SOFTWARE TRAINING REPORT

JAVA

Submitted in the partial fulfilment of the

Requirements for the award of

Degree of Bachelor of Technology in Computer Science & Engineering

Submitted To:

Harjot Tiwana

Assistant professor

Submitted By:

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CHANDIGARH ENGINEERING COLLEGE, LAN

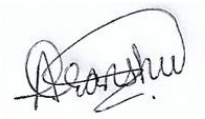
INFOTECHMON PVT. LTD.

CERTIFICATE

This is to certify that Mr. Aranshu Bansal has completed the 2-Month Software Training during the period from 8 February 2021 to 8 April 2021 in our Organization / Industry as a Partial Fulfilment of Degree of Bachelor of Technology in Computer Science & Engineering. He / She was trained in the field of JAVA.

DECLARATION

I hereby declare that the Software Training Report entitled ("Go Fit") is an authentic record of my own work as requirements of 2- months Software Training during the period from 8 Feb 2021 to 8 April 2021 for the award of degree of B. Tech. (Computer Science & Engineering), **Chandigarh Engineering College** under the guidance of (Ms. Monika).



Aranshu Bansal

1702573

Date: 2 May 2021

Certified that the above statement made by the student is correct to the best of our knowledge and belief.

Signatures

Examined by:

1. Rajeev Sharma 2. 3. 4.

Sukhdeep Kaur

Head of Department

(Signature and Seal)

ACKNOWLEDGEMENT

I would like to place on record my deep sense of gratitude to Mr. Harjot Tiwana Dept. of Computer Science & Engineering, CEC-CGC, landran for his/her generous guidance, help and useful suggestions.

I express my sincere gratitude to Dr. Sukhpreet Kaur, HoD in Department of CSE, CEC-CGC, Landran for her stimulating guidance, continuous encouragement.

I also wish to extend my thanks to Mr. Harjot Tiwana for their insightful comments and constructive suggestions to improve the quality of this research work.

ARANSHU BANSAL (1702573, 8, W1)

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The motto is to provide best Software/ Industrial Training according to the corporate environment. We provide job-oriented training to the students along with placement assistance to each is the student who is a trainee member of ITM. We also provide PPP (Placement preparation program) based on the criteria of different client companies.

Our prime objective is to render quality services in the three aspects that play a major role in IT industry. Our offering span across Telecom Network Integration Mechanical Engineering Solution, Software Engineering Solution, Automation Engineering solution, Business Application and Consulting. Software Engineering Solution.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1: INTRODUCTION AND FESIBILITY STUDY

1.1 Introduction to the Project

We have designed an application in the era of a pandemic (Covid-19), called as 'Go Fit'. As we know in this difficult time it is safe to stay home, so this application is specially designed for the ones who love to be physically fit and active. People are not able to attend the gym physically, this service will help giving them the pleasure to feel the experience of a gym at home, they could simply enrol and enjoy all the services. Now coming on to the interface of an application.

We mainly have 3 components- The Administrator, Customer and a Trainer.

Administrator handles all the admin work. Keeping record of instruments, maintaining files which include customer's information and also files with information of a trainer, maintaining attendance sheet, have access to data related to the payments, who all have paid and the salary related information as well, sending reminders related to dues or reschedules. As administrator keeps a track record of payments so they have an access to give printed payment receipts to a customer. Administrator helps creating a roster of classes like Zumba, Yoga, Dance and others. Could enter the information and create an account for trainer

Coming on to Customer, there are two types of consumers, consumers with basic plan and consumers with premium plan. Basic and premium plans have their own different cost. Basic plan includes information with very few exercises and daily routine. They are not allowed for the classes like Zumba or Yoga and other. Consumer with a basic plan is not assigned a trainer and could not access information about a trainer or so. Whereas consumer with Premium subscription is eligible for trainer allotment and is allotted a trainer and could access the trainer component in the application. In premium plan, consumers get a diet plan and class access too. Full schedule of classes starts reflecting in their profile. Additional feature for customers is an in-build chat box, where they could chat and clear any doubts or could ask about any information.

Trainer is another component, trainer could see the data of a consumer, could check the regularity of a client in classes and could check their exercise schedules. Also, trainer gets a query and opportunity to resolve a query as well. Additional access to a trainer is that he could answer his clients and could talk to them through a cha

1.1.1 Motivation

The project ‘Go-Fit’ is a java-based application which is developed using concept of advance java like java swing and the database used for back-end connectivity is my sql. java swing did not exist in the early days of Java. This project does the basics operations of providing a user-friendly interface for the clients who uses this application. It contains of three types of logins which include Administrator Login, Trainer Login and Customer Login.

whose motivation came in lockdown period when the entire GYM Industry suffered heavily due to covid-19 pandemic. This struck me with the idea of making this java application as the people who worked in GYM basically lost their livelihood. What this application does is enable gym owners and trainers to generate a revenue by providing paid services to the customer.

The Overall objective of this application is to help gym owner and trainer to raise some kind of revenue and also help the customer to retain their fitness at ease of their home this application removes the barrier and enable customer to virtually connect with his trainer for any kind of query on the other hand helps administrator to manage customer and trainer data in a proper and organized manner also enable him to do more work in short time stamp

Technology is rapidly changing different business model but fitness industries is in its initial phase of this transformation. Technology can not only increase the fitness industrial review and it can also help us to expand the fitness industries reach to remote areas as this application remove the barrier of distance

1.1.2 SPECIFICATION AND GOALS:

The goal of our project is to develop a platform which can help small and medium scale Gym owner to move their business Online and provide quality service to their customer and also help customer to be in contact with its trainer

It should be able to provide an easy-to-use Graphical User Interface

It should provide an online Payment System as well as different services

It should have a Online Shopping store with proper cart and order history

1.1.3 SUMMARY

The project ‘Go-Fit’ is a java-based application whose motivation came in lockdown period when the entire GYM Industry suffered heavily due to covid-19 pandemic. This struck me with the idea of making this java application as the people who worked in GYM basically lost their livelihood. What this application does is enable gym owners and trainers to generate a revenue by providing paid services to the customer.

Customer is provided an in-build chat service by which he can directly get in touch with the assigned trainer regarding his queries and can provide feedback to the owner of the gym.

Administrator is provided with rights to controls and manage the activities of customer and the trainer

Trainer is provided with the list of all the customers assigned to him and also provide with a in build chat service to interaction and answered queries of the customer

1.2 Feasibility Study

In this the development team visits the studies their system. They investigate the need for possible software automation in the given system. By the end of the feasibility study, the team furnishes a document that holds the different specific recommendations for the candidate system. It also includes the personnel assignments, costs, project schedule, and target dates. The requirements gathering process is intensified and focused specially on software. To understand the nature of the program(s) to be built, the system engineer ("analyst") must understand the information domain for the software, as well as required function, behaviour, performance and interfacing. The essential purpose of this phase is to find the need and to define the problem that needs to be solved.

A feasibility study is an analysis that takes all of a project's relevant factors into account—including economic, technical, legal, and scheduling considerations—to ascertain the likelihood of completing the project successfully. Taking into consideration the project, we can say that the project is most feasible in all aspects. The present technology is found to be sufficient enough to meet the requirements of the system. The system is believed to work well when it will be developed and installed. Hence, operational feasibility is achieved. Since the requirements of the project are easily available, the project can be easily fulfilled by using the available requirements. The detailed feasibility study is as follows:

1.2.1 Technical Feasibility

The technology method for the proposed system that we are going to develop is available. We can work with the current equipment's like java, IoT, cloud, Arduino etc. In future if we need to modify or upgrade the system, it will be made by keeping in mind the fact that the resources are sustainable and easily upgraded so that they can match with the upcoming technology. Hence the system that we are going to develop will successfully satisfy the needs of the system for technical feasibility.

1.2.2 Economic Feasibility

Since the system will be developed as a part of the project work, here is no manual cost to spend for the proposed system. Also, all the resources are already available, it gives an indication that the system is economically possible for development. Economic justification is generally the "Bottom Line" consideration for most of the systems. We can run our system in normal hardware like desktop, laptop and mobile while the software need like machine programs and cloud availability are free of cost that makes it more economical to build. Hence, the project that we are going to develop won't require enormous money and will be economical.

1.2.3 Operational Feasibility

The user interface will be user friendly and no training would be required to use the application or developed model. The solution proposed for our project is operationally workable and most likely convenient to solve the irrelevant problems that will be solved by using the system like timely collection of garbage, tracking of truck drivers and their work etc.

CHAPTER 2: SOFTWARE REQUIREMENT SPECIFICATION

This is the software requirement specification of the project Go Fit. This section explains in details how the project was approached. All hardware and software components that will be used will be explained in this section of the report. Problems encountered and solutions to these problems will not be mentioned in this section of the report

2.1 Introduction: -

2.1.1 Document Purpose

This documentation is done so that all the developers can make use of it in updating or understanding the project Go Fit.

The project 'Go-Fit' is a java-based application whose motivation came in lockdown period when the entire GYM Industry suffered heavily due to covid-19 pandemic. This struck me with the idea of making this java application as the people who worked in GYM basically lost their livelihood. What this application does is enable gym owners and trainers to generate a revenue by providing paid services to the customer.

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2.1.2 Product Scope

The purpose of the Go Fit is to help gym and fitness houses to Make their Business Model Technology Derived as it mainly had 3 components The Administrator, Customer and a Trainer. This will Enable the Customer to gain good health as well as helps admin and trainer to earn a revenue it also has a build in chat portal, online store, and fees payment facility.

2.1.3 Project Overview

The project 'Go-Fit' is a java-based application whose motivation came in lockdown period when the entire GYM Industry suffered heavily due to covid-19 pandemic. This struck me with

the idea of making this java application as the people who worked in GYM basically lost their livelihood. What this application does is enable gym owners and trainers to generate a revenue by providing paid services to the customer.

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2.1.4 Intended Audience and Document Overview

This document can be helpful for users that use the Go Fit and the developers who want to understand or want to fix bugs if any.

