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A Mini Project Report
on

Small Scale Home Ware Business Management System

Submitted in partial fulfillment of the requirements as a part of the DBMS Laboratory for the award of degree of

Bachelor of Engineering
in
Information Science and Engineering

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CERTIFICATE

This is to certify that the Mini Project report entitled ***SMALL SCALE HOMEWARE BUSINESS MANAGEMENT SYSTEM*** has been successfully completed by **N.P.SAMARTH, 1RN16IS055** and **GOWTHAM V. BHAT, 1RN16IS034**, presently V semester students of **RNS Institute of Technology** in partial fulfillment of the requirements as a part of the DBMS Laboratory for the award of the degree ***Bachelor of Engineering in Information Science and Engineering*** under **Visvesvaraya Technological University, Belagavi** during academic year 2018 – 2019. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The Mini Project report has been approved as it satisfies the academic requirements as a part of DBMS Laboratory for the said degree.

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ABSTRACT

The Mini Project ‘Small Scale Home Ware Management System’ provides an efficient and user-friendly program for the management of a small-scale homeware business.
The program is a stand-alone application and is designed for the use of the Manager and Salesmen of the shop. The database system contains information about the Products, Departments, Customers, Salesmen, and Invoice etc.

The Salesman can add, manipulate, delete data, and can generate list of all the products in the database. The Small Scale Home Ware Management is developed to automate various processes by facilitating the salesman of the product details so the users can keep track of the stock and take appropriate action.

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ABBREVIATIONS

DBMS	-	Database Management System
RDBMS	-	Relational Database Management System
ER	-	Entity Relationship
SQL	-	Structured Query Language
MySQL	-	My Structured Query Language
XAMPP	-	Apache + Maria DB + PHP + Perl
GUI	-	Graphical User Interface

Chapter 1

INTRODUCTION

1.1 Background

Purpose

The project is named as Small Scale Homeware Business Management System which is an application used for administrative purpose. The main aim of this project is to keep track of the existing stock. The main purpose of the project is to eliminate errors and the time consumed in manually keeping track of the stock, which also requires more man power to maintain the data.

This system helps Small Scale Shopkeepers to eliminate redundant entries regarding the products and helps modifying, deleting, inserting data and also browsing the existing data in a more quick and easier way. It helps the process of digitalizing the management and also to reduce paper work.

Scope

This project aims at achieving computerized automation of all the functionalities related to stock study and users or admin to provide an easier user-friendly graphical interface.
The various computerized processes include

- Initially the user needs to register with the system.
- Then the user can login using the username and password.
- Upon logging in, the user will be led to the Homepage, which contains various options.
- In the Product details page the user can perform various operations such as adding a new product, browsing through the product details, manipulating the product details.
- Generating a list of all products in the database along with their details.

1.2 Introduction to Small Scale Business Management System

In this emerging world of computers, almost all-manual systems are switched to automated and computerized system. Therefore, we are developing the software for "Small Scale Business Management System" to model the present system and to remove the drawbacks of the present system. This project explores how computer technology can be used to solve the problem of admins difficulty to make a study of the stock manually.

This being a big step in terms of improvement in the stock management system can be widely applied across the country, which presents a lot of benefits to the users. The use of computer has solved many problems, which were faced during manual calculation and manual entries. Once the data are fed, it can perform accurate functions. Therefore, to reduce the complexity and efficiency a versatile application for stock management system has been developed.

The customers are required to register to get access to the database and query result retrieval. Upon registration, each user gets an account that is essentially the 'view level' for the user. The account contains comprehensive information of the user entered during registration and permits the user or admin to manipulate according to the products availability, enquire about product details, its price, taxation, generation of list of products, update the existing product details.

Chapter 2

Entity- Relation Diagram

An Entity Relationship Diagram is a graphical representation of an information system that depicts the relationships among different attributes.

