B.Sc. Engg. Project

A Project on Gym Management System

by

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Submitted to

Department of Computer Science & Engineering

(In partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science & Engineering)

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Acknowledgment

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Abstract

People in today's society are less interested in using paperwork. Writing, storing and refining paper documents is time consuming and costly. It also requires more manpower. For this reasons, more or less everyone chooses to run a workplace using software applications. This boosts the efficiency of the task while keeping all of the data on the digital platform in a well-organized way. For example, in a gym, there are three types of people. If each person's data is maintained in the paper document, it will be pretty difficult for the gym manager to keep track of all of these records. As a result, we decided to develop a desktop application that will make the gym manager's job much easier.

Gym Management System

We hereby declare that the Project on Gym Management System studies on software development submitted in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering of Bangladesh University of Business and Technology (BUBT),under the guidance of our supervisor Shovon Roy, Lecturer, department of Computer Science and Engineering, is our own work and that it contains no material which has been accepted for the award to the candidate(s) of any other degree or diploma, except where due reference is made in the text of the project. To the best of our knowledge, it contains no materials previously published or written by any other person except where due reference is made in the project.

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Intake: 44	Intake: 44	Intake: 44

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Dedication

Dedicated to our parents, teachers, friends and who loved us for all their love and inspiration.

Certificate

This is to certify that Afrina Akter Mim(ID:19202103310), Tasnim Islam(ID:19202103313), Rizvia Razzak Abani(ID: 19202103528) were belong to the department of Computer Science and Engineering, have completed their Project on Gym Management System satisfactorily in partial fulfillment for the requirement of Bachelor of Science in Computer Science and Engineering of Bangladesh University of Business and Technology in the year 2022.

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Approval

A Project on "Gym Management System" is submitted by Afrina Akter Mim ID:19202103310, Tasnim Islam ID:19202103313 and Rizvia Razzak Abani ID: 19202103528, Department of Computer Science and Engineering, Bangladesh University of Business and Technology under the supervision of Shovon Roy, Lecturer, Department of Computer Science and Engineering, has been acknowledged as palatable for the partial fulfillment of the necessity for the degree of Bachelor of Science in Computer Science and Engineering and endorsed as to its style and substance.

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Acronyms List

GMS Gym Management System

DBMS Database Management System

ERD Entity Relationship Diagram

SQL Structure Query Language

PK Primary Key

FK Foreign Key

GUI Graphical User Interface

C# C Sharp

VS Visual Studio

ASP Active Server Page

NET Network Enabled Technology

GC Garbage Collector

OOP Object Oriented Programming

MVC Model View Controller

CPU Central Processing Unit

GPU Graphics Processing Unit

UI User Interface

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Chapter 1

Introduction

Gyms have become an indispensable part of our life, providing our society with the best workout and body-building facilities. As a result, some management actions are required to keep track of every individual, including trainers, trainees, and employees. However, keeping paper records is quite tough. As a result, a computerized system to handle all of these difficulties is required. As a result, the foundation of our project is working on a management system for the gym industry. The Gymnasium Management System is an automated version of the manual system that we built.

This desktop application stores data that is needed to be stored for managing a gym. Besides the manager can make changes in this data when they need. This application has a database connected to it. For this, it can store all the data regarding the gym trainers, trainees, employees and all the transactions happened on the gym. To convert the paperwork to digitize document, "Gym Management System" application is developed.

Chapter 2

Project Review

2.1 Problem Statement

The body achieves what the mind believes. To keep the body in good health is a duty. As a result, society and the gymnasium business now require a well-organized, computer-based gymnasium management system.

This system enables the gym's owner and administrator to keep track of a vast amount of information of the people engaging with it and their daily transactions. The do this job we made Gymnasium Management System.

2.2 Objective of this Project

Our main goal is to develop a management system is to lessen up the paperwork and divert the work to a digital platform such as database. To make database access user friendly we developed a desktop application in which the administrator may access all records from a single location, and keep track of peoples, transactions, machinery, and expenses. He can make changes to this recorded data and delete as per his need.

The fundamentals of the C# language have become clearer by the end of this project. We have instilled in ourselves the mindset of producing software and working as part of a team. We discovered some previously unknown functions of the C# language as a result of completing

the project.

2.2.1 Feature of this Project

1. CRUD Operation over Every Table
2. Members, Trainers and Staffs Details Record,
3. Branch and Schedule Record,
4. Equipment Information Record,
5. Transaction Record and Calculation
6. Print Transaction over a Period of Time
7. Print Payment Information for the Member

2.2.2 Benefits of this Project

1. Efficient System- admin can easily maintain records with quite efficiently.
2. Removing Data Redundancy- get all the information in a single place
3. With No Wastage of Space- no paperwork is required.
4. Minimum or Less Employee Required- require less labor. In fact, only one Administrator can handle the whole system.

Chapter 3

Technologies

3.1 Software

3.1.1 Visual Studio

Microsoft Visual Studio is the company's integrated development environment (IDE). It is used to make websites, web apps, web services, and mobile apps, among other things. Windows API, Windows Forms, Windows Presentation Foundation, Windows Store, and Microsoft Silverlight are some of the Microsoft software development platforms used by Visual Studio. It has the ability to generate both native and managed code.

Visual Studio supports 36 programming languages, and the code editor and debugger can support practically any programming language (to varied degrees) if a language-specific service is available. C, C++, C++/CLI, Visual Basic.NET, C#, F, JavaScript, TypeScript, XML, XSLT, HTML, and CSS are among the built-in languages. Plug-ins provide support for other languages such as Python, Ruby, Node.js, and M, among others. In the past, Java (and J#) were supported.

The Community edition of Visual Studio is the most basic and is offered for free. "Free, fully-featured IDE for students, open-source, and independent developers," says the Visual Studio Community edition's motto.

3.1.2 Xampp

XAMPP is a popular cross-platform web server that allows programmers to write and test their code on a local web server. It was created by the Apache Friends, and the audience can amend or modify its native source code. It includes Apache HTTP Server, MariaDB, and interpreters for PHP and Perl, among other computer languages. It's available in 11 languages and runs on a variety of platforms, including Windows' IA-32 package, Mac OS X's x64 package, and Linux's x64 package. Before publishing a website or client to the main server, XAMPP allows a local host or server to test it on computers and laptops. It is a platform that provides a suitable environment for testing and verifying the functionality of projects based on Apache, Perl, MySQL, and PHP using the host's system.

3.1.3 MySQL Connector/NET 8.0.23

The most recent General Availability release of the MySQL Connector/NET 8.0 series is MySQL Connector/NET 8.0.23. This version includes support for.NET 5.0 and the X DevAPI, which allows application developers to write code that blends the capabilities of the relational and document models using a modern, NoSQL-like syntax that requires no prior expertise with traditional SQL.

3.2 Programming Language

3.2.1 C# Language

C# (pronounced "See Sharp") is a programming language that Microsoft created and released in 2001. C# is a simple, modern, and object-oriented programming language that gives today's developers the flexibility and functionality they need to create software that will not only work today, but also for years to come. C# enables developers to create a wide range of safe and robust.NET applications. C# comes from the C family of languages, and will be immediately familiar to C, C++, Java, and JavaScript programmers. The C#

programming language was created to allow companies to create a variety of software using a single programming language. Web, mobile, and app development are all supported by C#. C likewise avoids unstructured language features and complexity.