2.1.5 Definitions, Acronyms and Abbreviations

- MySQL: Structured Query Language
- Java: Object Oriented Language
- GUI: Graphical User Interface

2.1.6 Document Conventions

In general, this document follows the IEEE formatting requirements. Use Times New Roman font size 11, or 12 throughout the document for text. Use italics for comments. Document text should be single spaced and maintain the 1” margins found in this template. But this document follows 1.5 line spacing with a margin 3.5 cm on the left, 2.5 cm on the top, and 1.25 cm on the right and at bottom. Every page in the report must be numbered. The page numbering, starting from acknowledgements and till the beginning of the introductory chapter, should be printed in small Roman numbers, i.e., i, ii, iii, iv..... The page number of the first page of each chapter should not be printed (but must be accounted for). All page numbers from the second page of each chapter should be printed using Arabic numerals, i.e., 2,3,4,5... All printed page numbers should be located at the bottom centre of the page.

2.1.7 References and Acknowledgments

- https://www.tutorialspoint.com/

- https://www.geeksforgeeks.com/
- https://www.stackoverflow.com/

2.2 OVERALL DESCRIPTION: -

2.2.1 Product Overview

Go Fit stores the following information.

- **Customer details:**
  It includes the information related to a student like First Name, Last Name, Username, Password, Phone Number, Date of Birth, Age, Aadhar Number, Gender, Address.
- **Trainer details:**
  It includes the information related to trainer like First Name, Last Name, Username, Password, Phone Number, Date of Birth, Age, Aadhar Number, Gender, Address.
- **Admin details:**
  It includes the information related to admin like First Name, Last Name, Username, Password, Phone Number, Date of Birth, Age, Aadhar Number, Gender, Address.

2.2.2 Product Functionality

- Authentication
- Customer, Student and Trainer Details
- Customer and Trainer Forgot Password
- Manage Order, Equipment, Payment
- Customer Trainer Charing Portal

2.2.3 Design and Implementation Constraints

One can view the Application by running it on any machine which is having Java Run Time Environment.

2.2.4 Assumptions and Dependencies

- Must have a Database Software, MySQL.
- Java must be installed on the system to run the project.

2.3 SPECIAL REQUIREMENTS: -

2.3.1 User Interfaces

- Front-end software: NetBeans IDE for Java EE Developers
- Back-end software: MySQL

2.3.2 Software Interfaces

Go Fit uses the NetBeans IDE for Java EE Developers for front end development and MySQL Workbench for storing user information in database.

2.3.3 Functional Requirements

- F1:

  The System shall provide user authentication.

  There should be proper usernames and password for every user and the user should be able to reset it.

  If the authentication fails the system shall display it on the screen.
- F2:

  The system shall have a database software in it.

  The system shall use the database software for windows to retrieve and updating the system.
- F3:

  The system shall able to select multiple files at a time.

  The system shall able to select multiple files at a time.

2.3.4 Safety and Security Requirements

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

2.4 Technology Used: -

2.4.1 JAVA

Java Technology is both a programming language and a platform.

2.4.1.1 Java: The Programming Language

The Java programming language is a high-level language that can be characterized by all of the following buzzwords:

- Simple
- Object oriented
- Distributed
- Interpreted
- Robust
- Secure
- Architecture neutral
- Portable
- High performance
- Multithreaded

With most programming languages, you either compile or interpret a program so that you can run it on your computer. The Java programming language is unusual in that a program is both compiled and interpreted. With the compiler, first you translate a program into an intermediate language called *Java byte codes* —the platform-independent codes interpreted by the interpreter on the Java platform. The interpreter parses and runs each Java byte code instruction on the computer. Compilation happens just once; interpretation occurs each time the program is executed. The following figure illustrates how this works.

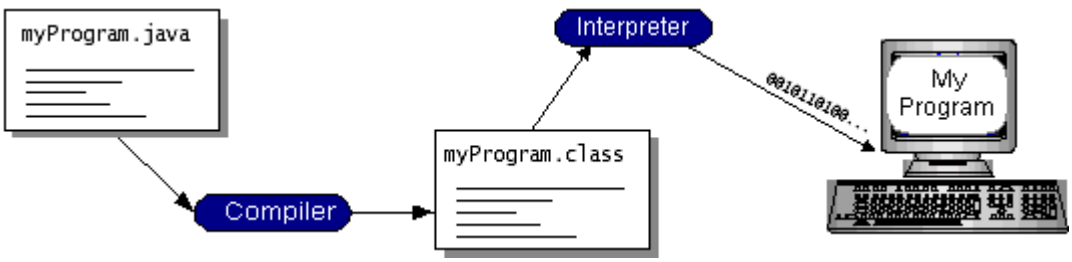

Figure 1 Java

You can think of Java byte codes as the machine code instructions for the *Java Virtual Machine* (Java VM). Every Java interpreter, whether it's a development tool or a Web browser that can run applets, is an implementation of the Java VM.

Java byte codes help make "write once, run anywhere" possible. You can compile your program into byte codes on any platform that has a Java compiler. The byte codes can then be run on any implementation of the Java VM. That means that as long as a computer has a Java VM, the same program written in the Java programming language can run on Windows 2000, a Solaris workstation, or on an iMac.

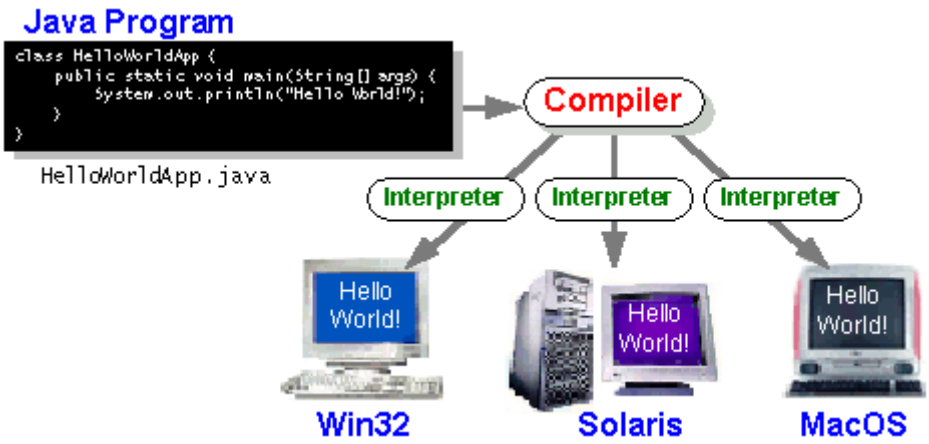

Figure 2 Java Compiler

2.4.1.2 Java: The Platform

A *platform* is the hardware or software environment in which a program runs. We've already mentioned some of the most popular platforms like Windows 2000, Linux, Solaris, and MacOS. Most platforms can be described as a combination of the operating system and hardware. The Java platform differs from most other platforms in that it's a software-only platform that runs on top of other hardware-based platforms.

The Java platform has two components:

- The Java Virtual Machine (Java VM)
- The Java Application Programming Interface (Java API)

Java Virtual Machine is standardized hypothetical computer, which is emulated inside our computer by a program. It is base of Java platform and is ported onto various hardware-based platforms.

The Java API is a large collection of ready-made software components that provide many useful capabilities, such as graphical user interface (GUI) widgets. The Java API is grouped into libraries of related classes and interfaces; these libraries are known as packages.
The following figure depicts a program that's running on the Java platform. As the figure shows, the Java API and the virtual machine insulate the program from the hardware.

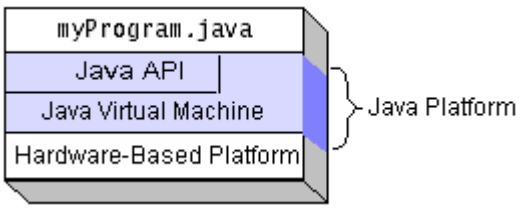

Figure 3 Java Platform

2.4.2 JAVA SWINGS

Swing API is a set of extensible GUI Components to ease the developer's life to create JAVA based Front End/GUI Applications. It is built on top of AWT API and acts as a replacement of AWT API, since it has almost every control corresponding to AWT controls. Swing component follows a Model-View-Controller architecture to fulfil the following criteria. A single

- API is to be sufficient to support multiple looks and feel.
- API is to be model driven so that the highest-level API is not required to have data.
- API is to use the Java Bean model so that Builder Tools and IDE can provide better services to the developers for use.

2.4.2.1 MVC Architecture

- Swing API architecture follows loosely based MVC architecture in the following manner.
- Model represents component's data.
- View represents visual representation of the component's data.
- Controller takes the input from the user on the view and reflects the changes in Component's data.

- Swing component has Model as a separate element, while the View and Controller part are clubbed in the User Interface elements. Because of which, Swing has a pluggable look-and-feel architecture.

2.3.2.2 Swing Features

- Light Weight − Swing components are independent of native Operating System's API as Swing API controls are rendered mostly using pure JAVA code instead of underlying operating system calls.
- Rich Controls − Swing provides a rich set of advanced controls like Tree, Tabbed Pane, slider, Colo picker, and table controls.
- Highly Customizable − Swing controls can be customized in a very easy way as visual appearance is independent of internal representation.
- Pluggable look-and-feel − SWING based GUI Application look and feel can be changed at run-time, based on available values

2.4.2.3 Java AWT

AWT is known as Abstract Window Toolkit which is *an API to develop GUI or window-based applications* in java. Java AWT components are platform-dependent i.e., components are displayed according to the view of operating system. AWT is heavyweight i.e., its components are using the resources of OS. The java.awt package provides classes for AWT api such as TextField, Label, TextArea, RadioButton, CheckBox, Choice, List etc.

2.3.2.4 Java AWT Hierarchy

The hierarchy of Java AWT classes are given below.