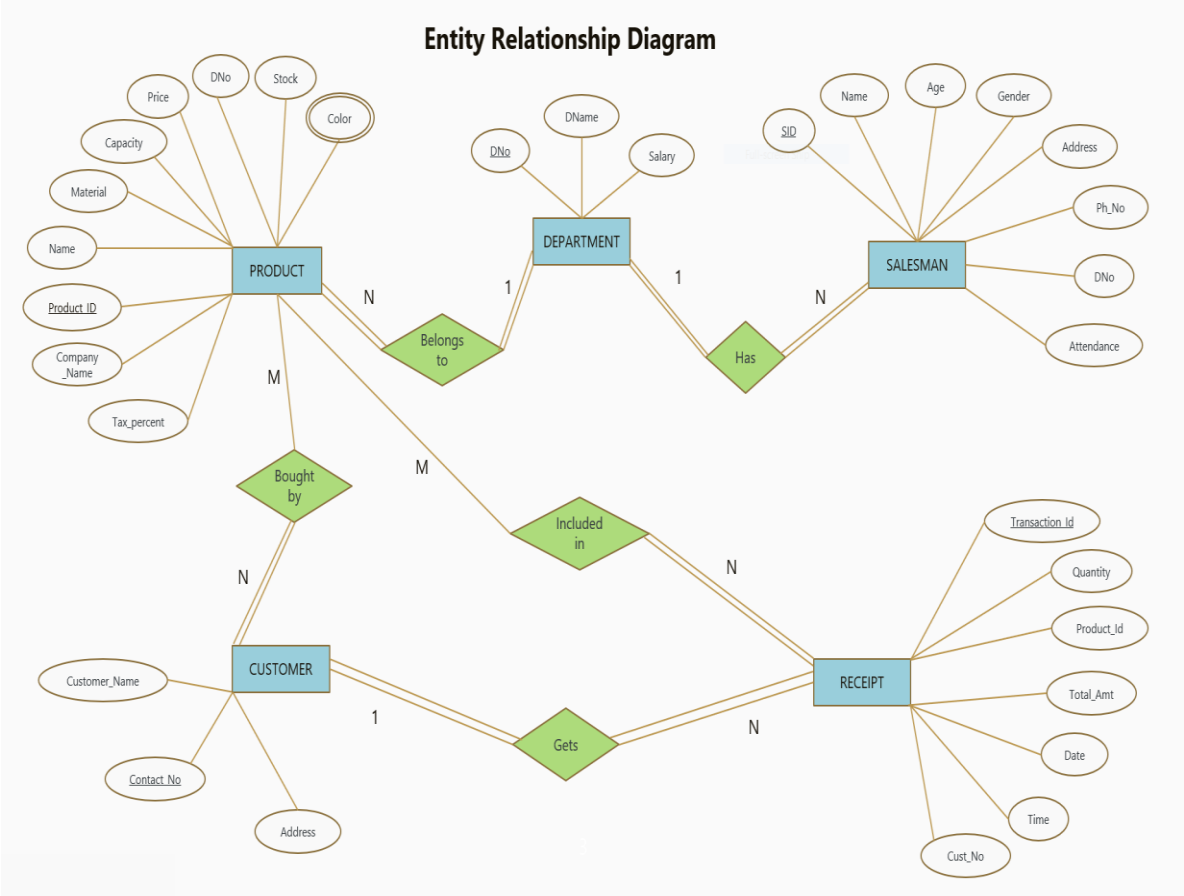


Figure 2.1 E-R Diagram

The Figure 2.1 shows the Entity Relationship diagram which has 5 relations namely, Product, Department, Salesman, Customer, Receipt. The relation Product has a multivalued attribute 'Color'.

N products belong to 1 department, and each department has N salesman, M products are bought by N customers, and each customer can get N receipts.

Chapter 3

RELATIONAL SCHEMA DIAGRAM

A database schema is the skeleton structure that represents the logical view of the entire database. It defines it's entities and the relationship among them.

