Computer Shop Management System (Cashier System)

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Abstract

At present, the problems that ABC Computer Shop is facing are the lack of proper inventory management in their company, not generating bills, not calculating the cost of profit and income, not calculating the daily expenses, not having a clear management of the transactions with banks and computer accessory distributors, and problems like the placement of corporate employees. To solve these problems, I am creating a full-calculation cashier system that aims to solve all the technical problems of the company, increase the production efficiency of the company, and increase the performance of the company's employees. The main advantage of this is that the owner of the company can see all their profits, income, and expenses on one dashboard. Changes can be made if needed. In this system, a successful environment has been built where employees can work separately.

Acknowledgement

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Chapter 1: Introduction

Given the issues with the ABC company shop, this system allows the company owner to log in separately and view the company's expenses, income, profit, costs, bank transactions, information about products purchased, sales data, and stock levels. This offers the business owner valuable insights and can greatly improve business performance. Additionally, company employees can also log in separately and use the same interface to enter information about corporate purchases, expenses, customers, distributors, product brands, bank account details, models, and more. An attractive billing system is also implemented.

The background chapter provides detailed information about the project. The specifics of the diagrams prepared before development are found in the Specification and Design chapter. The Implementation chapter outlines the information required to build the system. The Results and Evaluation chapter showcases how the results are presented. The Future Work chapter explores the potential for further innovation based on this project. Finally, the Conclusions chapter discusses the project's overall success.

Chapter 2: Background

The main weakness of the business was the absence of a proper billing system. Additionally, managing income, costs, profits, expenses, bank payments, and inventory posed significant challenges for the business owner. This system was built by gathering essential information from the owner and implementing necessary modifications. The creation of this system has generated considerable excitement, as it allows both the owner and employees to work independently within the platform.

Module Overview:

1. Login System: Separate logins are provided for owners and employees, verified through username and password checks.
2. Registration System: Both owners and employees can register by entering and validating their details.
3. Password Recovery: Both owners and employees can reset their passwords through this functionality.
4. Owner Menu (Dashboard):
   - Purchases: Displays details of suppliers who provide goods to the company.
   - Purchase Bills: Records payments made to suppliers.
   - Inventory: Provides an overview of purchased goods and their quantities.
   - Banking: Details about the banks used by the company.
   - Sales: Presents information about customers to whom goods are sold.
   - Sales Bills: Generates bills for sold goods.
   - Expenses: Tracks day-to-day business expenses.
   - Employee Information: Displays employee and owner details (accessible only to the owner).
   - Income: Tracks all income generated by the business.
   - Cost: Compiles the total cost of running the business.
   - Profit: calculates and displays the company's profit.

   The owner has the ability to edit and delete information across all of these modules.

5. Cashier Menu (Dashboard):
   - Add Components: Allows adding details of purchased products, customers, and distributors.

- Add Purchase: Records information about goods purchased from outside the company, updating the inventory accordingly.
- Add Sale: records and generates bills for items sold to customers.
- Add Banking: Adds details about the banks used by the company.
- Add Expenses: Record additional business expenses incurred.