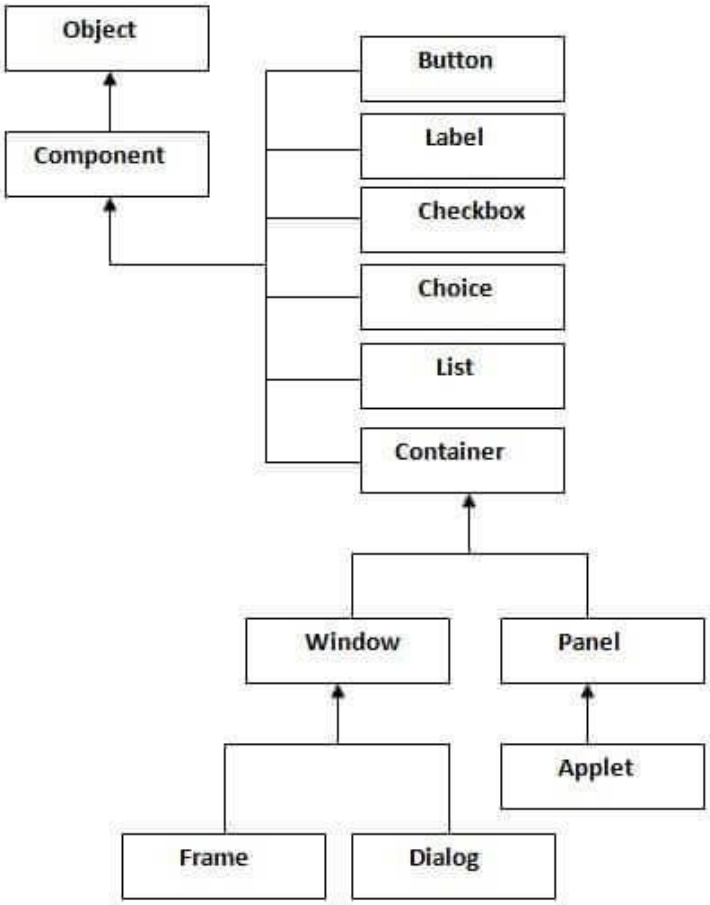

Figure 4 Java AWT

Container is a component in AWT that can contain other components like buttons, text fields, labels etc. The classes that extends Container class are known as container such as Frame, Dialog and Panel.

Window is the container that have no borders and menu bars. You must use frame, dialog or another window for creating a window.

Panel is the container that doesn't contain title bar and menu bars. It can have other components like button, text field etc.

Frame is the container that contain title bar and can have menu bars. It can have other components like button, text field etc.

2.4.3 My SQL

MySQL is the world's most popular open source relational database and Amazon RDS makes it easy to set up, operate, and scale MySQL deployments in the cloud. With Amazon RDS, you

can deploy scalable MySQL servers in minutes with cost-efficient and resizable hardware capacity.

Amazon RDS for MySQL frees you up to focus on application development by managing time-consuming database administration tasks including backups, software patching, monitoring, scaling and replication.

Amazon RDS supports MySQL Community Edition versions 5.6, 5.7, and 8.0 which means that the code, applications, and tools you already use today can be used with Amazon RDS.

2.5 SOFTWARE USED

2.5.1 NetBeans IDE for Java EE Developers

In June 2000, NetBeans was made open source by Sun Microsystems, which remained the project sponsor until January 2010 when Sun Microsystems became a subsidiary of Oracle. Throughout its history in Sun Microsystems and Oracle, NetBeans has been free and open source

has been leveraged by its sponsor as a mechanism for driving the Java ecosystem forward.

In 2016, Oracle donated the NetBeans source code to the Apache Software Foundation. In April 2019 Apache NetBeans became a top-level Apache project. Please see our History section for more information. Apache NetBeans is top level Apache Project dedicated to providing rock solid software development products (the Apache NetBeans IDE and the Apache NetBeans Platform) that address the needs of developers, users and the businesses who rely on NetBeans as a basis for their products; particularly, to enable them to develop these products quickly, efficiently and easily by leveraging the strengths of the Java platform and other relevant industry standards.

The two base products, the Apache NetBeans IDE and Apache NetBeans Platform, are free for commercial and non-commercial use, under the Apache license. The source code to both is available to anyone to reuse as they see fit, within the terms of use.

The Apache NetBeans project is also a vibrant community in which people from across the globe can ask questions, give advice, contribute and ultimately share in the success of our products. On the NetBeans mailing lists and forums, you will find posts from students, developers from top companies, and individuals looking to expand their skills.

The NetBeans Platform provides all of these out of the box. You don’t need to manually code these or other basic features, yourself, anymore. See what some NetBeans-based applications

look like. The platform does not add a lot of overhead to your application — but it can save a huge amount of time and work.

The Apache NetBeans Platform provides a reliable and flexible application architecture. Your application does not have to look anything like an IDE. It can save you years of development time. The NetBeans Platform gives you a time-tested architecture for free. An architecture that encourages sustainable development practices. Because the NetBeans Platform architecture is modular, it's easy to create applications that are robust and extensible