3.3 Software framework

3.3.1 The .NET framework

The .NET framework is a software development framework from Microsoft. It is designed and developed by Microsoft and the first beta version released in 2000. It provides a controlled programming environment where software can be developed, installed and executed on Windows-based operating systems.
Framework Class Library contains a wide number of class libraries in this framework (FCL). CLR (Common Language Runtime) is the execution environment in which.NET software programs are run. Memory management, networking, security, and type safety are just a few of the services provided by this framework.
The .NET Framework is composed of four main components:

1. Common Language Runtime (CLR),
2. Framework Class Library (FCL),
3. Core Languages (WinForms, ASP.NET, and ADO.NET), and
4. Other Modules (WCF, WPF, WF, Card Space, LINQ, Entity Framework, Parallel LINQ, Task Parallel Library, etc.)

Chapter 4

System Analysis

4.1 System User Analysis

The administrator has complete control over the system. The administrator has access to the every database holding data of the members, trainers, staff, branch, schedule, equipment and transaction. But first he has to login first and then he can view all data, insert any data, change/update any data and also can delete any data from the database. He can print data from the transaction table as per his need.

An admin With his unique Name and Password must be logged in to be able to get into the system and gain the requisite limited access. When the application first opens, the system should display a user-friendly interface that allows the admin to log in.The system shall notify the admin if incorrect characters are used in the name or password fields. With a single click, the Admin can control all Members and their records.

The terms "add," "update," "view," and "delete" are used here to refer to the actions of adding, updating, viewing, and deleting records.

The term "search" is used here to search specific record from the database.

The term "print" is used here to print any data from the database.