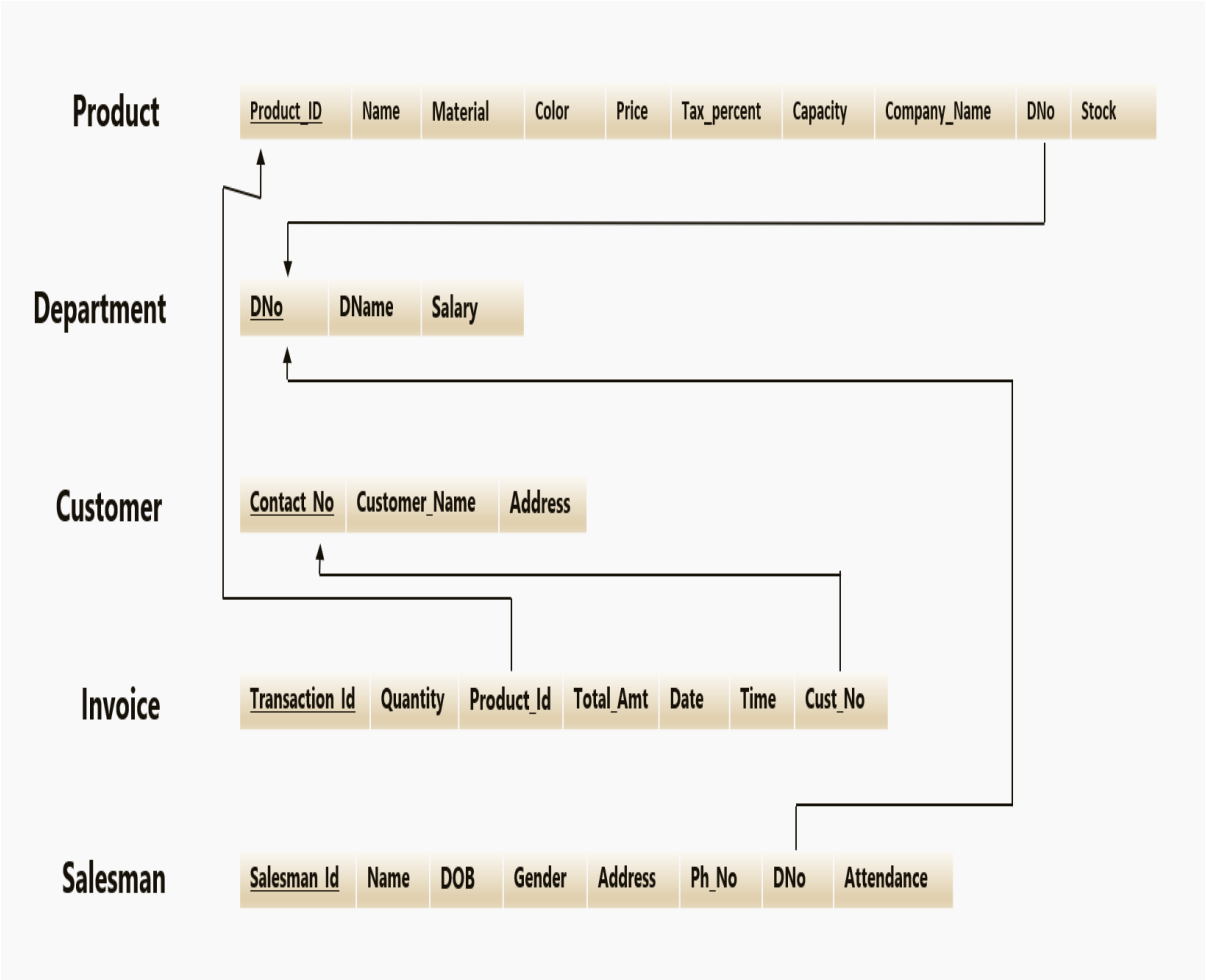


Figure 3.1 Schema Diagram

The database schema in the Figure 3.1 depicts the dependencies among different attributes, namely the Product_ID of Invoice references the Product_Id of the Product relation, the Cust_No of Invoice references the Contact_No of the Customer relation, the DNo of Salesman references the DNo of the Department relation, the DNo of Product references the DNo of the Department relation. The underlined attributes are the primary key of their respective relation.

Chapter 4

SYSTEM DESIGN

4.1 Tables

The tables considered in the back-end database of this project are

#	Name	Type	Collation	Attributes	Null	Default
1	name	varchar(30)	latin1_swedish_ci		No	*None*
2	username	varchar(20)	latin1_swedish_ci		No	*None*
3	password	varchar(20)	latin1_swedish_ci		No	*None*
4	dob	date			No	*None*

Figure 4.1 User Table

The Figure 4.1 shows the table which stores the details of users provided at the time of registration. Here the data types used are varchar, date.

	#	Name	Type	Collation	Attributes	Null	Default
☐	1	product_id	varchar(8)	latin1_swedish_ci		No	*None*
☐	2	name	varchar(30)	latin1_swedish_ci		No	*None*
☐	3	company_name	varchar(25)	latin1_swedish_ci		No	*None*
☐	4	material	varchar(20)	latin1_swedish_ci		No	*None*
☐	5	color	varchar(15)	latin1_swedish_ci		No	*None*
☐	6	capacity	varchar(5)	latin1_swedish_ci		No	*None*
☐	7	dno	varchar(3)	latin1_swedish_ci		No	*None*
☐	8	stock	varchar(5)	latin1_swedish_ci		No	*None*
☐	9	price	varchar(6)	latin1_swedish_ci		No	*None*
☐	10	gst	varchar(5)	latin1_swedish_ci		No	*None*

Figure 4.2 Product Table

The Figure 4.2 shows the table includes the different attributes of each product which are used for the retrieval of product details, manipulating product details, browsing products and generating the list of products. The product_id is considered as the primary key. The data types included in this table are varchar, integer.

Chapter 5

IMPLEMENTATION

5.1 Hardware requirements

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. A hardware requirement list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. An HCL list tested, compatible, and sometimes incompatible hardware devices for a particular operating system or application.

Processing power

The power of the central processing unit (CPU) is a fundamental system requirement for any software. Most software running on x86 architecture define processing power as the model and the clock speed of the CPU. Many other features of a CPU that influence its speed and power, like bus speed, cache, and MIPS are often ignored. Intel Pentium CPUs have enjoyed a considerable degree of popularity, and are often mentioned in this category.

Memory

All software, when run, resides in the random access memory (RAM) of a computer. Memory requirements are defined after considering demands of the application, operating system, supporting software and files, and other running processes.

MINIMUM HARDWARE REQUIREMENT		
	Processor	Pentium Processor @ 1-GHz or higher
	RAM	512MB or Higher
	Disk Space	60GB or higher
	Input Devices	Mouse and Keyboard or Touch Screen
	Output Devices	LCD monitors or Surface Screen, No printer
	Graphics Hardware	VGA

Figure 5.1 Hardware Requirements

5.2 Software requirements

These are the software resource requirements and prerequisites that need to be installed on a computer to provide optimal functioning of an application. These requirements or prerequisites are generally not included in the software installation package and need to be installed separately before the project can be run.

Front End

The components used in Front End are, The NetBeans Platform is a framework for simplifying the development of Java Swing desktop applications. The NetBeans IDE bundle for Java SE contains what is needed to start developing NetBeans plugins and NetBeans Platform based applications; no additional SDK is required.

Applications can install modules dynamically. Any application can include the Update Center module to allow users of the application to download digitally signed upgrades and new features directly into the running application. Reinstalling an upgrade or a new release does not force users to download the entire application again.

The platform offers reusable services common to desktop applications, allowing developers to focus on the logic specific to their application. Among the features of the platform are,

- User interface management (e.g. menus and toolbars)
- User settings management
- Storage management (saving and loading any kind of data)
- Window management
- Wizard framework (supports step-by-step dialogs)
- NetBeans Visual Library
- Integrated development tools

Back End

MySQL

Is an open-source relational database management system (RDBMS).