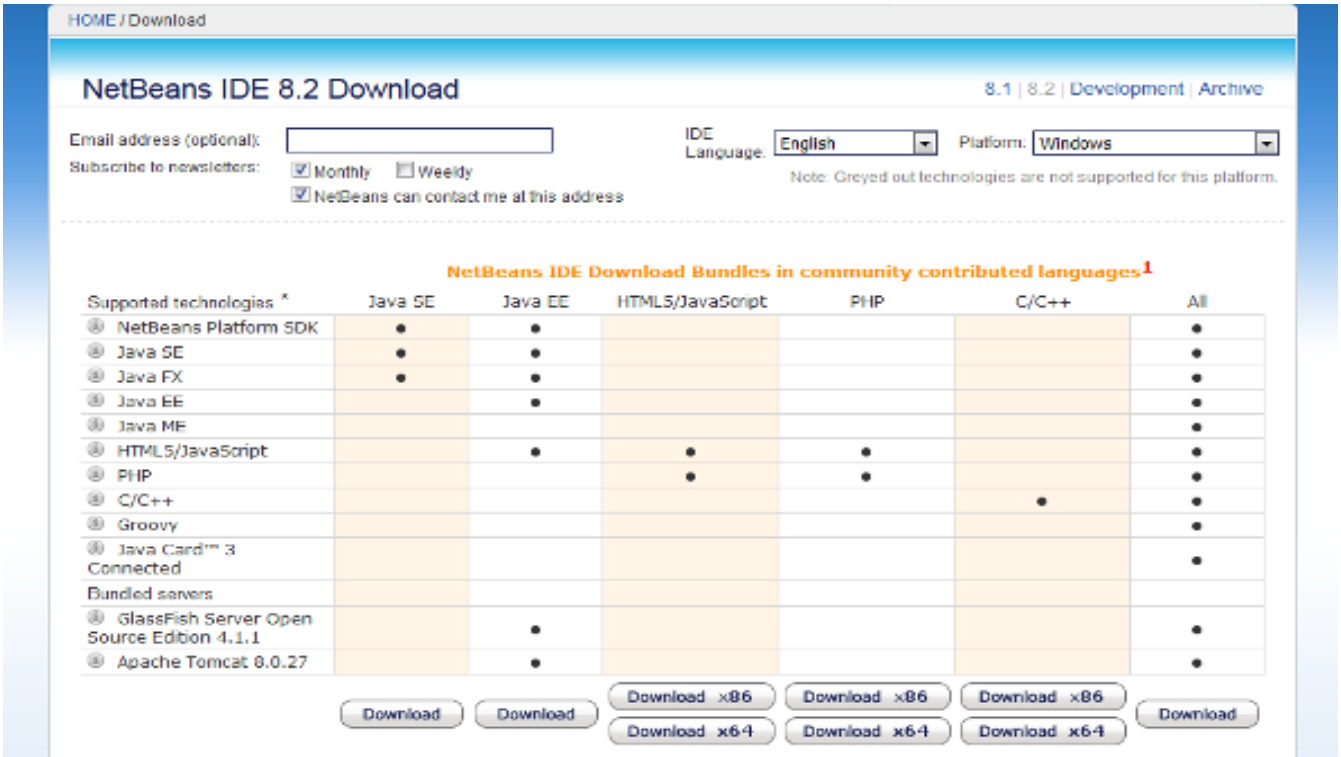

Figure 5 NetBeans Installer

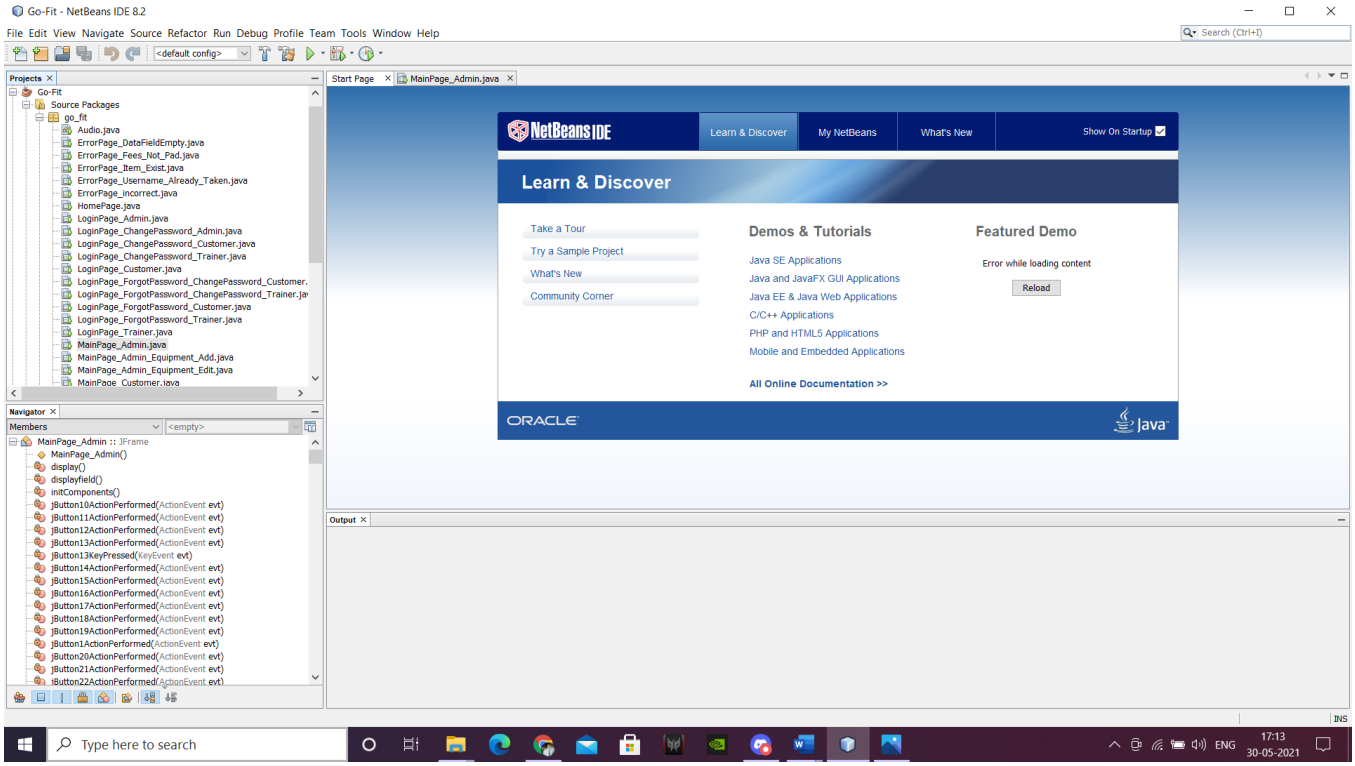

Figure 6 NetBeans Homepage

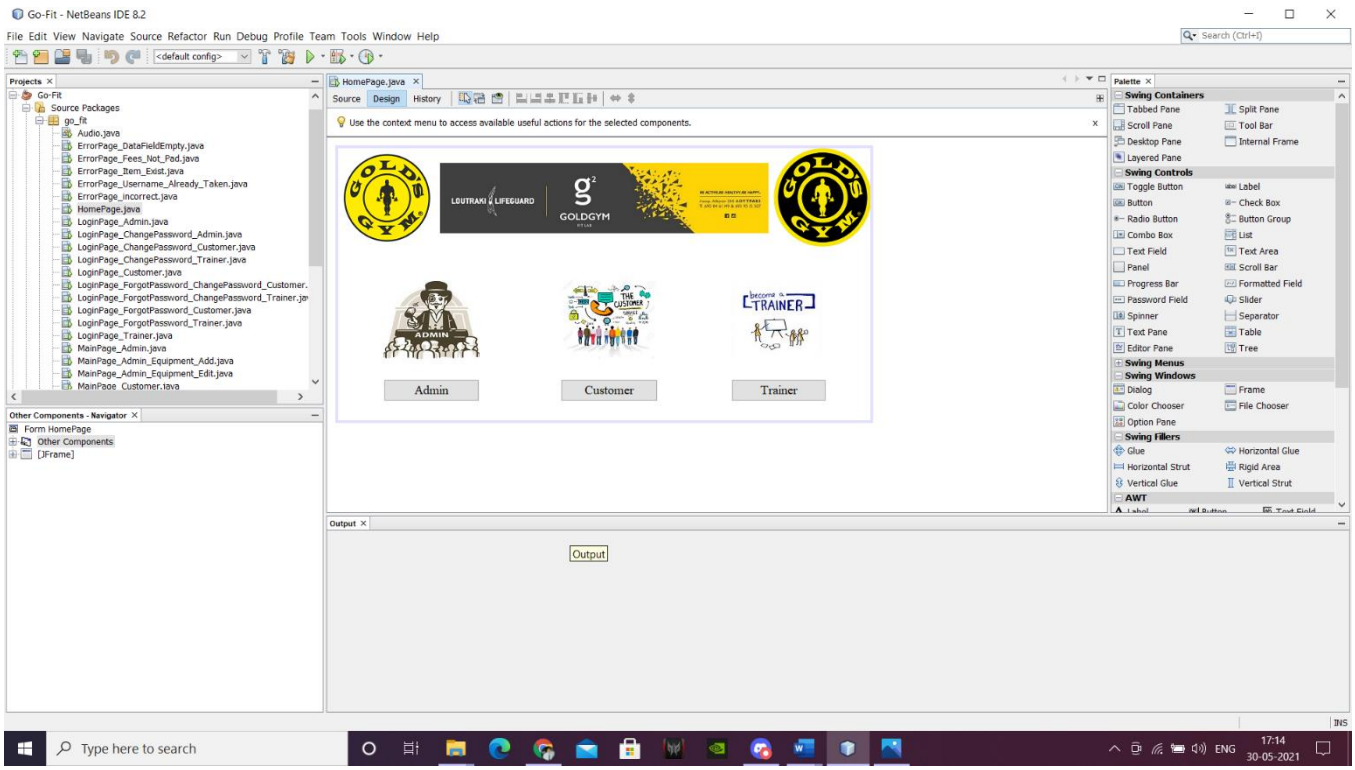

Figure 7 NetBeans Design

2.5.2 MySQL Workbench

MySQL Workbench is a unified visual tool for database architects, developers, and DBAs. MySQL Workbench provides data modelling, SQL development, and comprehensive administration tools for server configuration, user administration, backup, and much more. MySQL Workbench is available on Windows, Linux and Mac OS X.

MySQL Workbench enables a DBA, developer, or data architect to visually design, model, generate, and manage databases. It includes everything a data modeler needs for creating complex ER models, forward and reverse engineering, and also delivers key features for performing difficult change management and documentation tasks that normally require much time and effort.

MySQL Workbench delivers visual tools for creating, executing, and optimizing SQL queries. The SQL Editor provides colour syntax highlighting, auto-complete, reuse of SQL snippets, and execution history of SQL. The Database Connections Panel enables developers to easily manage standard database connections, including MySQL Fabric. The Object Browser provides instant access to database schema and objects.

