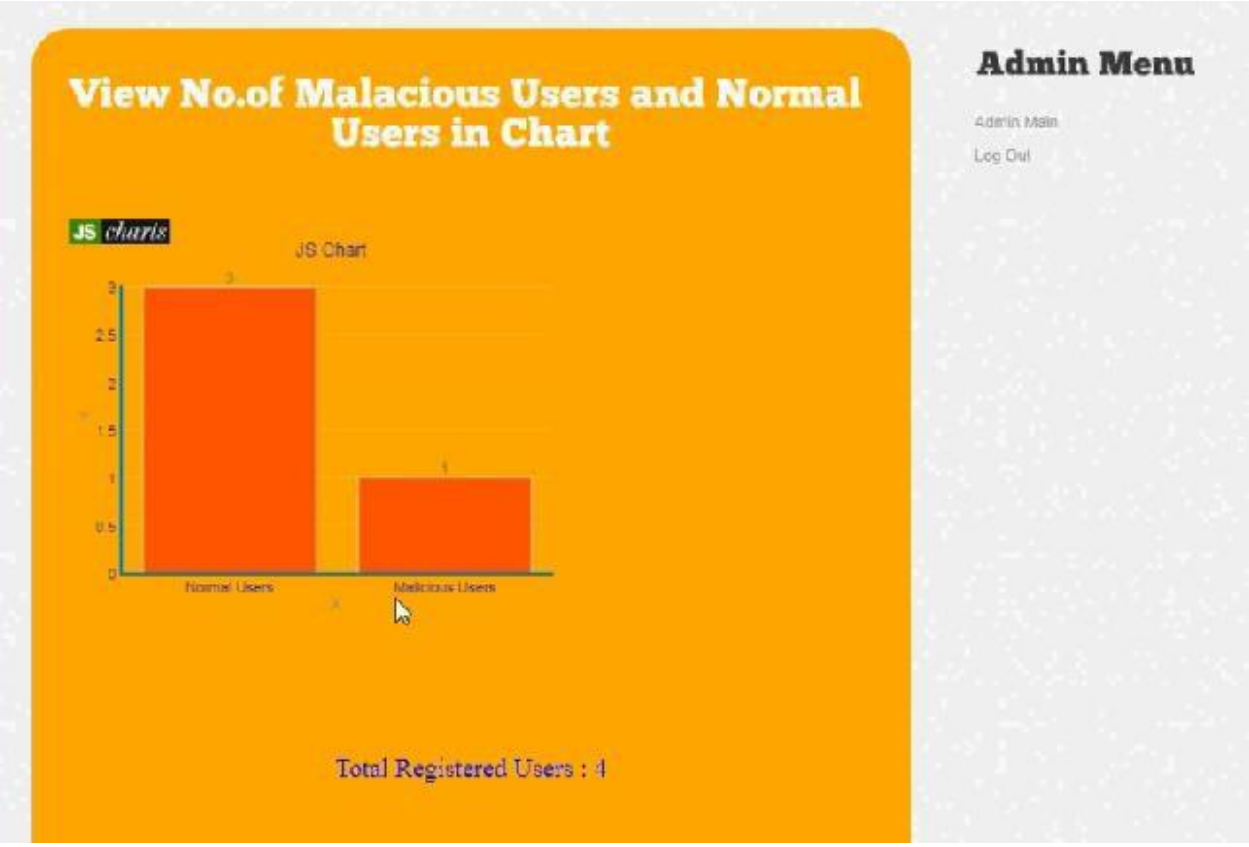

Figure 9.1.7: No.of Malicious users and normal users in the chart

9.2 : Seller :

- Seller should register with group option before doing some operations.
- After registration successful he has to wait for admin to authorize him and after admin authorized him.
- He can login by using authorized user name and password.
- Login successful he will do some operations like View Profile with account type, Add Product with pcat,pname,manufacturer,pdesc with browse file,filename,pprice,puses,pimage
- View all products with rank and ratings, View all purchased users with total Bill and malicious users(user tries to purchase with no balance)