By effectively utilizing these features, the system alleviates several key business challenges.
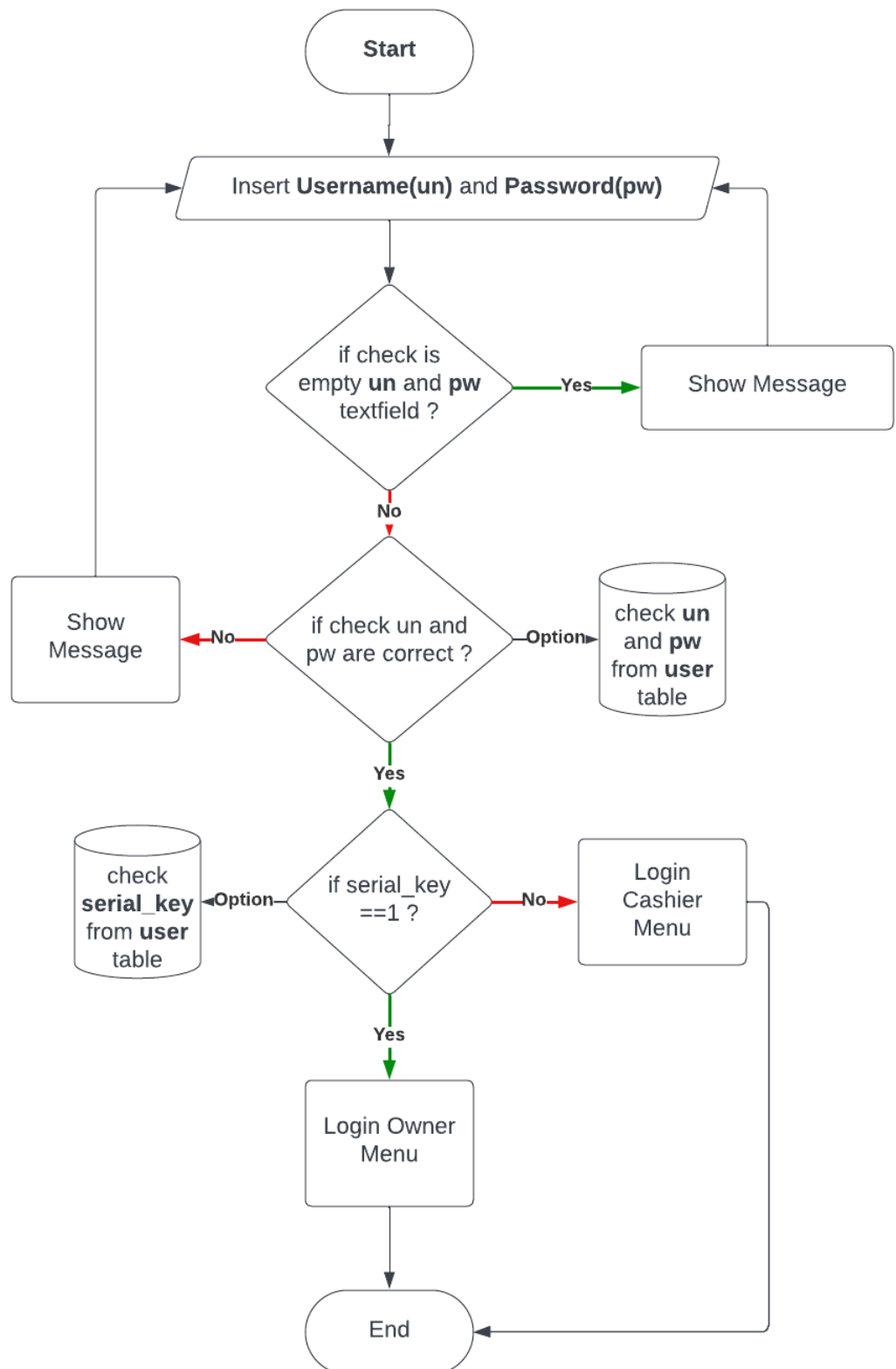
Chapter 3: Specification and Design