Chapter 5

System Overview

5.1 System User Panel

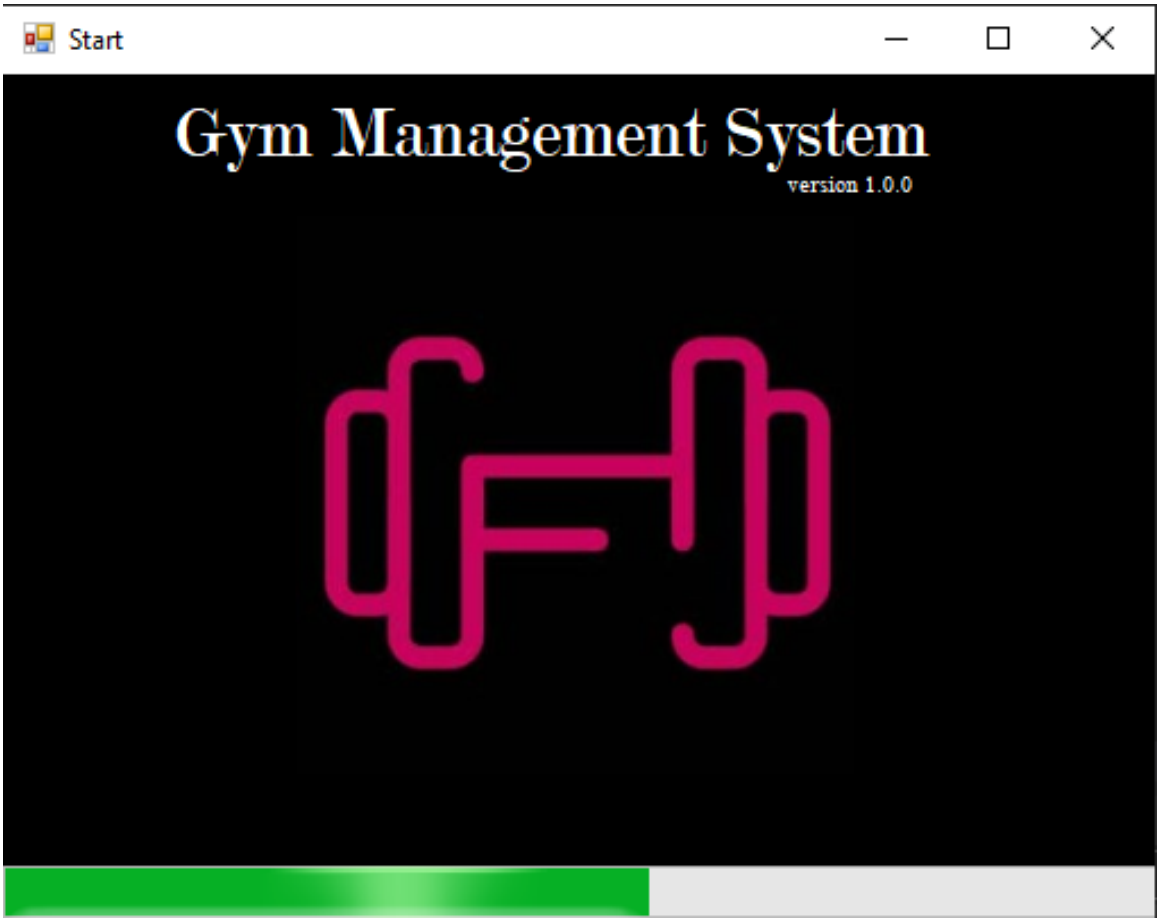

Figure 5.1: Starting Page

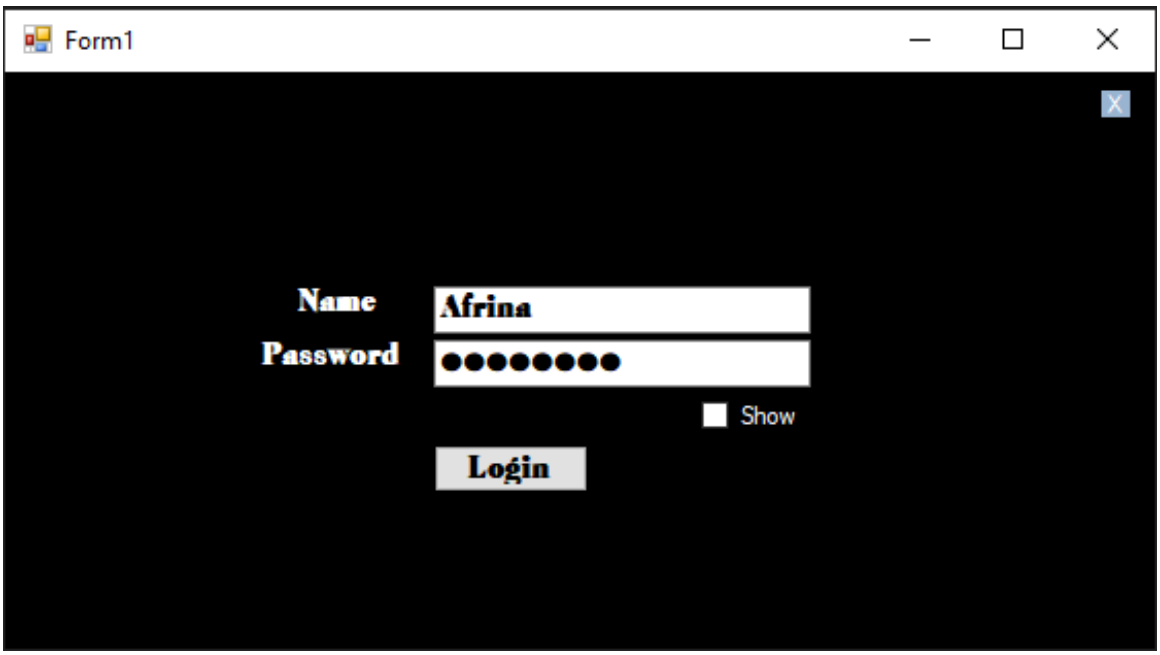

Figure 5.2: Login Page

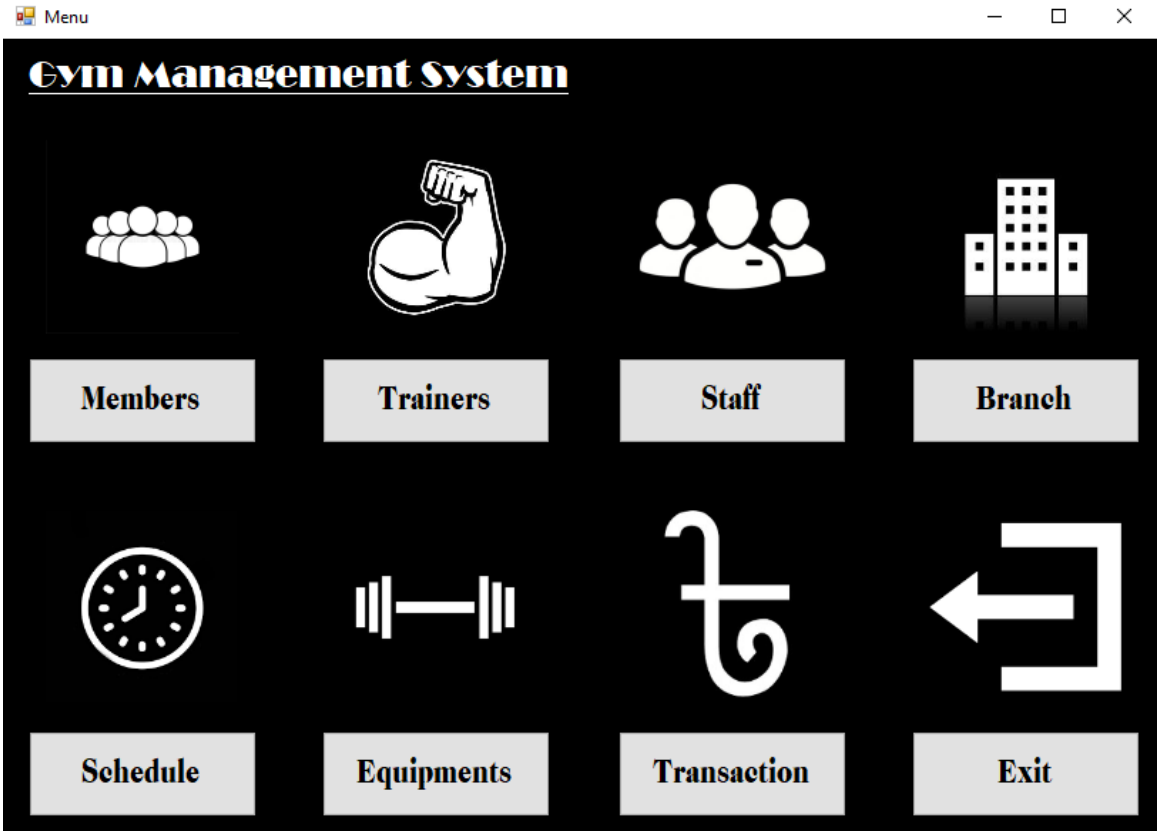

Figure 5.3: Menu Page

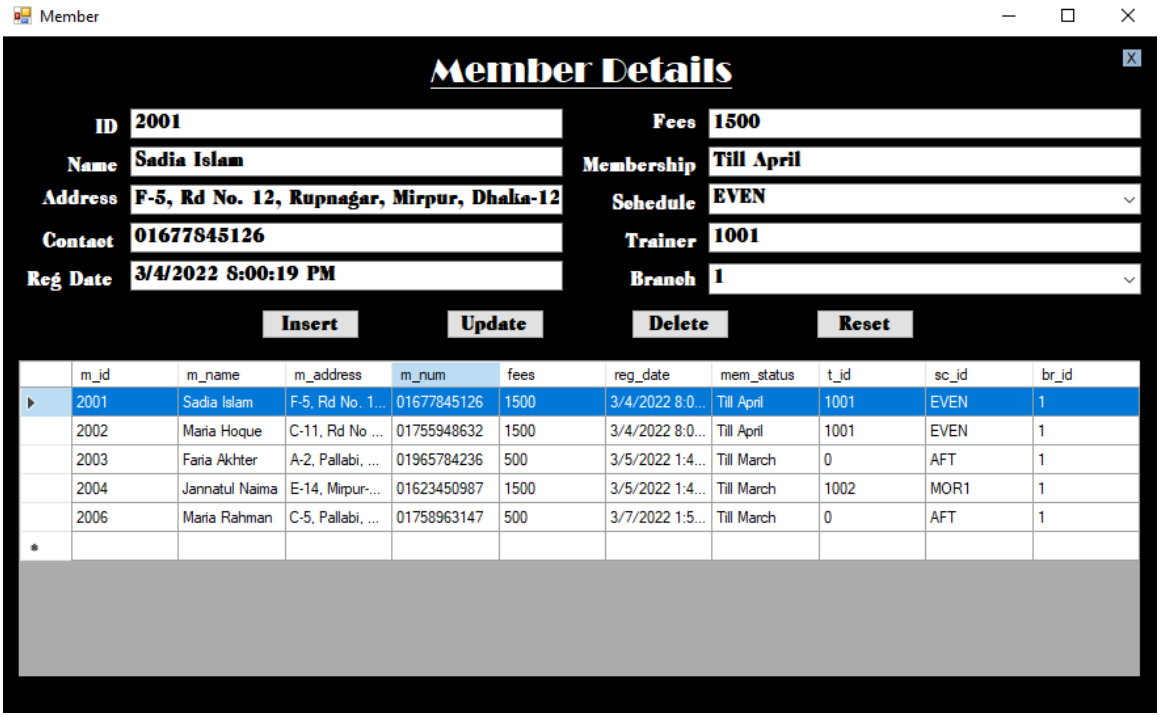

Figure 5.4: Member Data Page

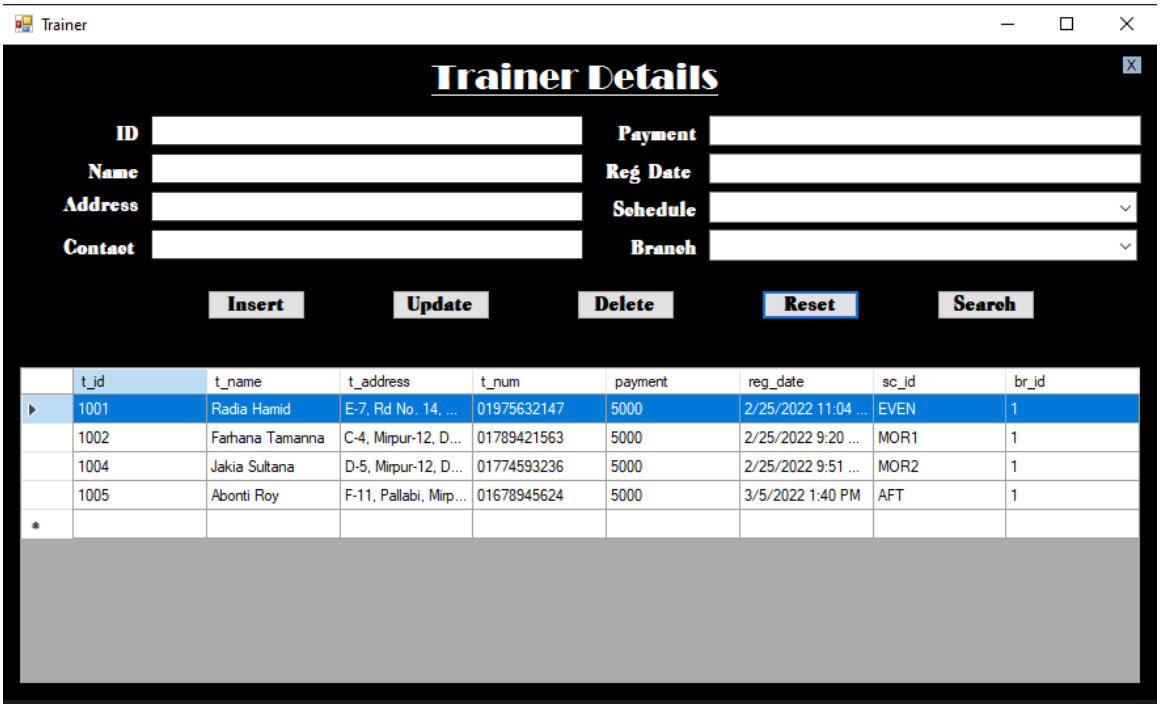

Figure 5.5: Trainer Data Page

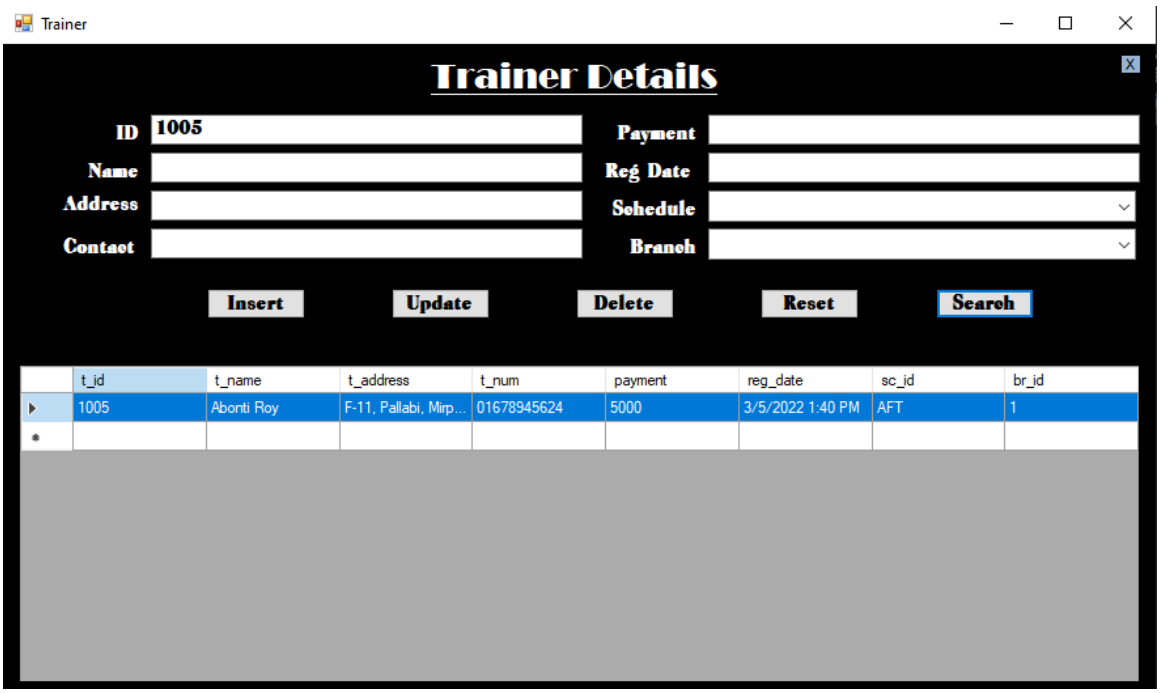

Figure 5.6: Search Trainer by ID

Figure 5.7: Search Trainer by Name