Is a free and open source tool written in PHP intended to handle the administration of MySQL with the use of a web browser. MySQL is written in C and C++. It can perform various tasks such as creating, modifying or deleting databases, tables, fields or rows; executing SQL statements; or managing users and permissions. The software, which is available in 78 languages, is maintained by the phpMyAdmin Project. MySQL is a central component of the XAMP open-source web application software stack (and other "AMP" stacks). XAMPP is an acronym for " XAMPP Apache + Maria DB + PHP + Perl".

5.3 Snapshots

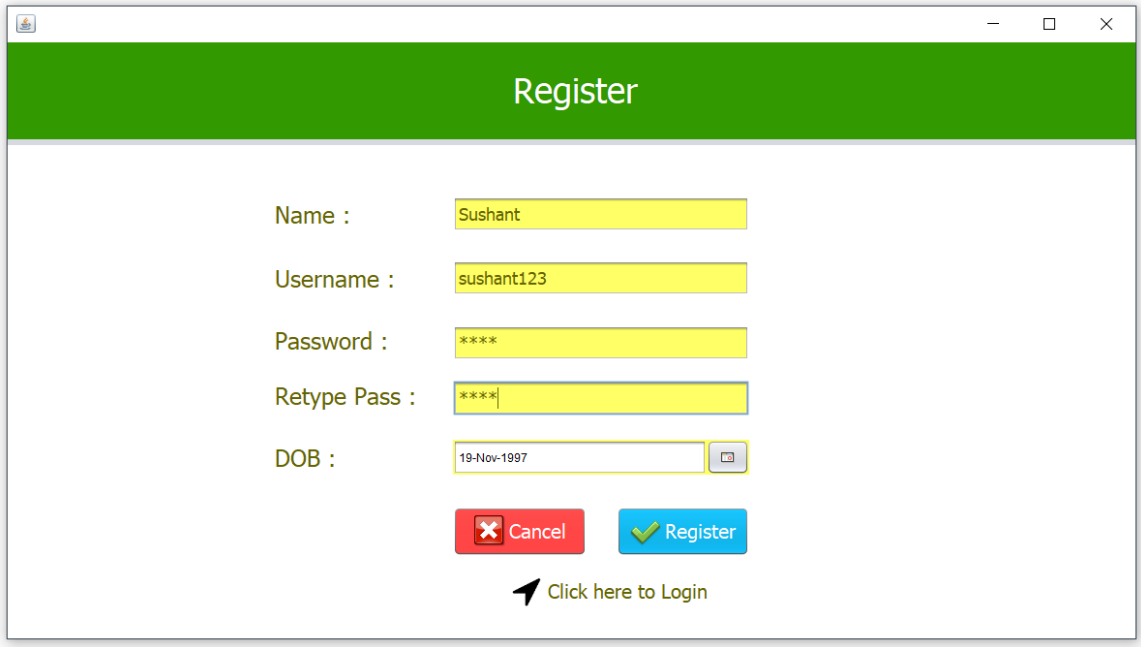


Figure 6.1 Registration Page

The Figure 6.1 is a Registration page where the user or the admin has to enter the details Name, User Name, Password, Retype Password and Date of Birth can be chosen from the drop-down calendar. On clicking the register button, the data gets saved successfully and then on clicking the label, click here to login it goes to the login page.