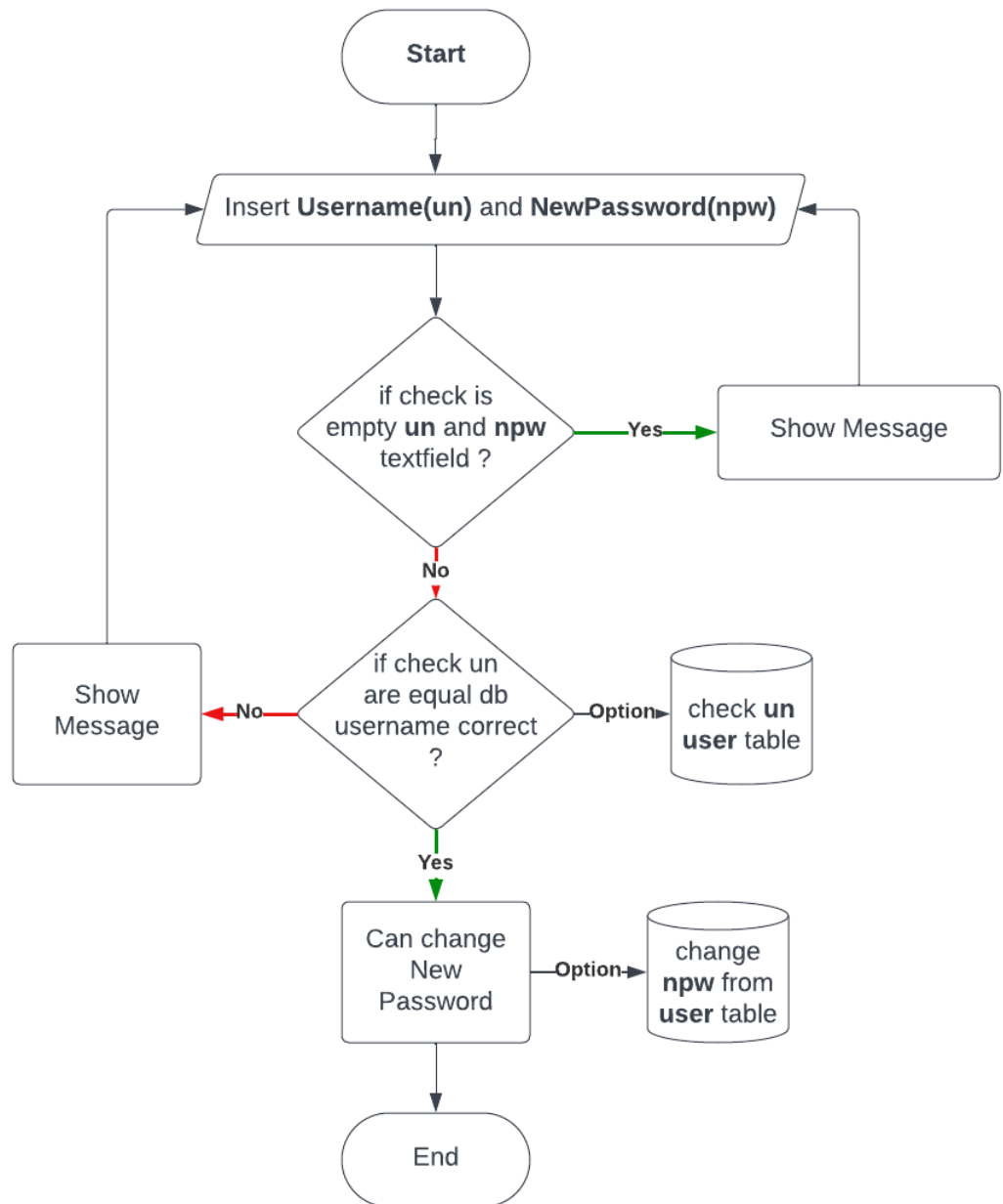Figure 1 - **ER Diagram – Class Diagram**
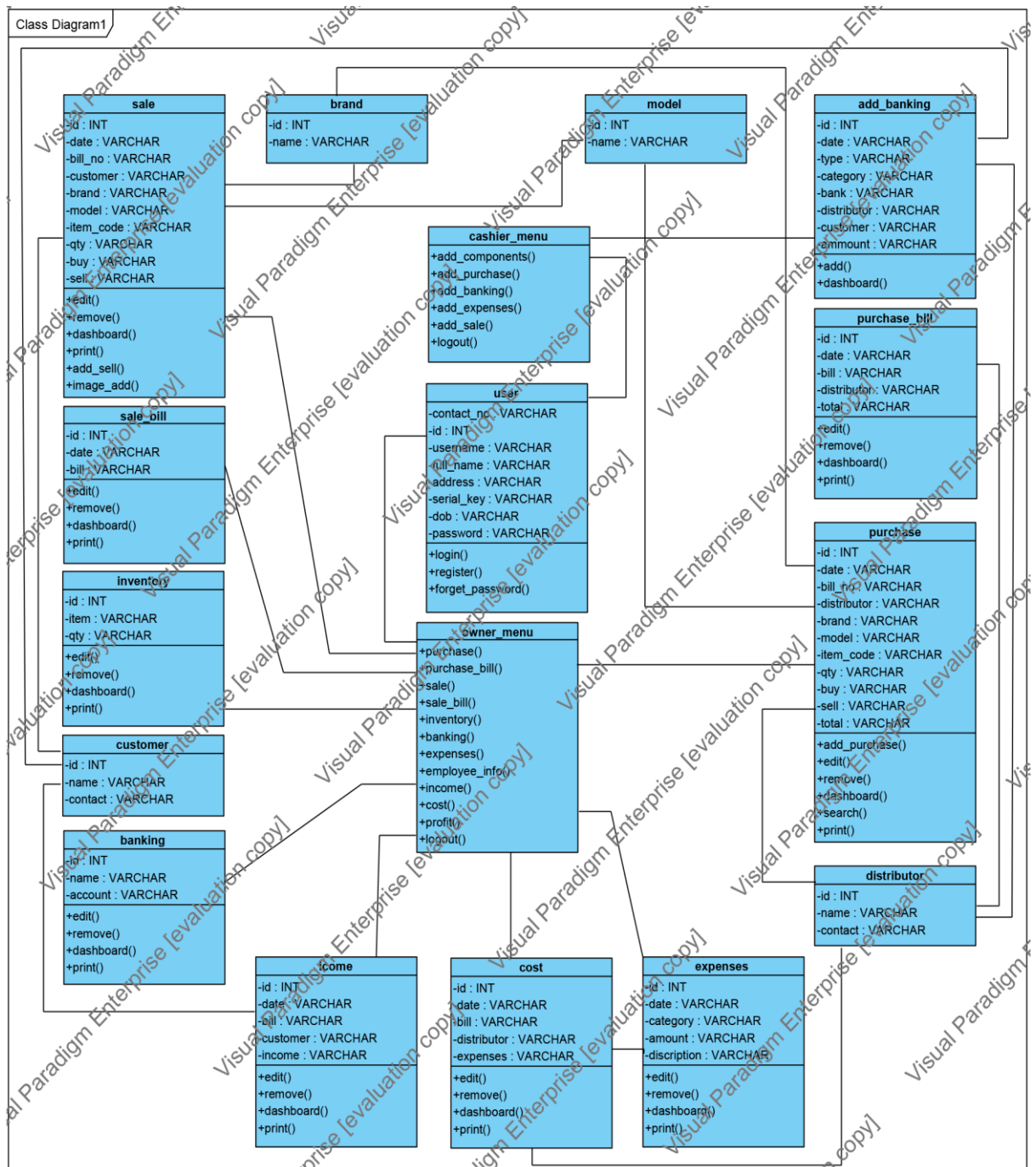
Algorithms – Flow charts