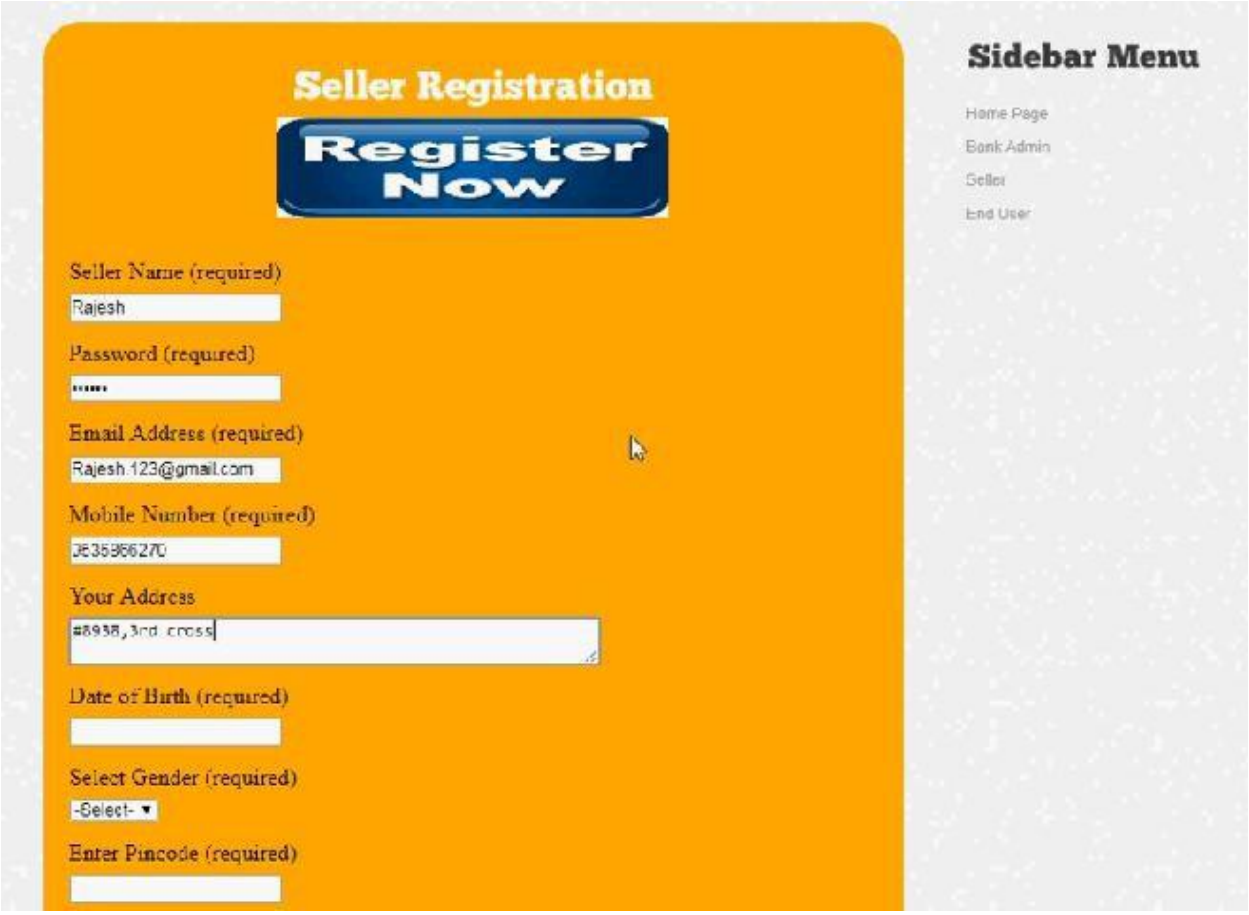

Figure 9.2.1: Seller registrarion form

Figure 9.2.2: Seller login form

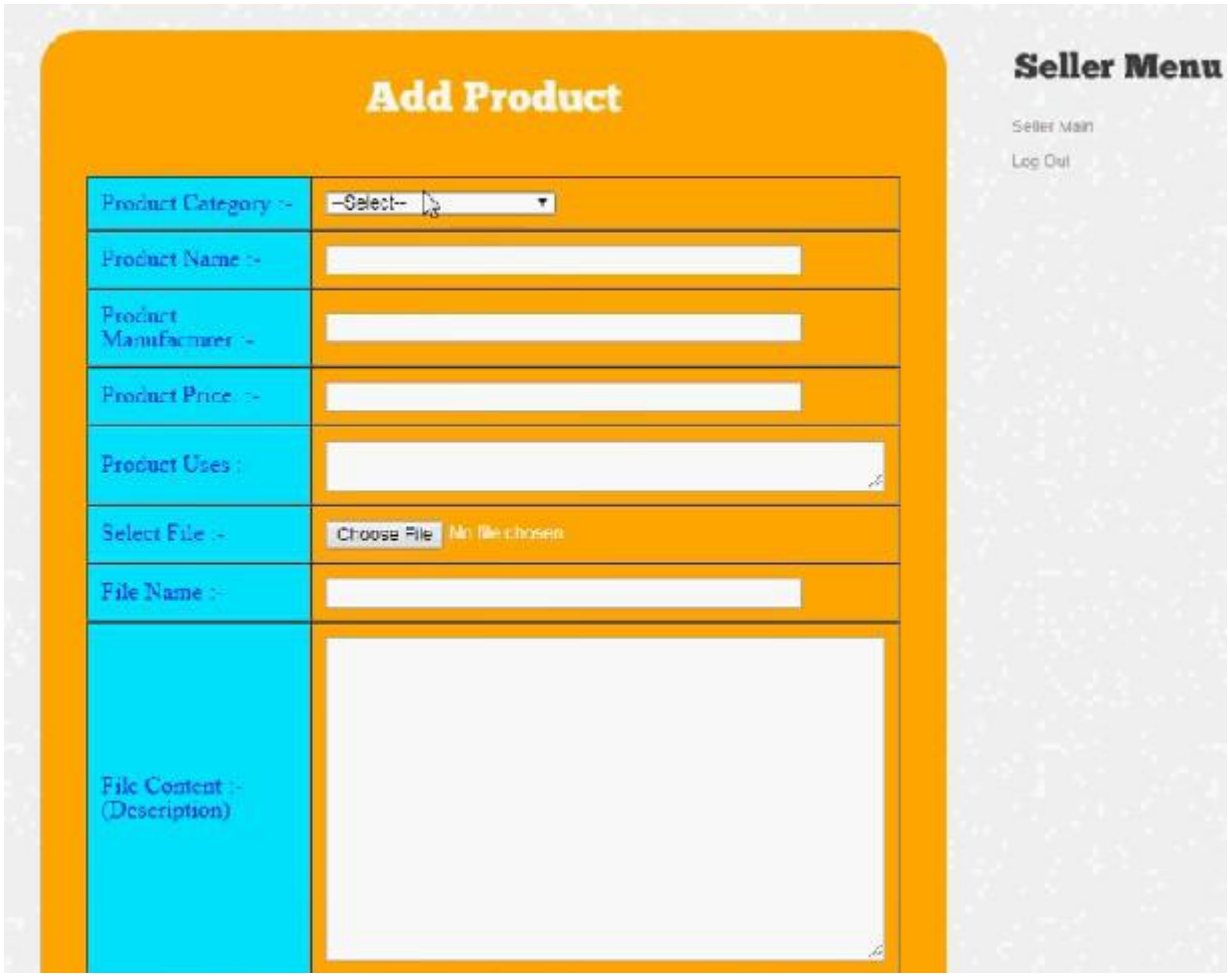

Figure 9.2.3: Seller can add product

9.3 : User:

- User should register with group option before doing some operations.
- After registration successful he has to wait for admin to authorize him and after admin authorized him.
- He can login by using authorized user name and password.
- Login successful he will do some operations like --- Register with Location and Login and Request to un block if u blocked View your profiles with Account Type(Malicious or Normal, Create Bank Account, View Account, View Mini Statement, Search Friends and Find Friends, Give Authorization, View Your Friends, Search Products by content keyword and view the details, purchase the product, Transfer the amount to your friend.