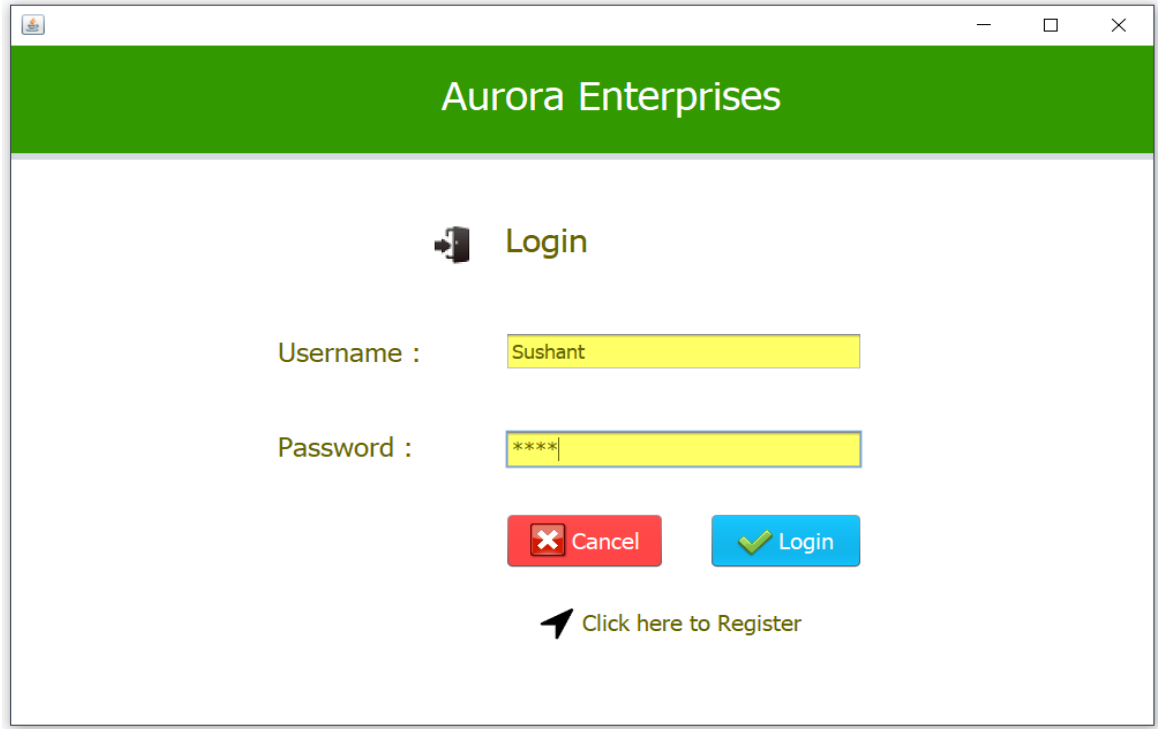


Figure 6.2 Login Page

The Figure 6.2 is the Login page which keeps the data secure, on entering the correct username and password the registered admin or the user can login successfully. Both the user name and password are unique that is two people cannot have the same user name and password

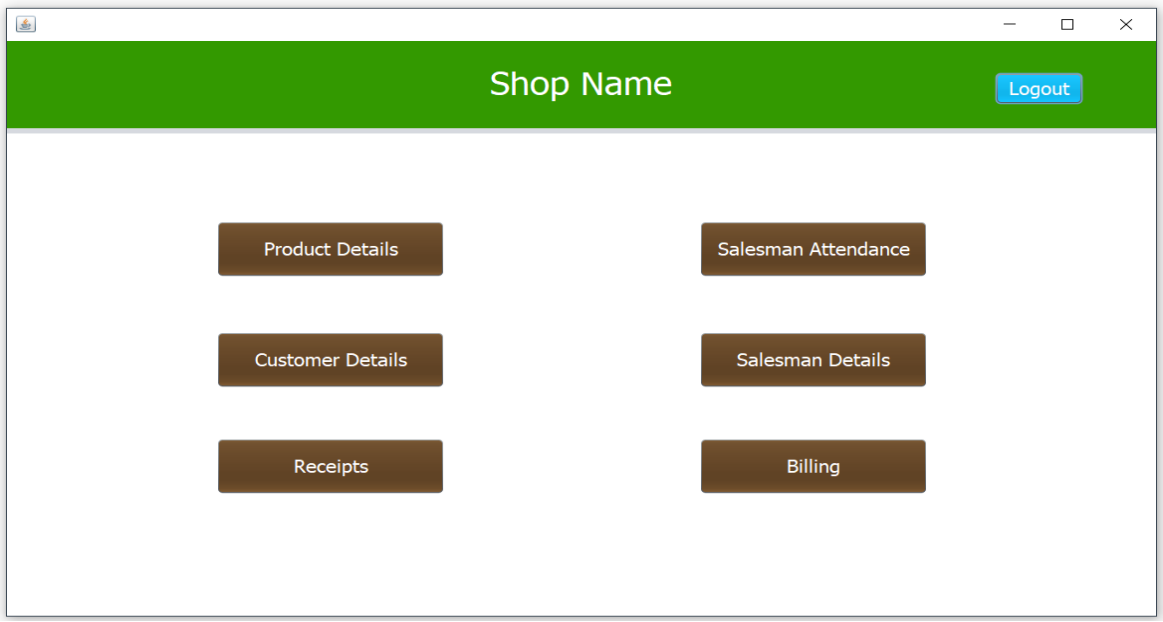


Figure 6.3 Home Page

The Figure 6.3 shows the home page where the admin can click product details button which leads to product details page where we can browse, manipulate, add a new product, remove the existing product and also view or generate a list of products.