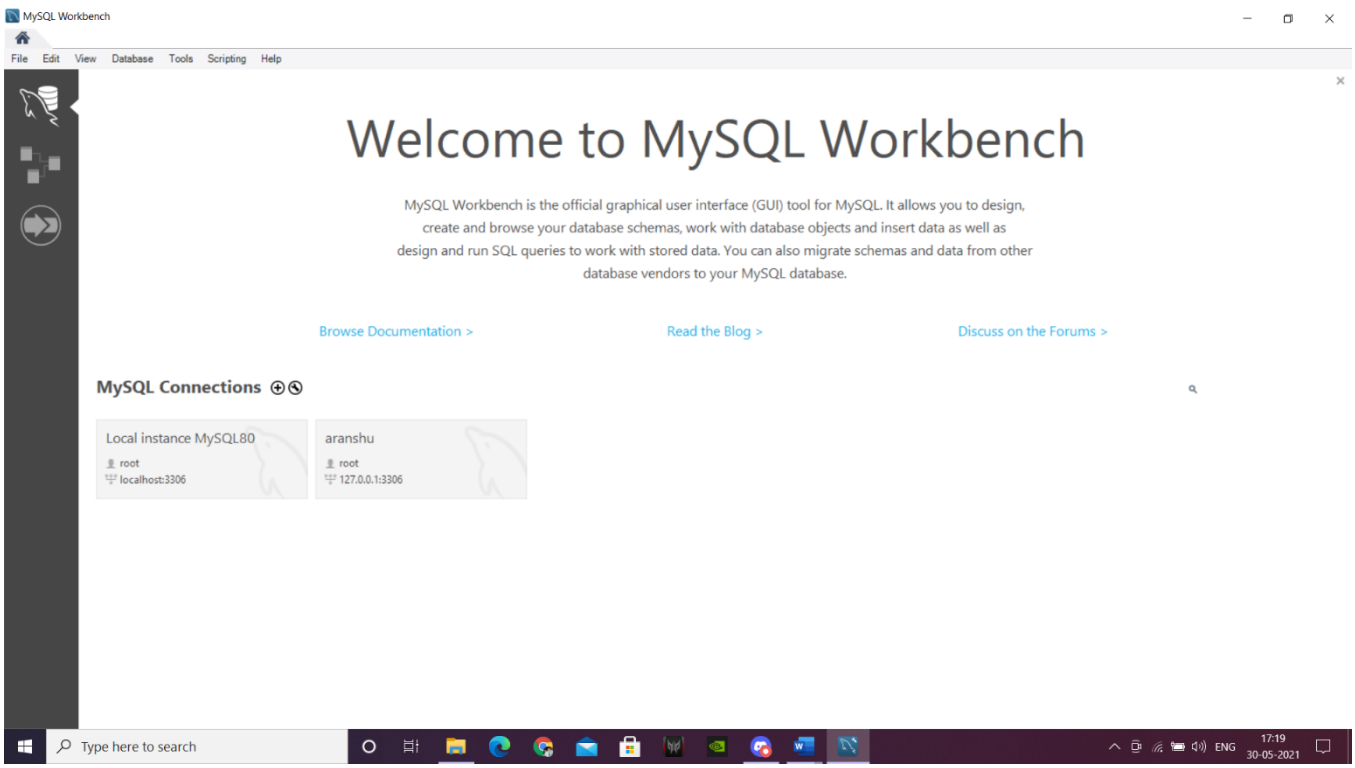

Figure 8 My SQL Homepage

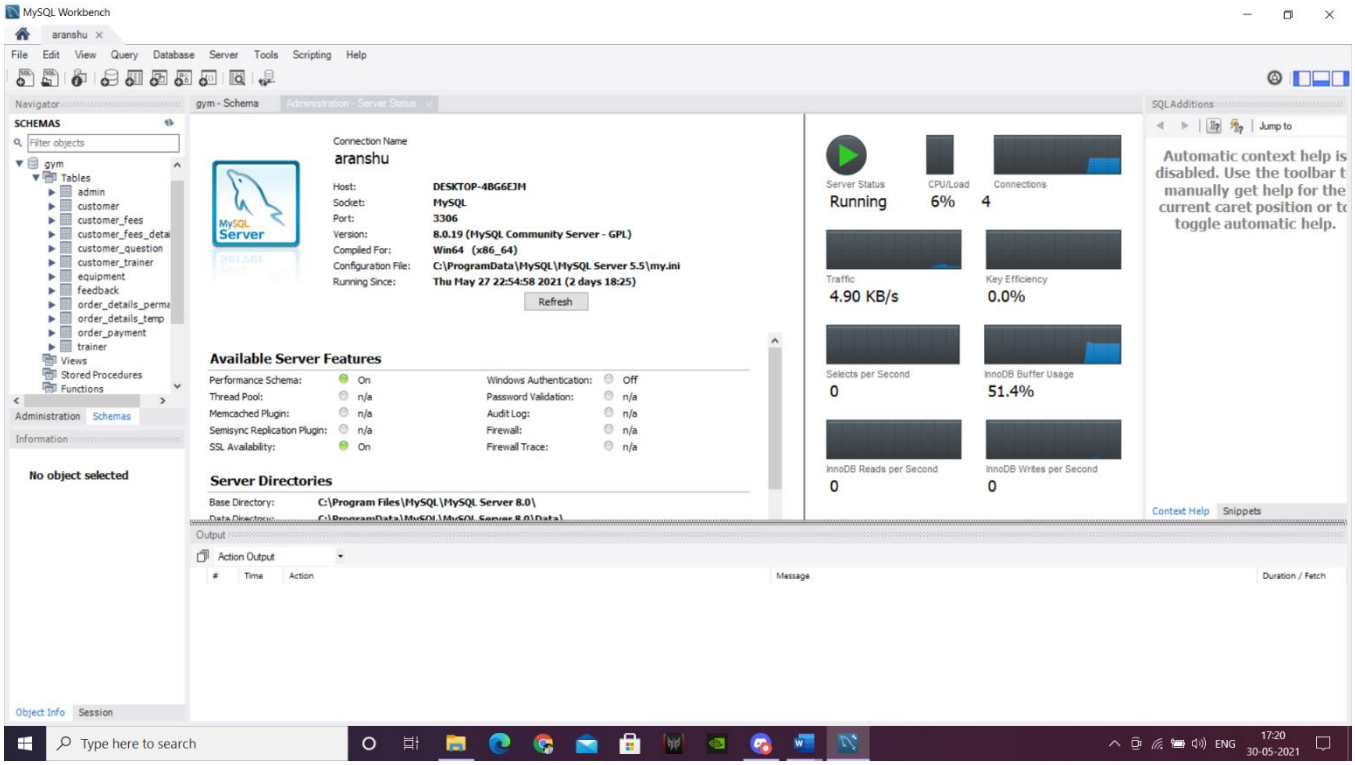

Figure 9 My SQL Server Status

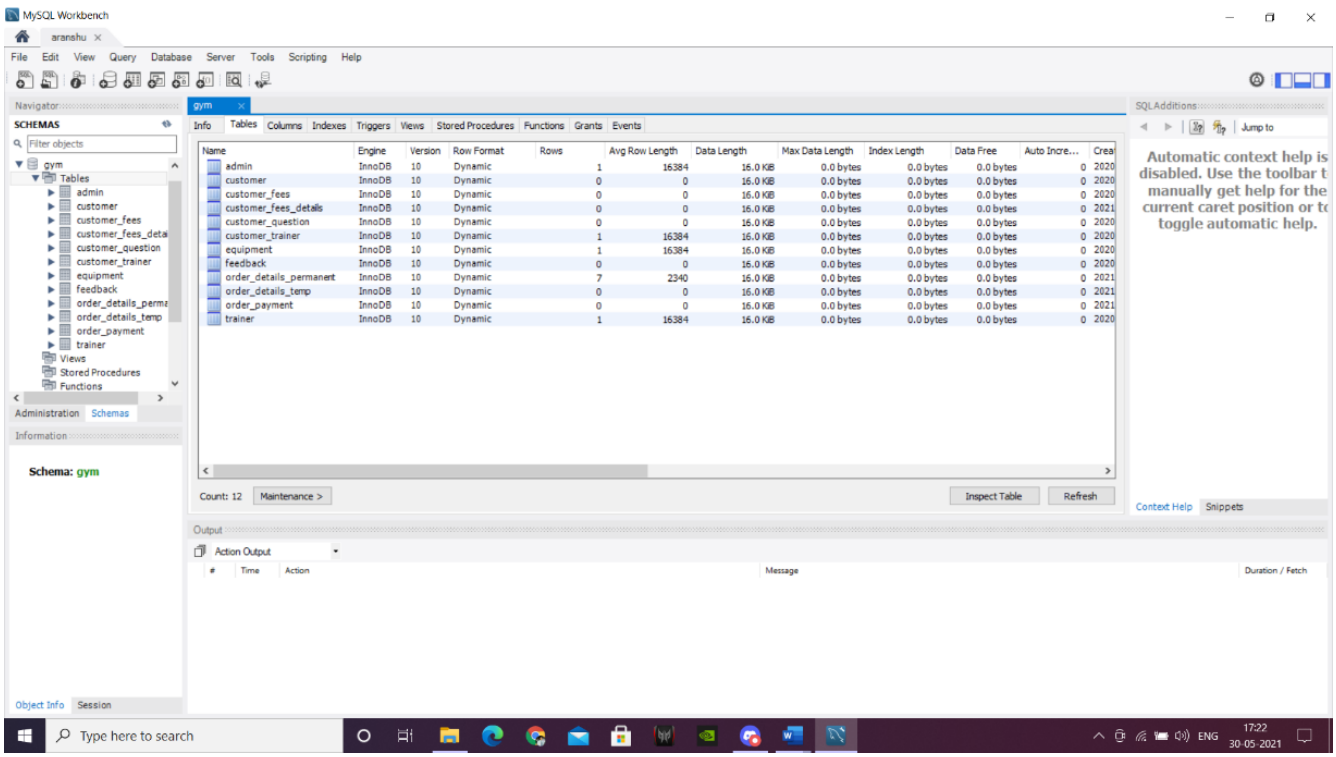

Figure 10 My SQL Table

CHAPTER 3: ARCHITECTURE DIAGRAM

3.1 DFD

A data-flow diagram (DFD) is a way of representing a flow of a data of process or a system (usually information system) The DFD also provides information about the outputs and inputs of each entity and the process itself. A data-flow diagram has no control flow, there are no decision rules and no loops. The data-flow diagram is part of the structured-analysis modelling tools. When using UML, the activity diagram typically takes over the role of the data-flow diagram. A special form of data-flow plan is a site-oriented data-flow plan.

The process (function, transformation) is part of a system that transforms inputs to outputs. The symbol of a process is a circle, an oval, a rectangle or a rectangle with rounded corners (according to the type of notation). The process is named in one word, a short sentence, or a phrase that is clearly to express its essence.

Data flow (flow, dataflow) shows the transfer of information (sometimes also material) from one part of the system to another. The symbol of the flow is the arrow. The flow should have a name that determines what information (or what material) is being moved. Exceptions are flows where it is clear what information is transferred through the entities that are linked to these flows. Material shifts are modelled in systems that are not merely informative. Flow should only transmit one type of information (material).

A data flow diagram shows the way information flows through a process or system. It includes data inputs and outputs, data stores, and the various subprocesses the data moves through. DFDs are built using standardized symbols and notation to describe various entities and their relationships. Data flow diagrams visually represent systems and processes that would be hard to describe in a chunk of text. You can use these diagrams to map out an existing system and make it better or to plan out a new system for implementation. Visualizing each element makes it easy to identify inefficiencies and produce the best possible system.