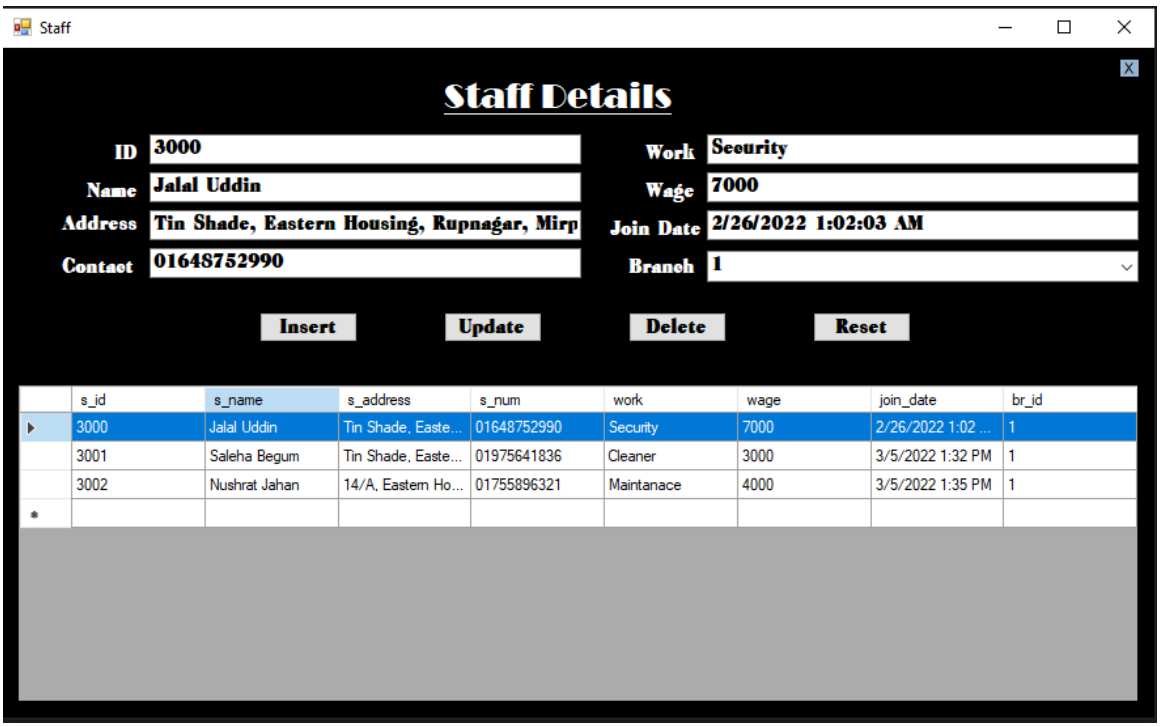

Figure 5.8: Staff Data Page

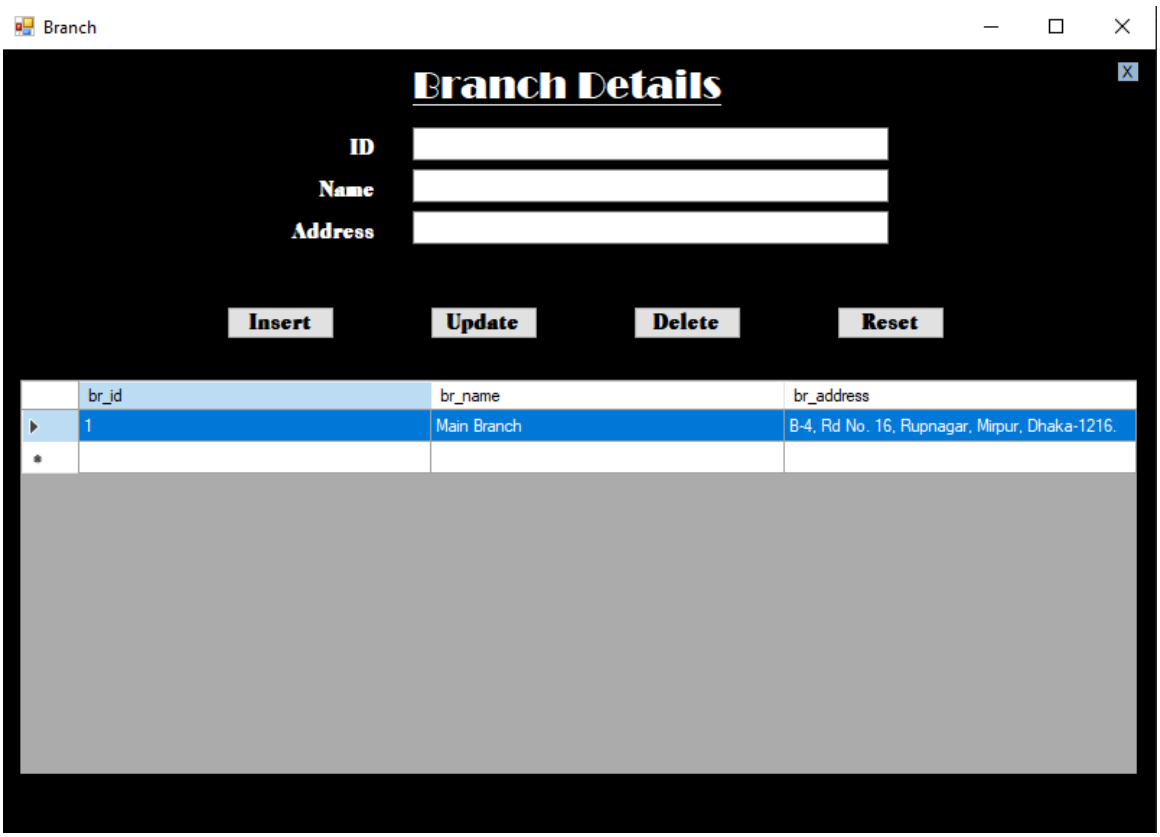

Figure 5.9: Branch Data Page

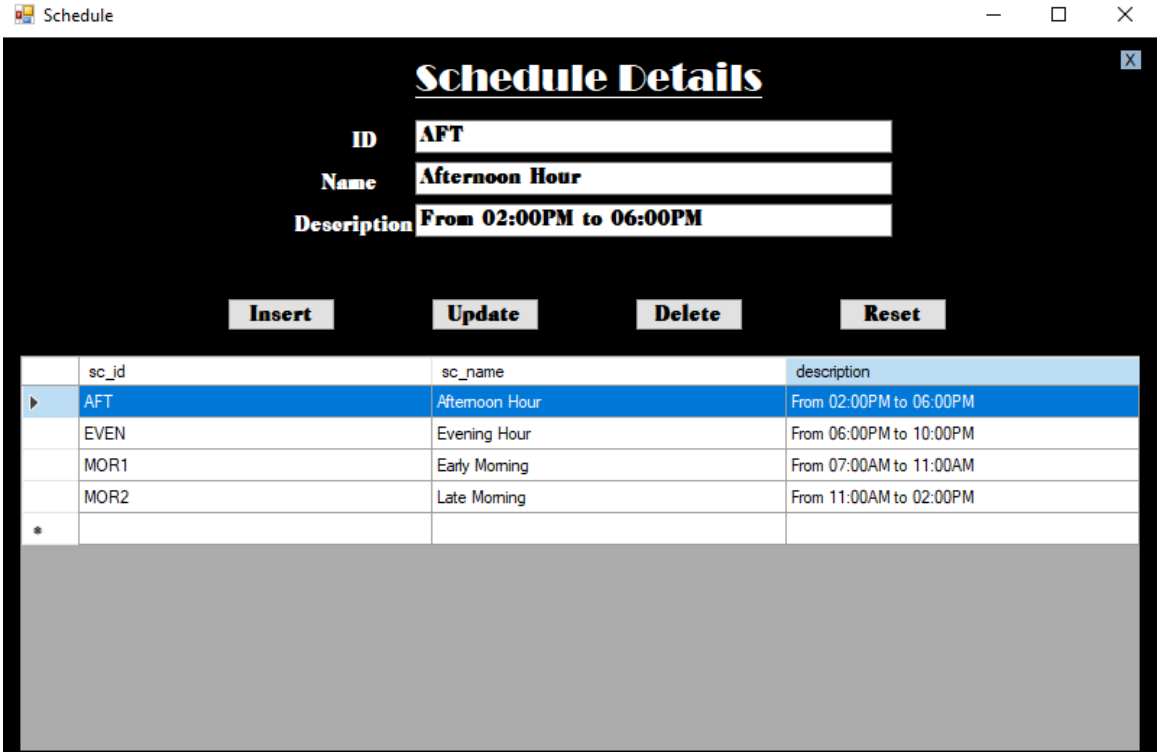

Figure 5.10: Schedule Data Page

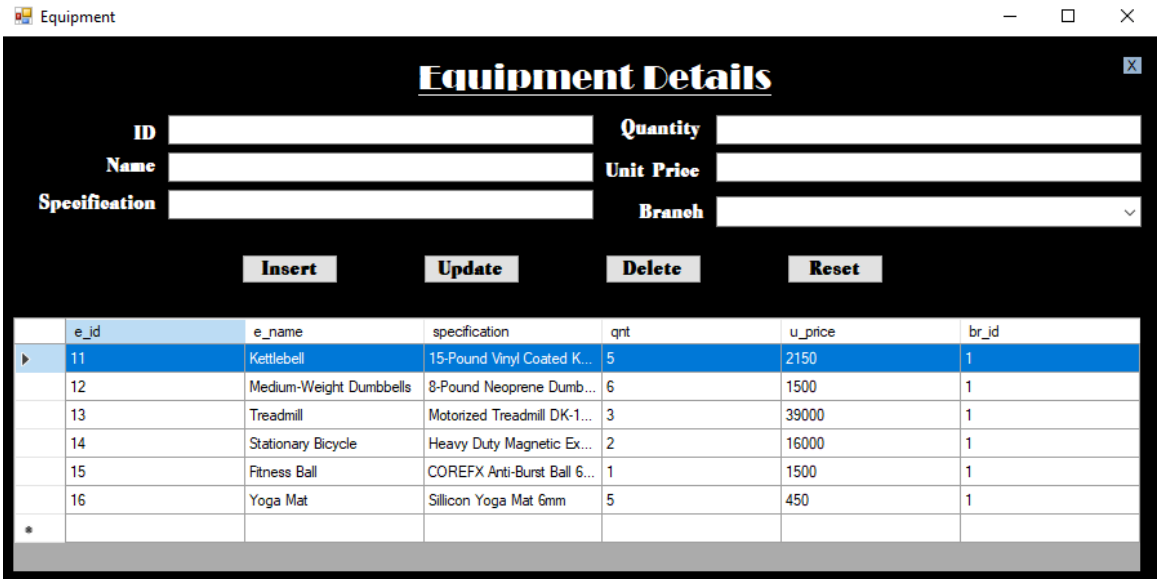

Figure 5.11: Equipment Data Page

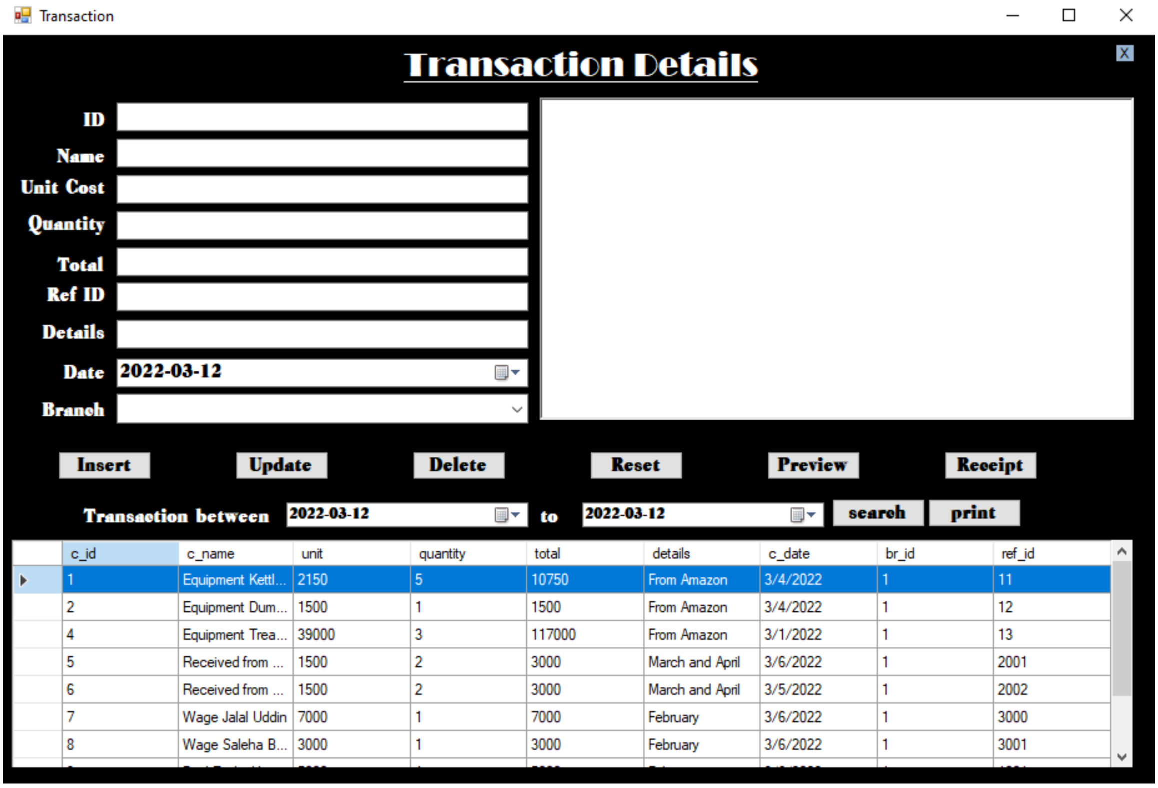

Figure 5.12: Transaction Data Page

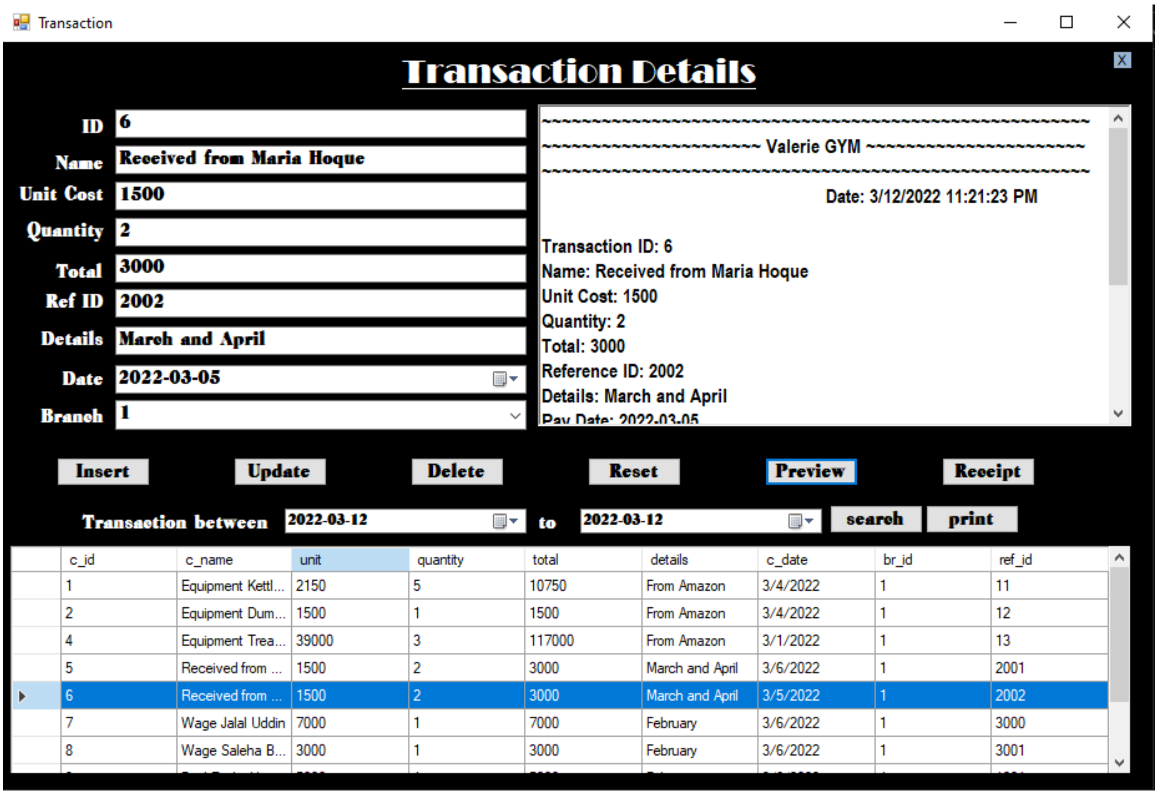

Figure 5.13: Selected Transaction Preview Page