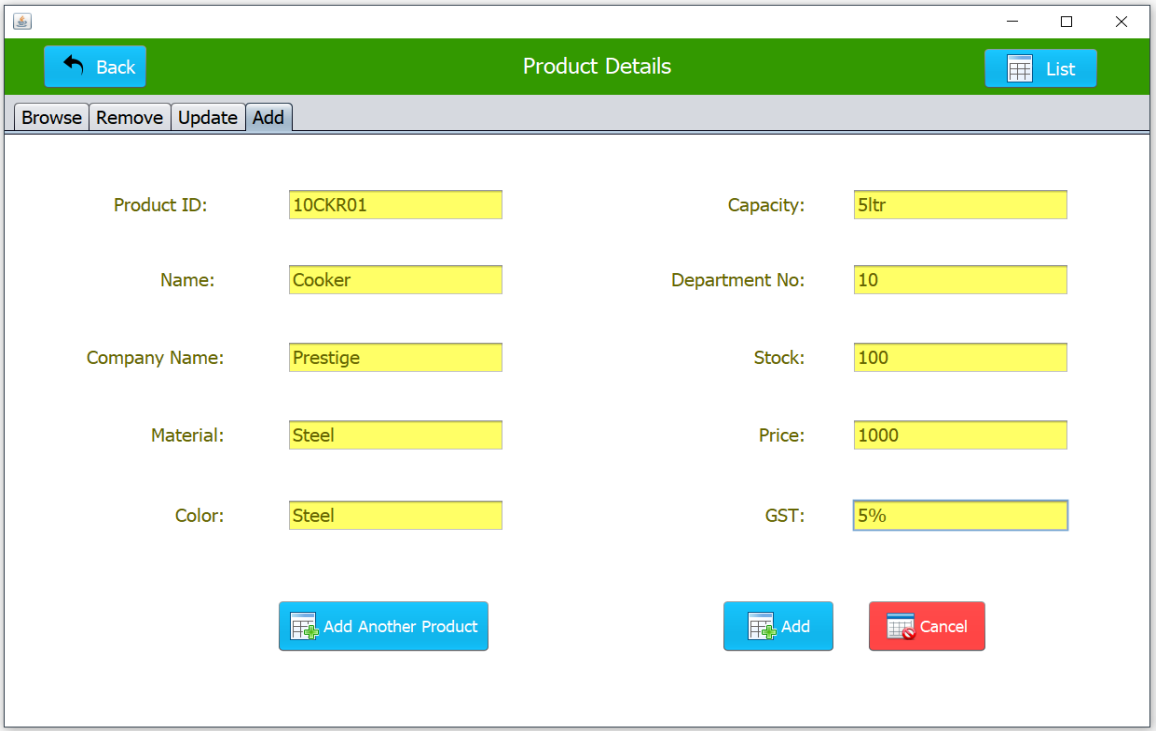


Figure 6.4 Product Add Tab

The Figure 6.4 shows the Product Add tab, where the user or admin can enter the product id which is unique where the first two numbers indicate the department number and next three characters represent the product name followed by a serial number given to the product, no two products can have the same product id(eg.10PAN01). Then on clicking the add button will add the product. We can add another product by clicking Add Another Product Button. The back button leads to the home page.

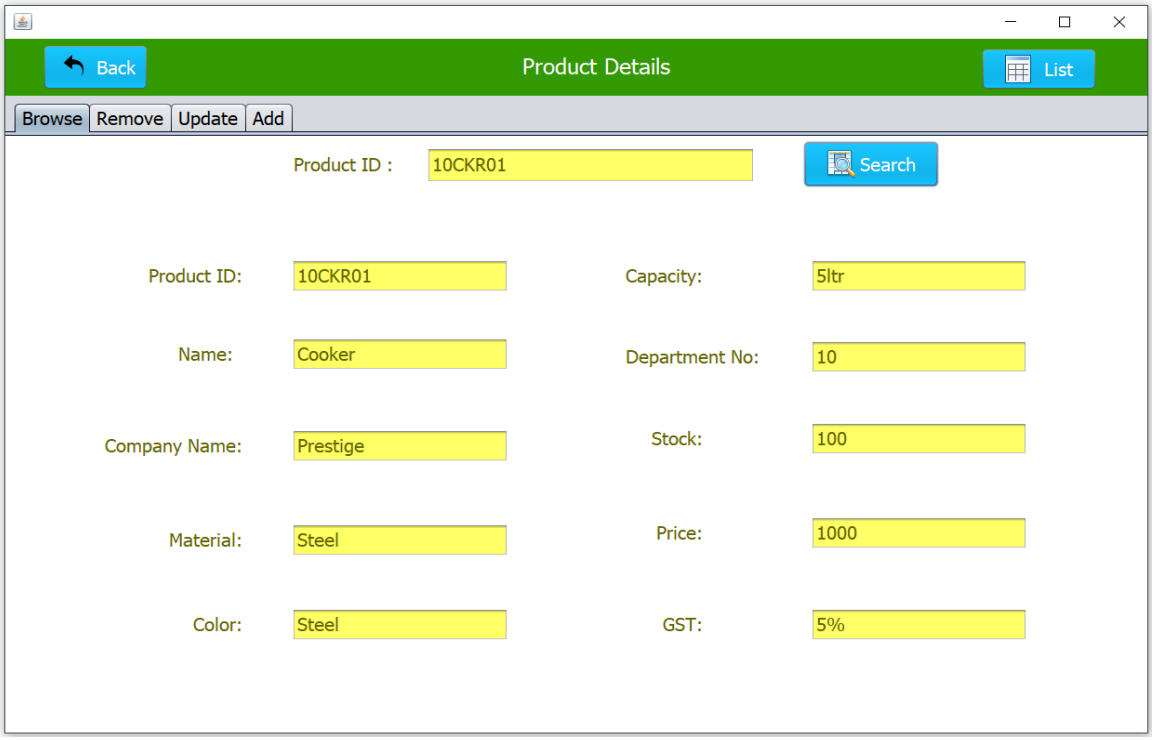


Figure 6.5 Product Browse Tab

The Figure 6.5 refers to the browsing where on entering the unique product id in the search bar it retrieves the entire product details from the database and is displayed.