- **Login system -** Figure 2

- **Forget Password -** Figure 3

You can get a basic idea to enter the system by the above flowchart. You can easily check the username and password and change the password with the applied validation.

Chapter 4: Implementation

I used NetBeans IDE, which is an IDE (Integrated Development Environment), to create this system. Here, I had to use several different libraries.

- The following libraries were used to connect the database through the MySqlWorkbench server.

  Ex: MySQL JDBC Driver mysql-connector-java-5.1 23-bin.jar

  Mysql.connector.j.8.0.33.jar

- Because Java uses the Swing Palette, it uses a library that requires all swings to be used.

  Ex: Swingx-all-1.6.5.jar

- JDK (Java Development Kit) was used to run the Java programming language.

The above libraries are necessary to run this system successfully.

A separate Java class (dbcon.java) was used to code the database connection one time. Due to the use of this, tasks such as insert, update, and delete were done with the database by calling the relevant dbcon class easily with other interfaces. Due to this method, there is no need to type a database connection code with a MySQL query. The following database connection code can be seen simply.

```java
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;
public class dbcon {
  public static Connection c;
  static{
    try {
      Class.forName("com.mysql.cj.jdbc.Driver");
    c=
      DriverManager.getConnection("jdbc:mysql://localhost:3306/digimax_mobile_d
      atabase?useSSL=false","root","00000");
    } catch (Exception e) {
      e.printStackTrace();
    }
}
  public static void IUD(String Query) throws Exception{ // I - insert / U - update / D
  - delete
    Statement s = c.createStatement();
    s.executeUpdate(Query);
 }
  public static ResultSet SEARCH(String query) throws Exception{
    Statement s = c.createStatement();
    ResultSet rs = s.executeQuery(query);
    return rs;
}
  static void IDU(String string) {
    throw new UnsupportedOperationException("Not supported yet."); //To change
    body of generated methods, choose Tools | Templates.
  }
}}
```

Chapter 5: Results and Evaluation

It can be concluded that this system works successfully to solve organizational problems in the right way. Under the logging system, the corporate owner and employee are properly logged into the system, and new employees and owners can be registered under the register. Due to the validation in the register system, the details can be obtained correctly. Here, the system runs in such a way that the company's income, cost, and profit are processed, so the owner of the company gets a big contribution. Due to the correct calculation, there is no need to look again. Transactions with banks can be managed here, so transactions can be done very easily. Here, after the goods are sold, the quantity is reduced from the inventory, thus supporting our day-to-day transactions and calculations. Under Add Sale, a big process is done, and a bill can be generated and total values can be obtained.

Chapter 6: Future Work

If you can make the background design more creative in this system, it will become an attractive system. There are suggestions to add more steps to the various steps here. There is a proposal to use a new technology like the Bar Cord Reader in this system. It is possible to get the details of the goods automatically through the Bar Code. It is more effective to set up the system so that the images of the registrants can be loaded correctly.

Chapter 7: Conclusions

It was very good to finally be able to solve the coding problems that occurred when this system was created. For this reason, it is important that the system runs properly. It is very beneficial for the employees to do their work without any inconvenience with this system. When dealing with the database, the data transfer was very successful because the tables were created in the right way.

Chapter 8: References

YouTube

AI tool - Brad

Website: https://www.geeksforgeeks.org/java/?ref=shm

Diagrams design:

Flowcharts - https://lucid.app/documents#/documents?folder_id=recent

Class Diagrams – Visual Paradigm Software