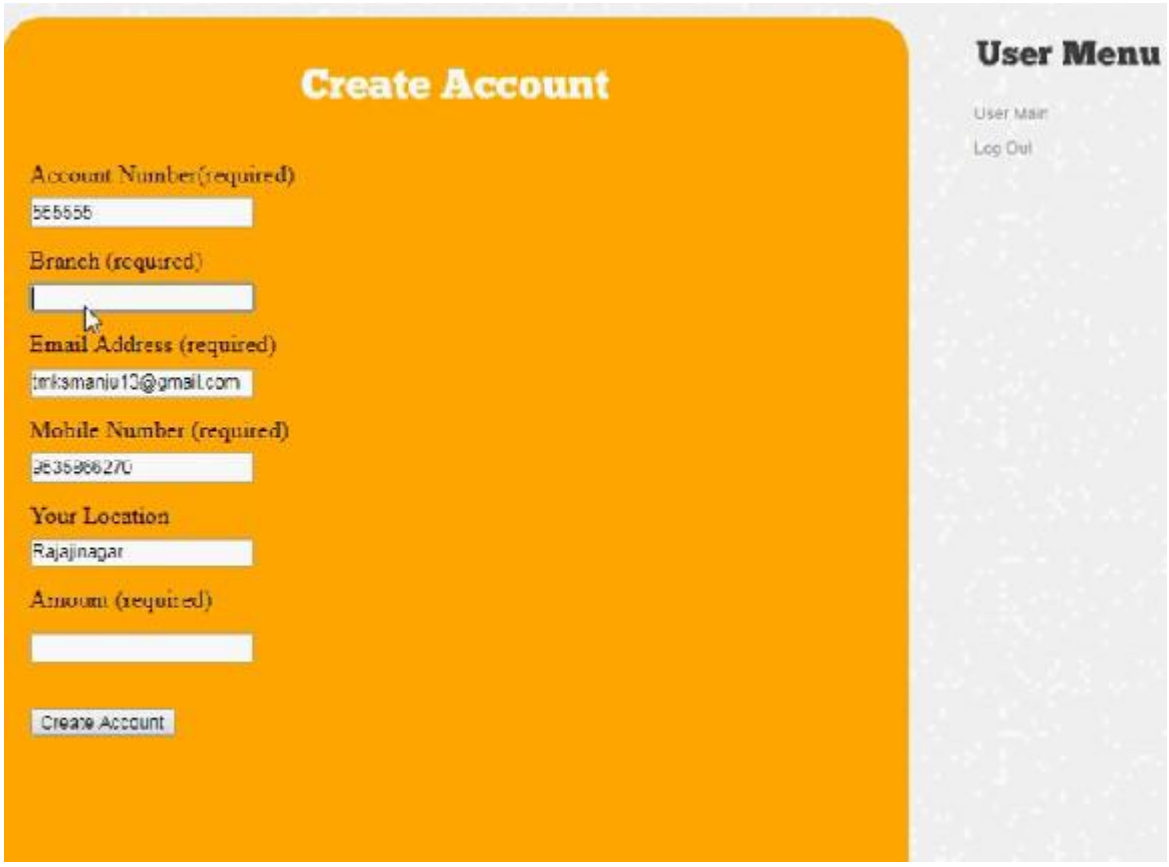

Figure 9.3.1: User Registration from

Figure 9.3.2 : User login form

Figure 9.3.3: User can search product

Figure 9.3.4 : User can view all the products

- User can view the products and buy the products in these website.

CONCLUSION

This paper presents a novel system, to automatically detect malicious OSN accounts that participate in online promotion events. Itleverages three categories of features including general behavior, virtual-currency collection, and virtual-currency usage. A global lead-ing OSN company, have demonstrated the detection accuracy, which has achieved a high detection rate of 96.67% given an extremely low false positive rate of 0.3%.

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