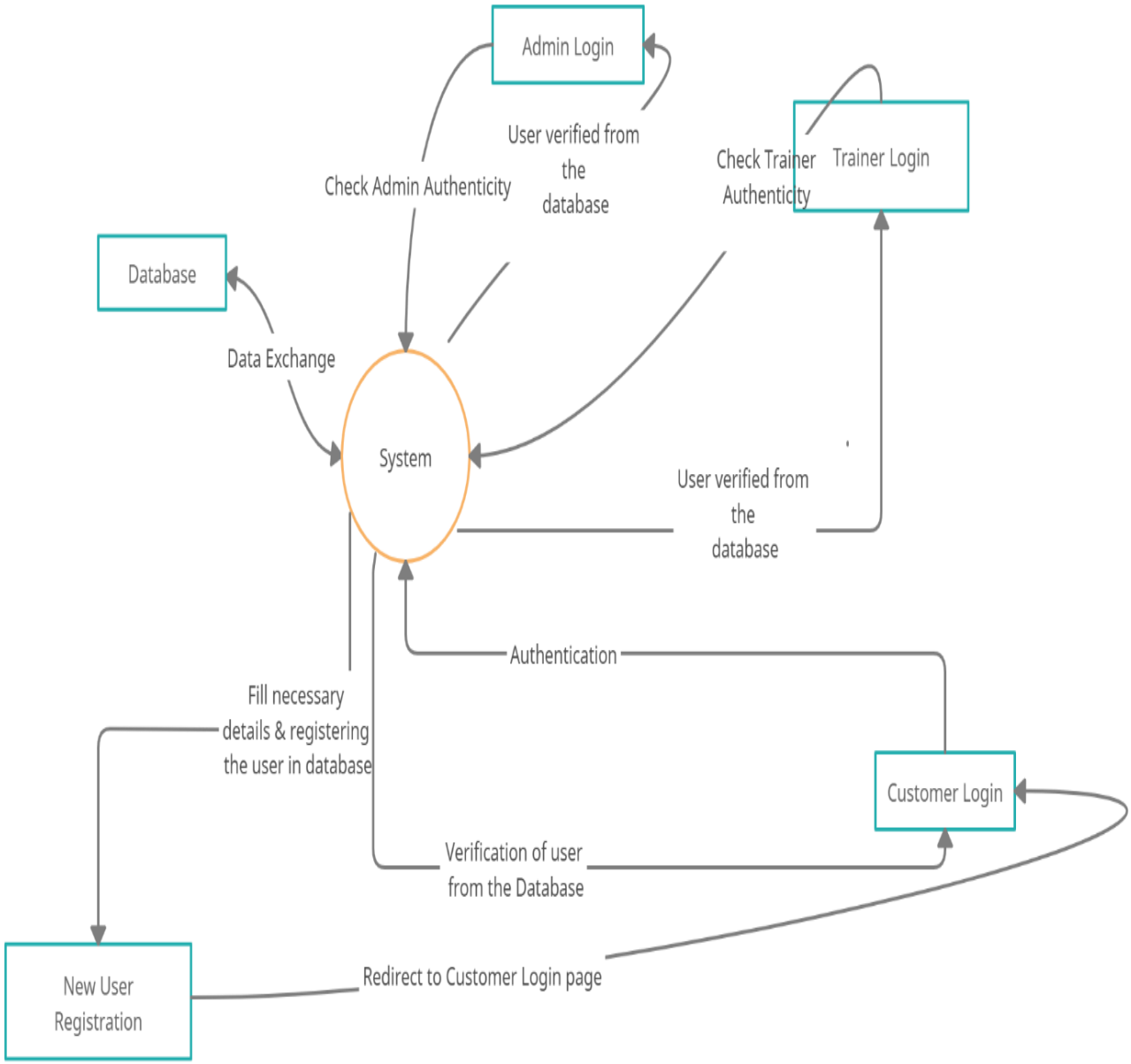

Figure 11 DFD

3.2 BLOCK LEVEL DIAGRAM

A block diagram is a specialized, high-level flowchart used in engineering. It is used to design new systems or to describe and improve existing ones. Its structure provides a high-level overview of major system components, key process participants, and important working relationships.

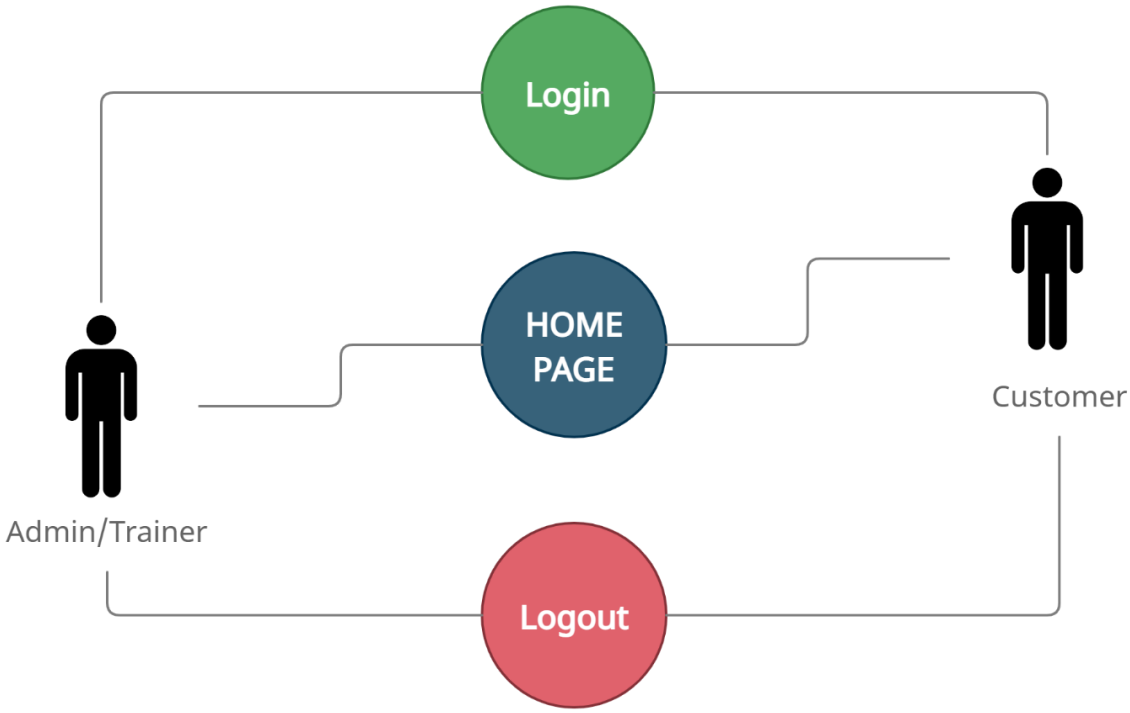

Figure 12 Block Level Diagram

CHAPTER 4: METHODLOGY

4.1 About Agile Methodologies

Agile methodologies are approaches to product development that are aligned with the values and principles described in the Agile Manifesto for software development. Agile methodologies aim to deliver the right product, with incremental and frequent delivery of small chunks of functionality, through small cross-functional self-organizing teams, enabling frequent customer feedback and course correction as needed.

In doing so, Agile aims to right the challenges faced by the traditional "waterfall" approaches of delivering large products in long periods of time, during which customer requirements frequently changed, resulting in the wrong products being delivered.

4.2 Application of Agile Methodology

Through most of its brief history (since 1999-2000), "Agile" has been predominantly an approach to software development and IT application development projects. Since then, however, it now extends to other fields, too, especially in the knowledge and services industries.

Agile is about being responsive to the market and to the customer by responding quickly to their needs and demands and being able to change direction as the situation demands. Be it IT or software development or any other field where there is a flow of work and delivery of work products, Agile methods are applicable. Agile methods attempt to maximize the delivery of value to the customer and minimize the risk of building products that do not – or no longer – meet market or customer needs.

They do this by breaking up the traditionally long delivery cycle (typical of the legacy "waterfall methods") into shorter periods, called sprints or iterations. The iteration provides the cadence for delivering a working product to the customer, getting feedback and making changes based on the feedback.

Thus, Agile methods have sought to reduce delivery times (delivering early, delivering often) to ensure that smaller vertical chunks of the product get to the market, enabling customers to provide feedback early and ensure that the product they finally get meets their needs.

Agile has become an umbrella term for a variety of planning, management and technical methods and processes for managing projects, developing software and other products and services in an iterative manner. These methods include Scrum, by far the most prevalent and

popular method for software, XP (eXtreme Programming or Paired Programming), and more lately Kanban.

Agile methods also include technical practices – most of which fall under the umbrella term DevOps – that enable Test Automation, Continuous Integration/ Continuous Delivery/ Deployment (CI/ CD) and overall, an ever-shrinking delivery cycle for software and other products and services.

The use of Agile as an approach to project management has increased dramatically in recent years. Gartner predicts that agile development methods will soon be used in 80% of all software development projects.

4.3 Agile Manifesto

The Agile Manifesto is a statement of core values and principles for software development. The Agile Manifesto for software development was set up in 2001 and it is a declaration of 4 vital rules and 12principles that serve as a guide for people in agile software development. It was created by 17 professionals who already practiced agile methods such as XP, DSDM, SCRUM, FDD, etc, gathered in the snowy mountains of the US state of Utah, convened by Kent Beck.

Figure 13 Agile Manifesto

4.4 Four Core values of Agile Manifesto

- Individuals and interactions over processes and tools – The first value emphasizes teamwork and communication. We must understand that software development is a human activity and that the quality of interaction between people is vital. Tools are an important part of software development, but making great software depends much more on teamwork, regardless of the tools team may use.
- Working software over comprehensive documentation – Documentation has its place and can be a great resource or reference for users and coworkers alike. The main goal of software development, however, is to develop software that offers business benefits rather than extensive documentation.
- Customer collaboration over contract negotiation – Development teams must work closely and communicate with their customers frequently. By listening to and getting feedback, teams will understand what all stakeholders really want.
- Responding to change over following a plan – Changes are a reality in Software development, a reality that your Software process should reflect. A project plan must be flexible enough to change, as the situation demands.

4.5 Twelve Principles of the Agile Manifesto

- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
- Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
- Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
- Businesspeople and developers must work together daily throughout the project.
- Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
- The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
- Working software is the primary measure of progress.
- Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
- Continuous attention to technical excellence and good design enhances agility.

- Simplicity–the art of maximizing the amount of work not done–is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams.
- At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly.

4.6 Key Agile Methodologies

Agile is an umbrella term for several methods and practices. Let's look at some of the popular methodologies:

- Scrum
- Extreme Programming (XP)
- Adaptive Software Development (ASD)
- Dynamic Software Development Method (DSDM)
- Feature Driven Development (FDD)
- Kanban
- Behavior Driven Development (BDD)

4.7 Scrum Methodology

Scrum methodology is a simple framework for working with complex projects, and it was created by Ken Schwaber and Jeff Sutherland.

Agile software development methodologies are iterative, meaning the work is divided into iterations, which are called Sprints in the case of Scrum. Scrum is executed by small teams of between 7-9 people, including a Scrum Master and a Product Owner.

In Scrum, projects are divided into cycles (typically 2 or 3 week cycles) called Sprints. The Sprint represents a timebox within which a set of features must be developed. Multiple sprints might be combined to form a Release – where formal software/ product delivery is made to the customer/ market.