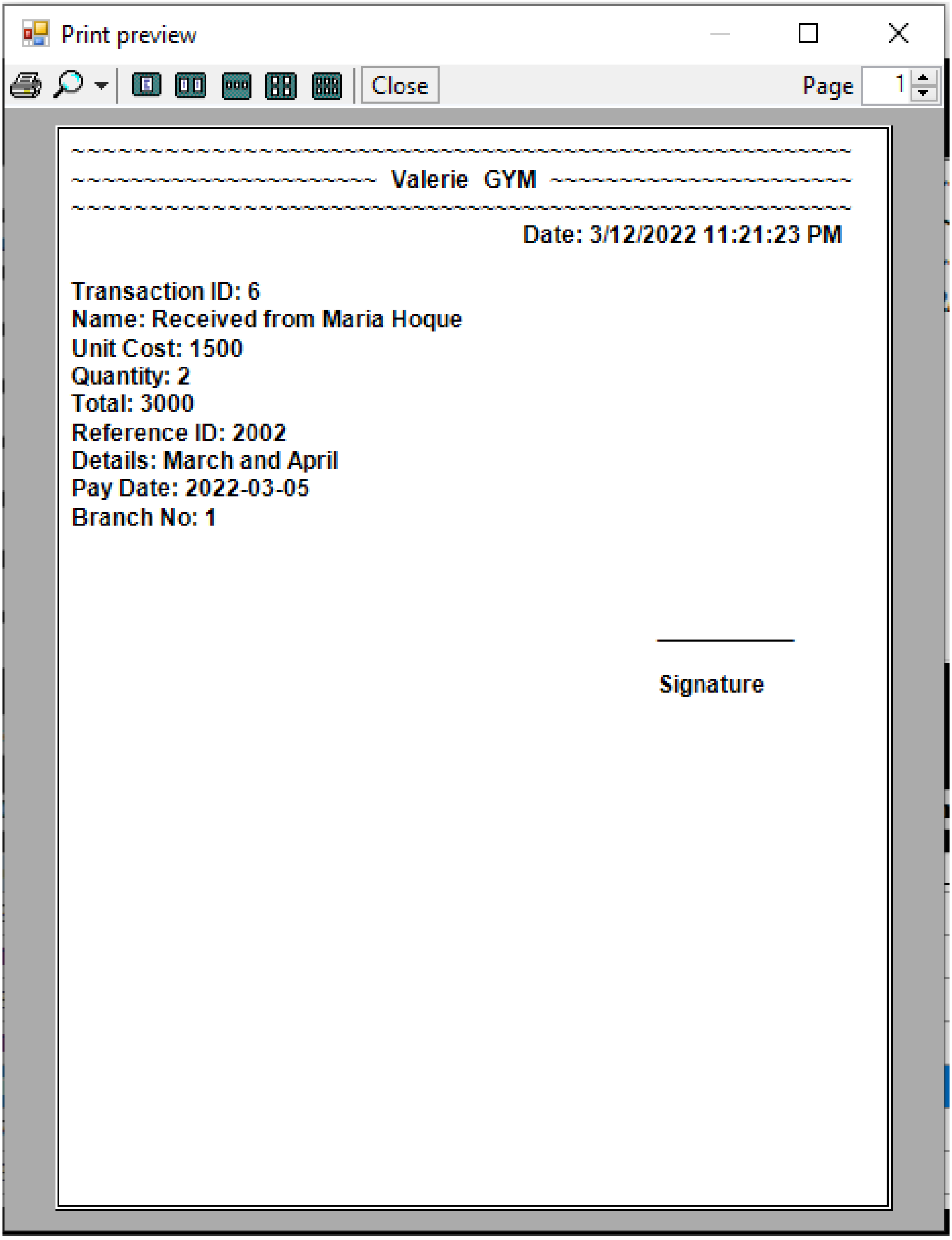

Figure 5.14: Selected Transaction Row Print

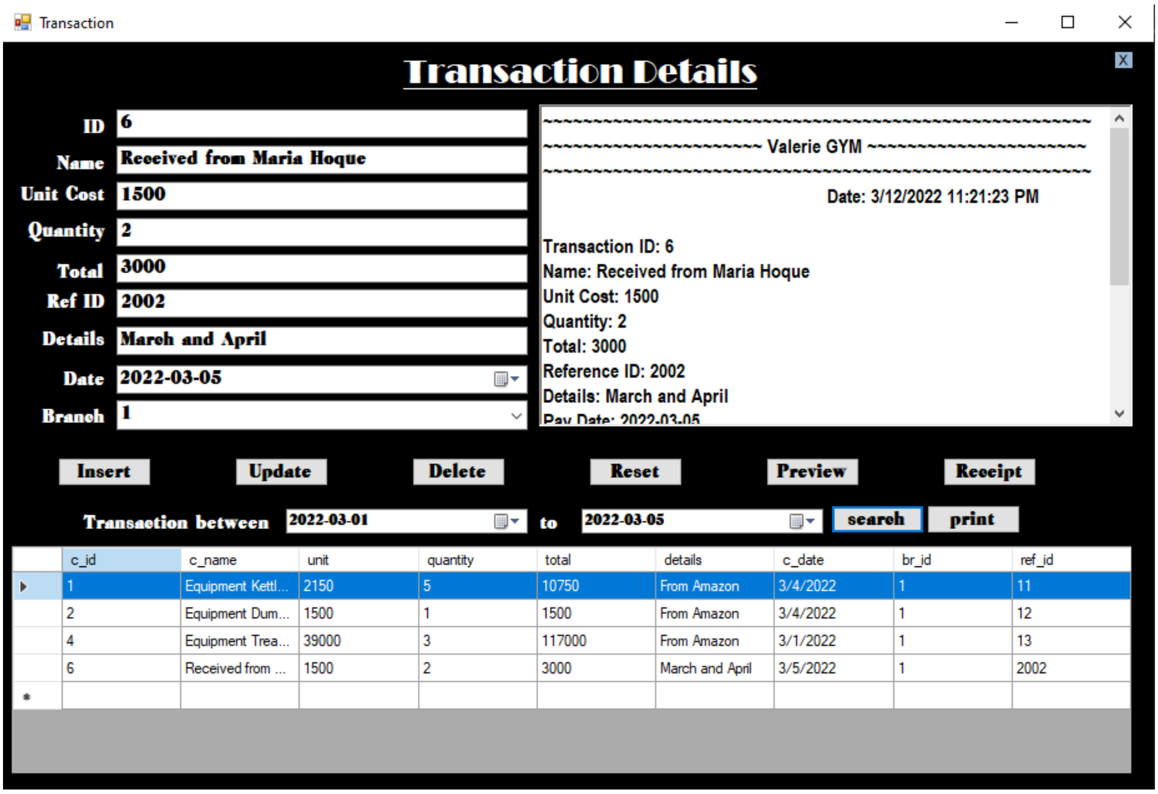

Figure 5.15: Transaction Search Between Two Date

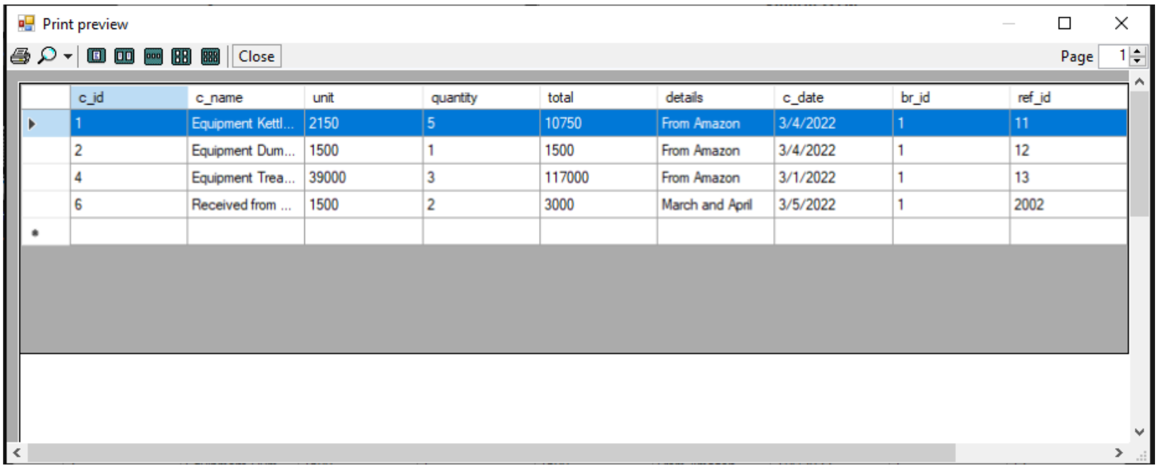

Figure 5.16: Searched Transaction Data Print

Chapter 6

Diagram

6.1 Schema Diagram

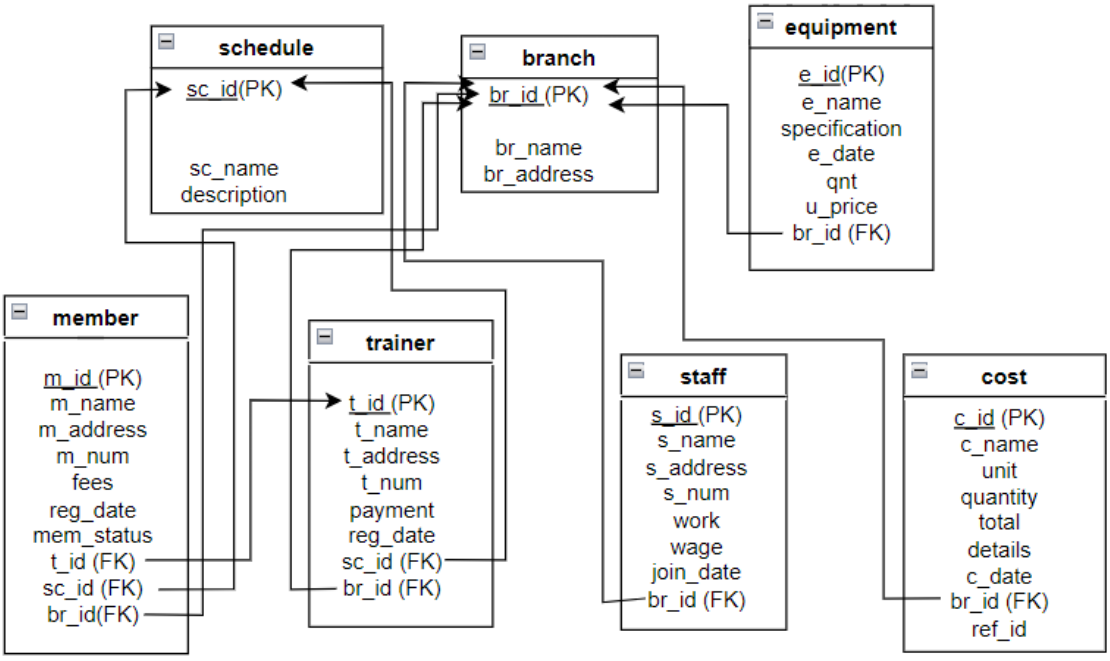

Figure 6.1: Schema Diagram

6.2 ER Diagram

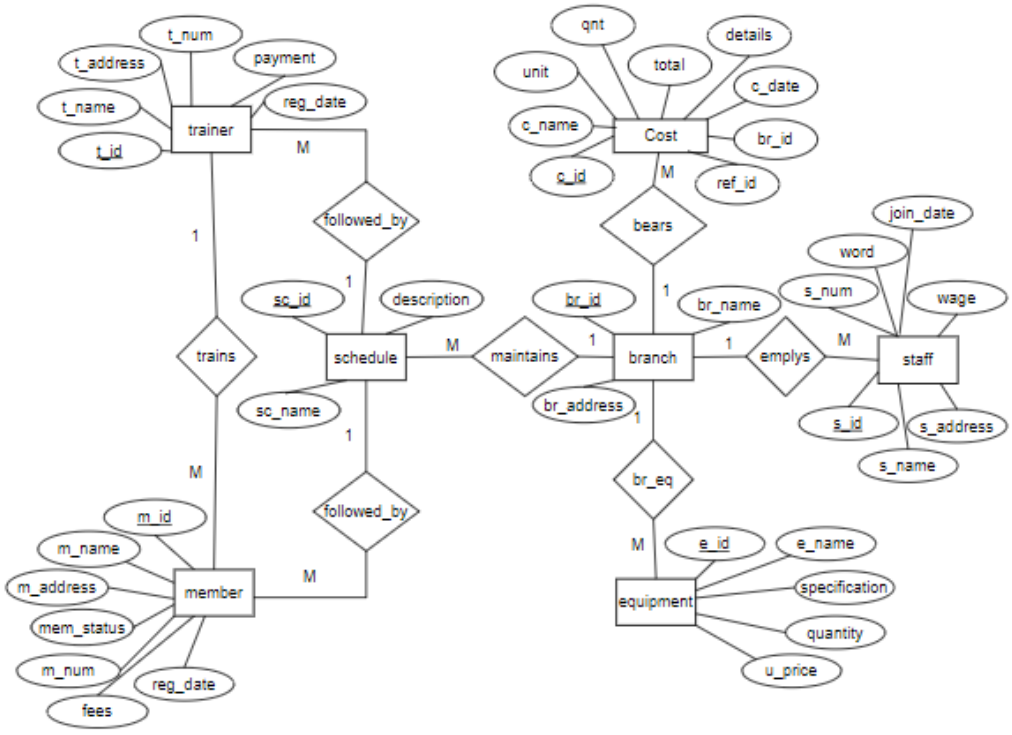

Figure 6.2: ER Diagram

Chapter 7

Future Work

Since our project has been developed in a very short time, it lacks many features and there are some mistakes too. But these imperfections and lack of features can be solved in the future. Some of them are,

- **User-friendly interface :** This project has a very simple and monochromatic GUI which may not be likeable to all. So, we can develop this project more attractive and more user-friendly.
- **Improved data access :** This application is now only access-able in a single desktop with a local database. But we want to make the database online and the application available to the users so that they can have access in selected files.
- **More database query :** We want to add more feature to this project which will contains some more database query to show the admin the exact data he wants and make changes how exactly he wants.

Chapter 8

Conclusion

When we first started the project, we knew very little about C#. Along with the progression of the course, we were introduced to a number of new concepts and aspects of the C# language during the project preparation. We were able to apply all of the theoretical C# concepts we learned in class to our application, making it more and more practical. We've attempted to make our project more compact and user-friendly over time. During this semester, we studied different C# programming ideas and are now in a position to successfully create an error-free application.

Reference

https://dotnet.microsoft.com/en-us/learn/csharp