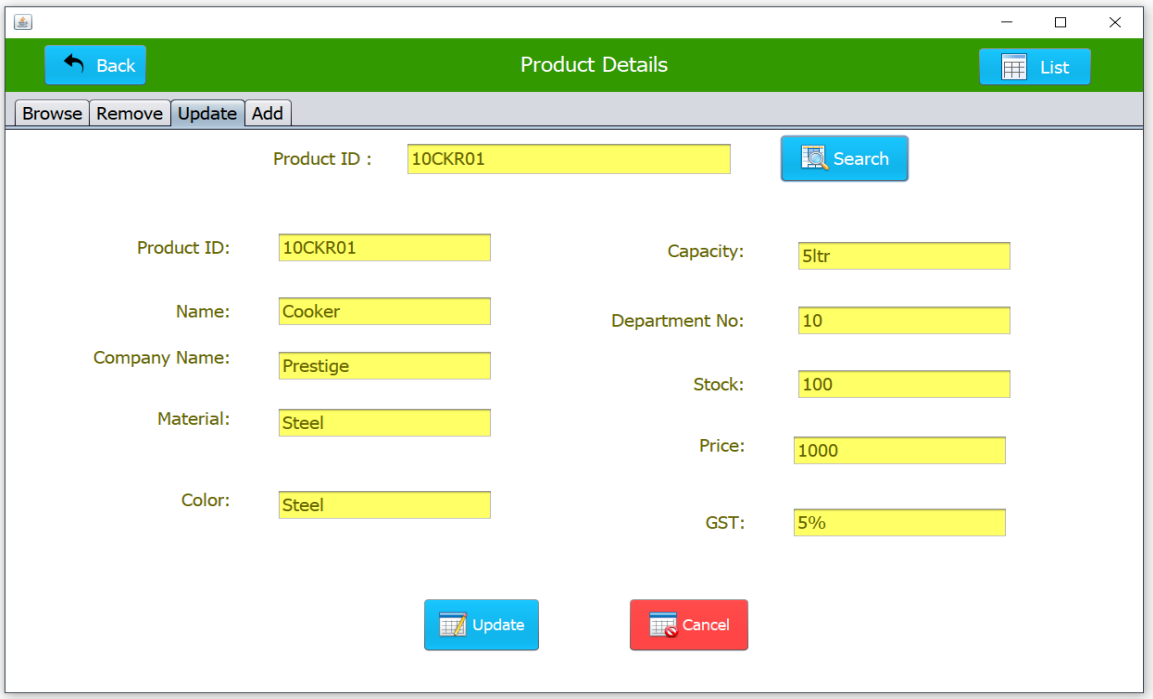


Figure 6.6 Product Update Tab

The Figure 6.6 is of the update tab where the product details are retrieved on entering the product id, where in you can manipulate the existing data and then on clicking the update button the data gets updated successfully.

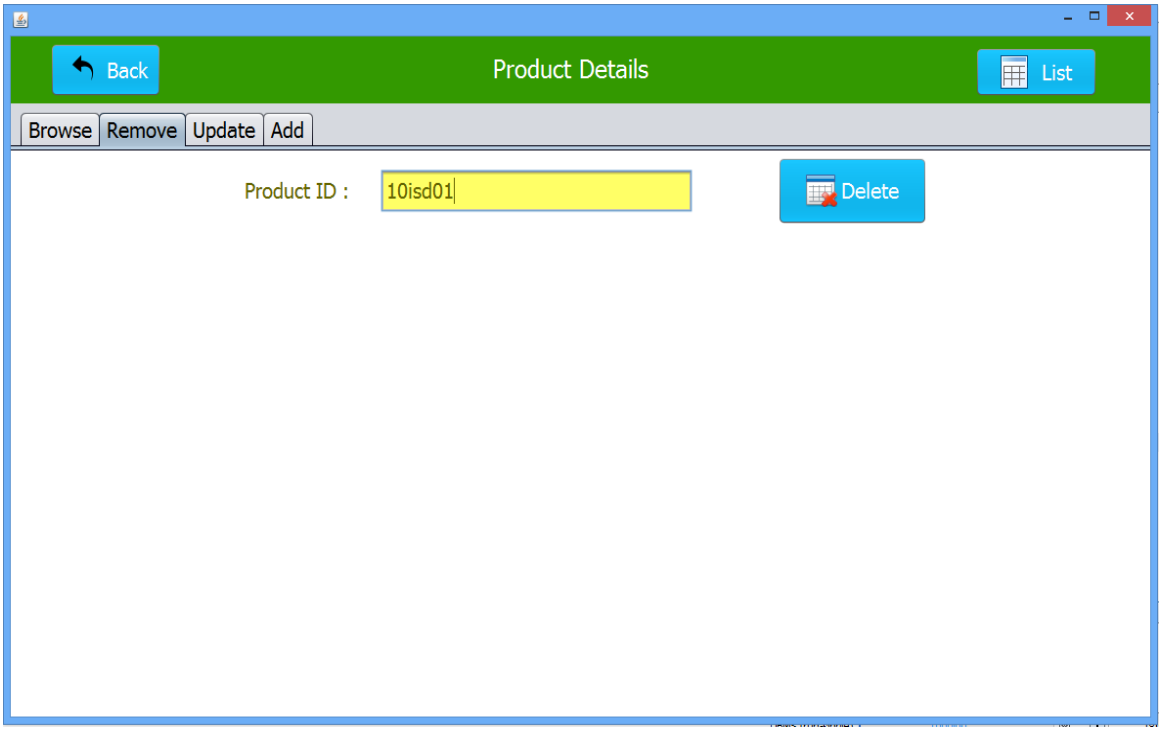
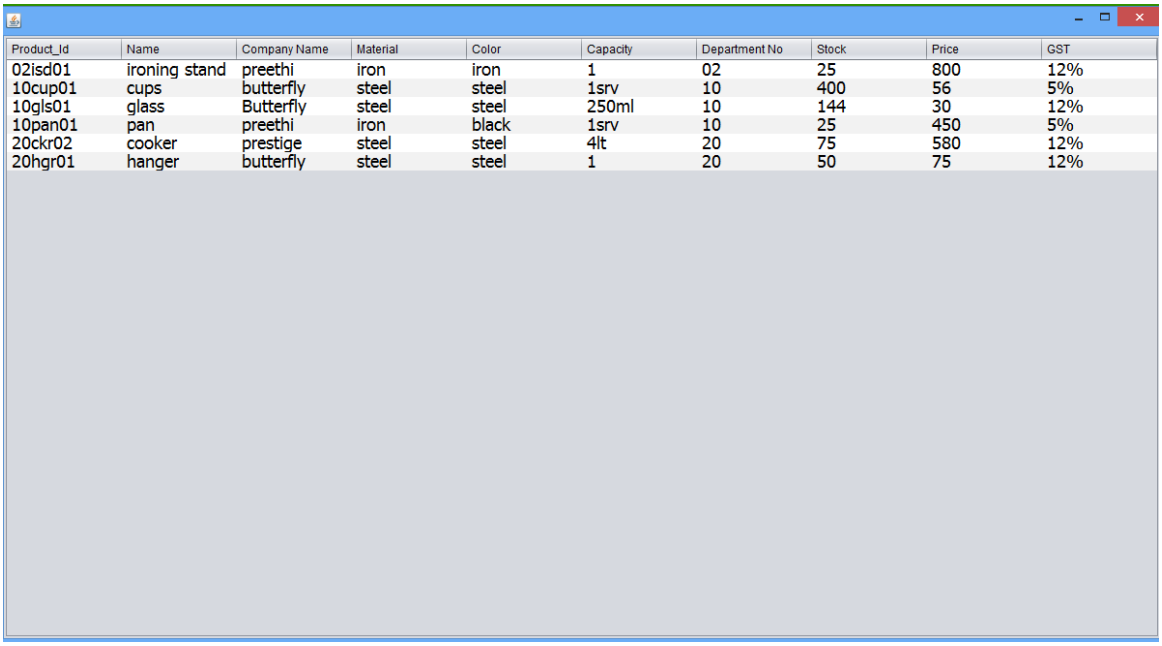