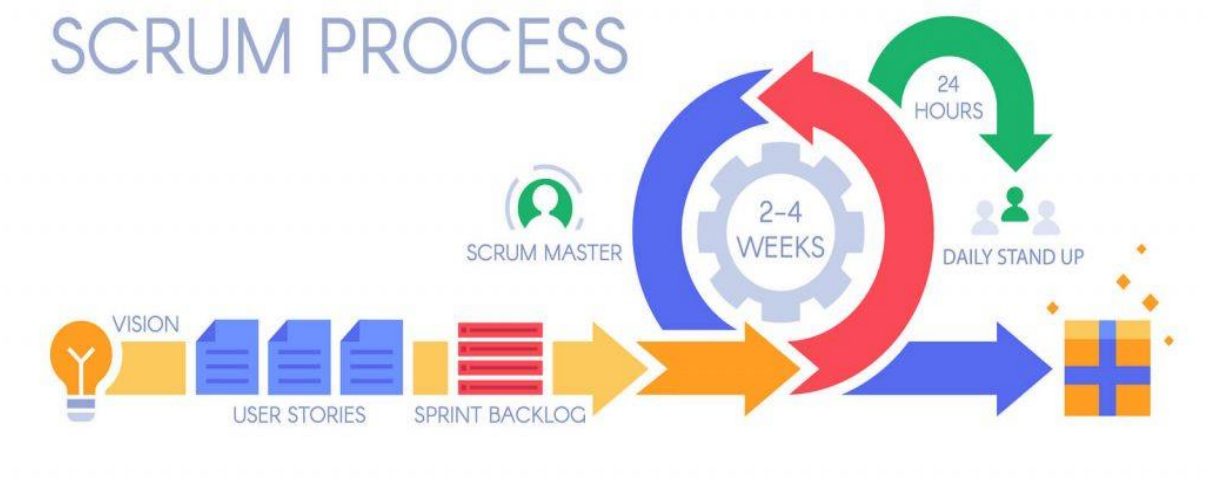

Figure 14 Scrum Process

The overall product functionality is broken down by the Product Owner into smaller features (typically described as Epics and User Stories – or just Stories). These Stories are prioritized and taken up in each Sprint or Iteration. The intent of the method is for the team to be able to demo at the end of each Sprint working pieces of the product to the Product Owner, to make sure that the product is working as intended.

Overall, the Scrum method breaks the long waterfall process delivery into smaller cycles, which enables product teams and the end-customer to frequently review working software and ensure that it meets their business requirements. This ensures that the end product also meets the final requirements of the customer.

The Scrum method is characterized by specific ceremonies such as the Daily Standup meeting, the Sprint Review Meeting, the Demo to the Product Owner and the Sprint Retrospective meeting. All of these meetings provide collaboration and review opportunities to the team to ensure that development is progressing as intended, and any issues are resolved quickly.