Figure 6.7 Product Remove Tab

The Figure 6.7 shows the Remove tab which is used to delete or remove the details of the existing product, there is a search bar where the product id is to be entered if the product id is not found the it shows the pop up message telling that NO DATA FOR THIS ID else the product gets deleted successfully by showing the message 'Product Deleted Successfully'.



Product_Id	Name	Company Name	Material	Color	Capacity	Department No	Stock	Price	GST
02isd01	ironing stand	preethi	iron	iron	1	02	25	800	12%
10cup01	cups	butterfly	steel	steel	1srv	10	400	56	5%
10gls01	glass	Butterfly	steel	steel	250ml	10	144	30	12%
10pan01	pan	preethi	iron	black	1srv	10	25	450	5%
20ckr02	cooker	prestige	steel	steel	4lt	20	75	580	12%
20hgr01	hanger	butterfly	steel	steel	1	20	50	75	12%

Figure 6.8 Product List Page

The Figure 6.8 shows the generated list on clicking the list button in product details page. The list contains all the details of products listed.

5.4 Code Implementation

Below is the code, which is used to connect the front-end Swings to the back-end MySQL database,

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;

public class MyConnection {
   public static Connection getConnection() {

      Connection conn = null;
      try {
         Class.forName("com.mysql.jdbc.Driver");
         conn = DriverManager.getConnection("jdbc:mysql://localhost/shop", "root", "");
      }
      catch(ClassNotFoundException | SQLException ex){
         System.out.println(ex.getMessage());
      }
      return conn;
   }
}
```

The parameter inside the method Class.forName() denotes the driver used to connect the MySQL database to the Swing component.

We pass the URL, Username and Password inside the method DriverManager.getConnection() to login to the database and establish a successful connection. If any exception arises it is caught by the Catch Block.

The above defined method returns the connection to the invoking method.

Chapter 7

APPLICATIONS

This project can be used by the small scale shop keepers to maintain and keep track of the stock, which in turn reduces the paper work and time consumed. The project helps to generate the list of existing products. The user can insert, modify, delete the existing product details. This project has a login page which secures the data with a password.

This application, after some development can be used in Super Markets and Marts which includes a wide category of products, and manages a lot more traffic and data. If an interface for the customer is added it can be developed as an E-Commerce website.

Chapter 8

CONCLUSION & FUTURE ENHANCEMENT

The Small Scale Homeware Business Management System enables the User to manage the data related to business. We have used MySQL to create and maintain the database and the code is written using java using Swings which is a GUI widget toolkit for java. Swings helped in providing a graphical user interface for Java. We have used JDBC driver and connector to access the database.

The project has covered important requirements for the small scale homeware management system. Further changes and requirements can be done easily as the code is much modularized and easy to understand. Changing the existing code or adding new modules can append improvements.

The Small Scale Homeware Management could further be developed having a login page for the Admin which allow to manage the users and their user accessibility. The project can be further developed to include features like Generating Bills, maintain Salesman attendance, calculate the financial gain of the month or the year, avail offers to customers based on their previous visits and purchases, to maintain the receipts generated, include reminders to refill the product stock. A customer interface can be developed to make the project an E-Commerce application.

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