CHAPTER 5: SNAPSHOTS

Figure 15 Homepage

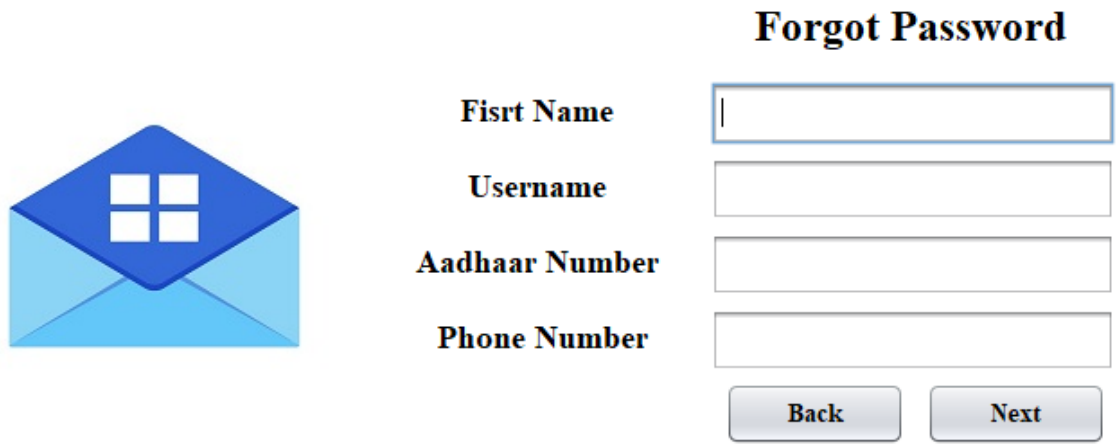

Figure 16 Forgot Password

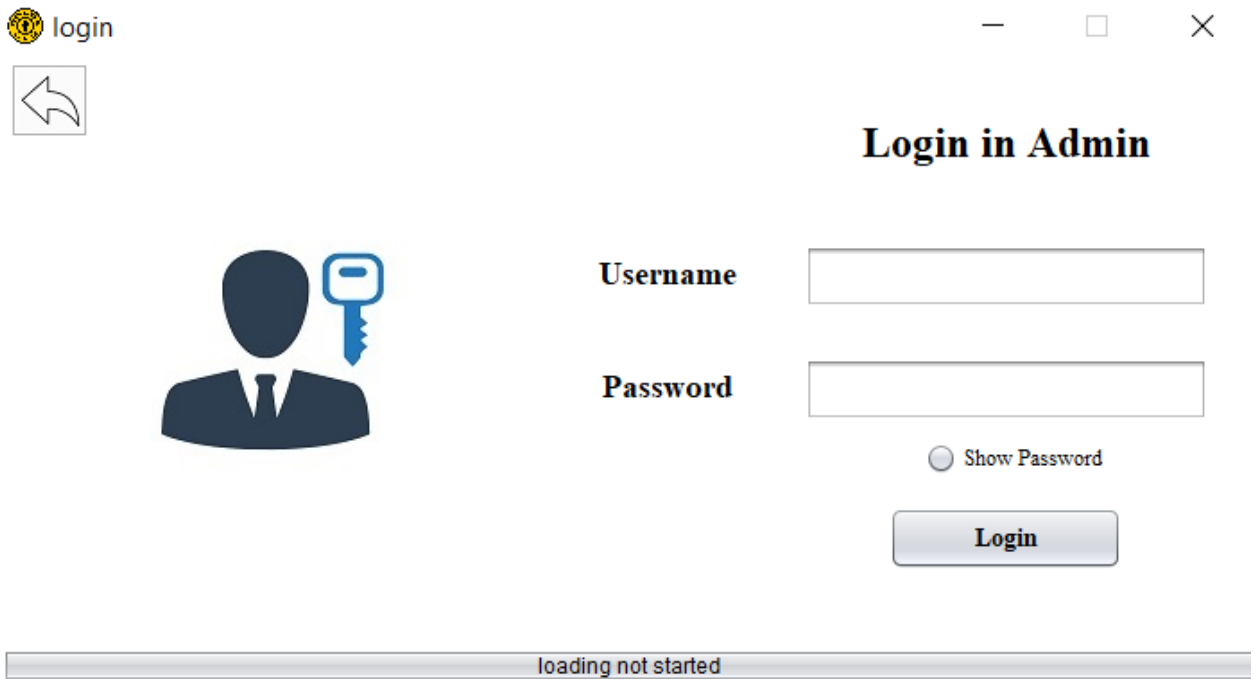

Figure 17 Login Admin

Figure 18 Main page Admin

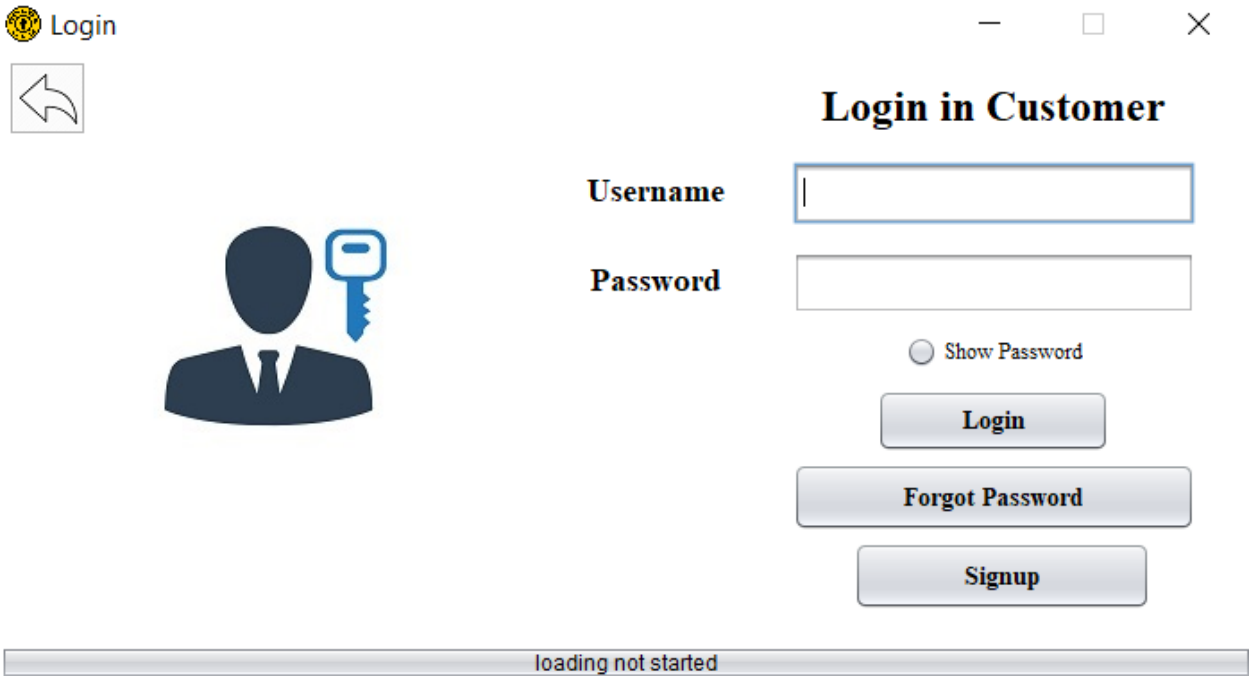

Figure 19 Login Customer

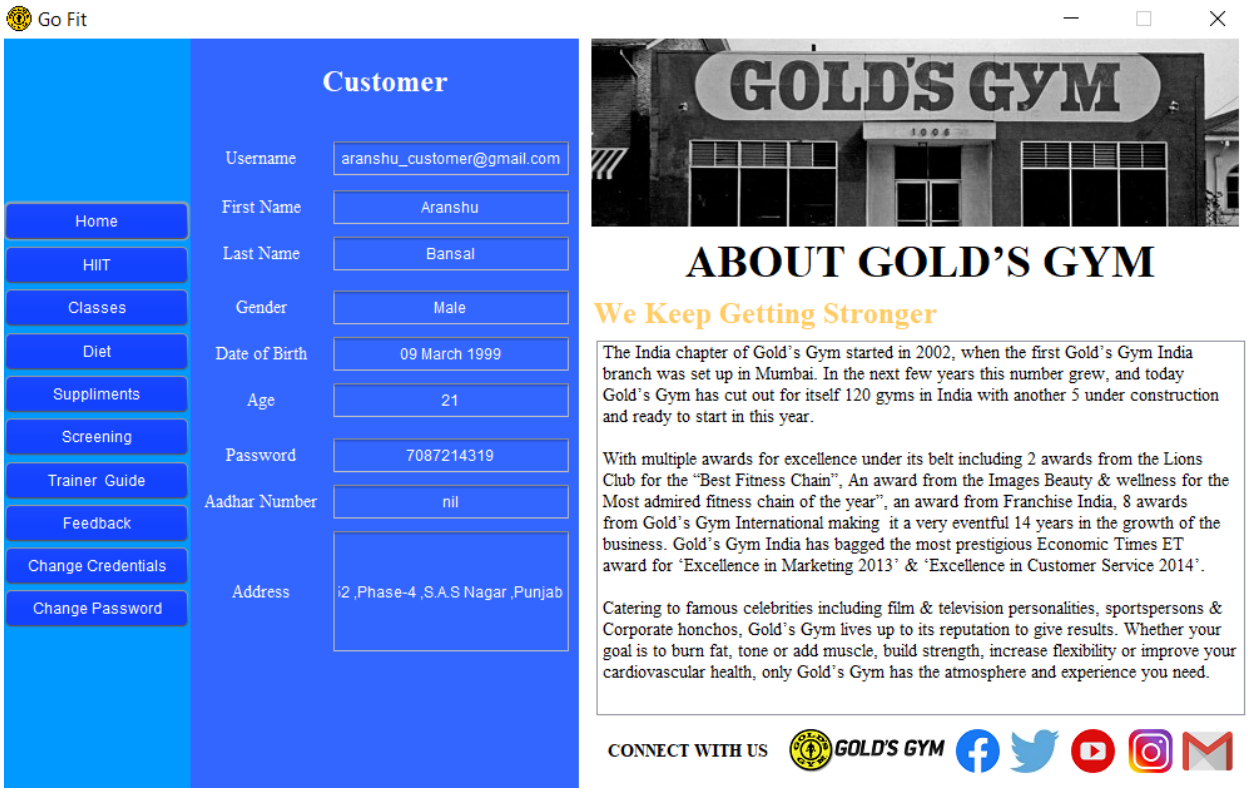

Figure 20 Main page Customer

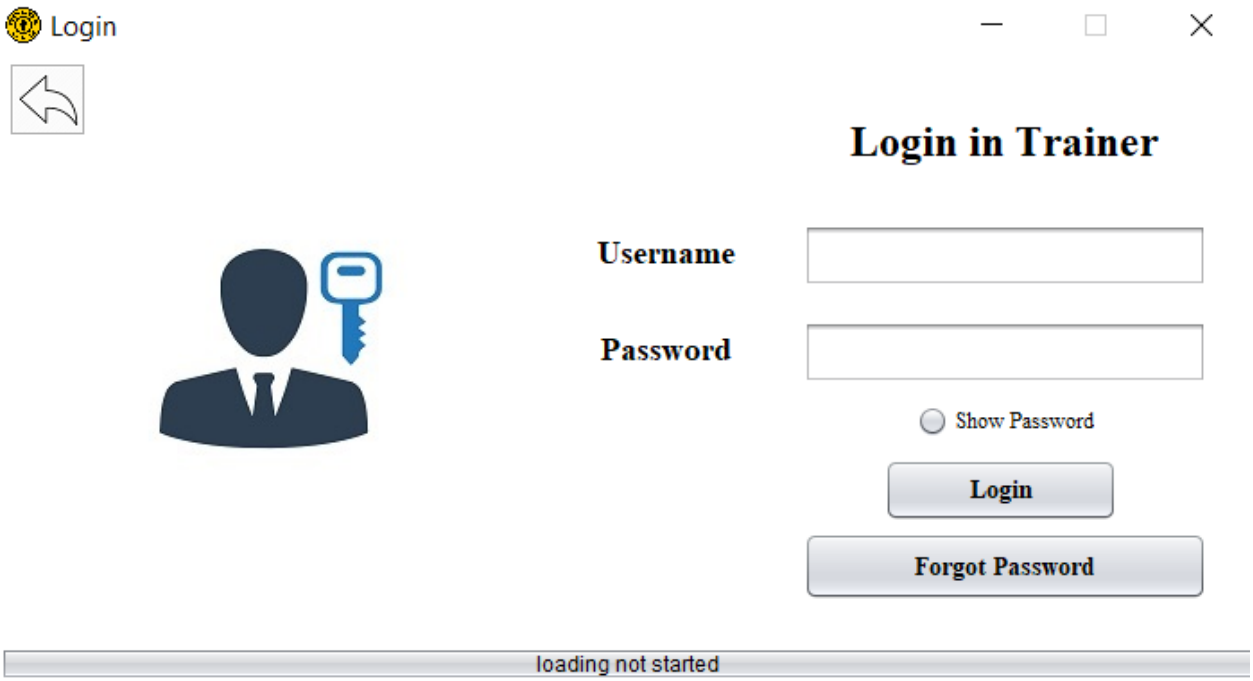

Figure 21 Login Trainer

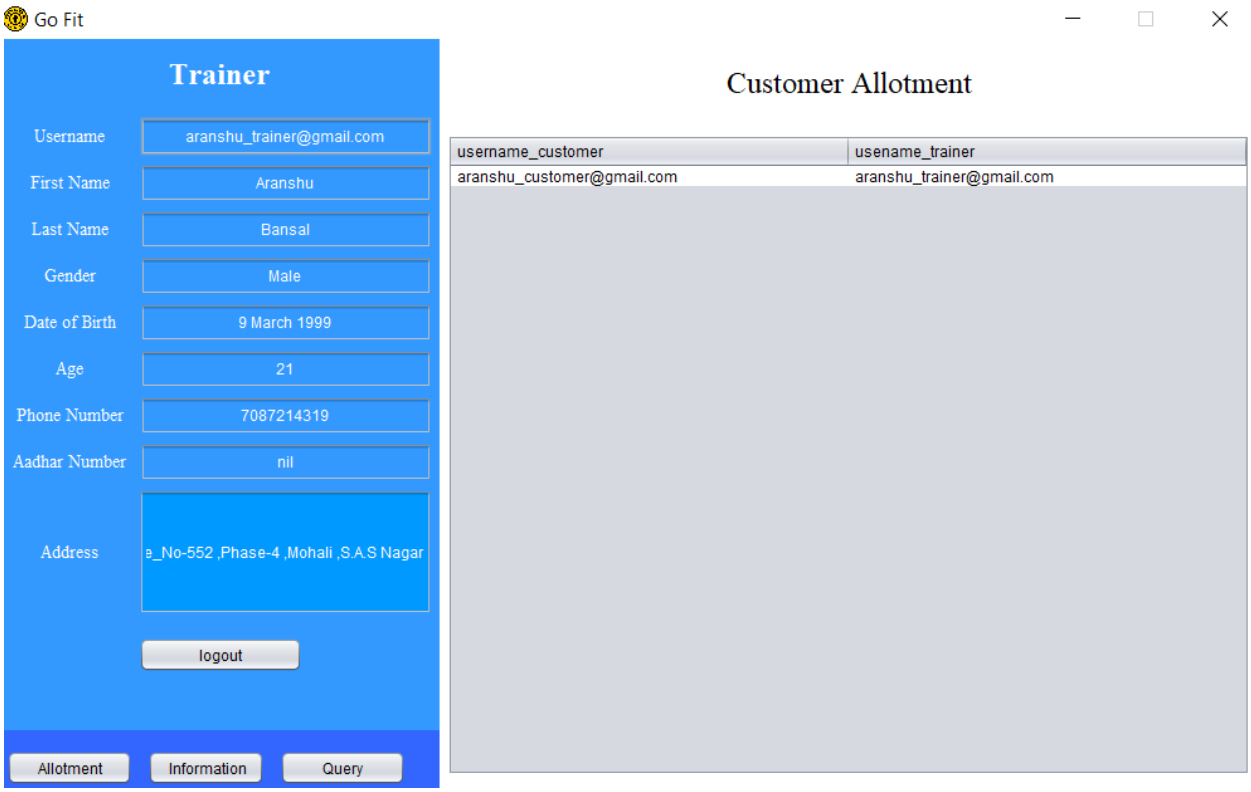

Figure 22 Main page Trainer

Figure 23 Signup

CHAPTER 6: CONCLUSION AND FUTURE SCOPE

6.1 CONCLUSION

The project 'Go Fit' mainly help gym's which are small and medium sized. This application helps to enable the gym owners to generate revenue and further offers an online platform for their business model.

In today's world, technology is very useful in general, it helps us to increase business of gym owners, decrease the competition, be unique in the market, increase the revenue, and also this model is very customer friendly, easy to adapt and very effective.

The interface is really easy to use and a trainer directly links the customers with each other, trainer also take care of various tie-ups.

6.2 Future Scope

- Commercialization- There are various offers like annual subscription where in client pays for 10 months and we give 2 months additional subscription, this helps in commercializing.
- The offers are so good that the gain customer's word of mouth which helps in marketing.
- Revenue Generation- Application helps them to generate revenue by offering an online platform, hence increasing the profits.
- In-build functions- We have various features that are in-built such as online payment facility, equipment management, student's data and managing the data facility, data is completely secure.
- Order and buy stuff- Customers can order and buy from a store that is in-build for customers’ ease.

REFERENCES

1. www.google.com
2. www.javatpoint.com
3. https://stackoverflow.com/
4. https://www.w3schools.com/
5. https://fontawesome.com/
6. https://www.heropatterns.com/
7. https://www.youtube.com/
8. Note