PES University, Bengaluru

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UE19CS353 – Object Oriented Analysis and Design with Java

Theory ISA (Mini Project)

Report on

Shop Management System

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6th Semester Section F

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1. Project Description

Creating a shop management system to help with the efficient functioning of the shop it's deployed in. It provides necessary features to help various entities. There are 3 profiles in the application: customer, shop inventory, and shopkeeper.

Customers and shopkeepers are for smoothing transactions.

Shop inventory profile would help keep track of stocks and customer demands. The inventory tracking can be used to maximize profits by identifying the most and least sold products.

The customer profile is for each individual customer to add things to the cart. Storage of cart details. Gives unique identification for each customer, and quick payment options.

Shopkeeper profile contains shop id to identify stores uniquely, transaction IDs. Details about the items sold on a particular day on his shift and details about the items sold at his store. Keeping track of transaction logs by date.

LINK TO GITHUB: https://github.com/shreyasganesh01/ShopManagement.git

2. Analysis and Design Models

Use Case Diagrams:

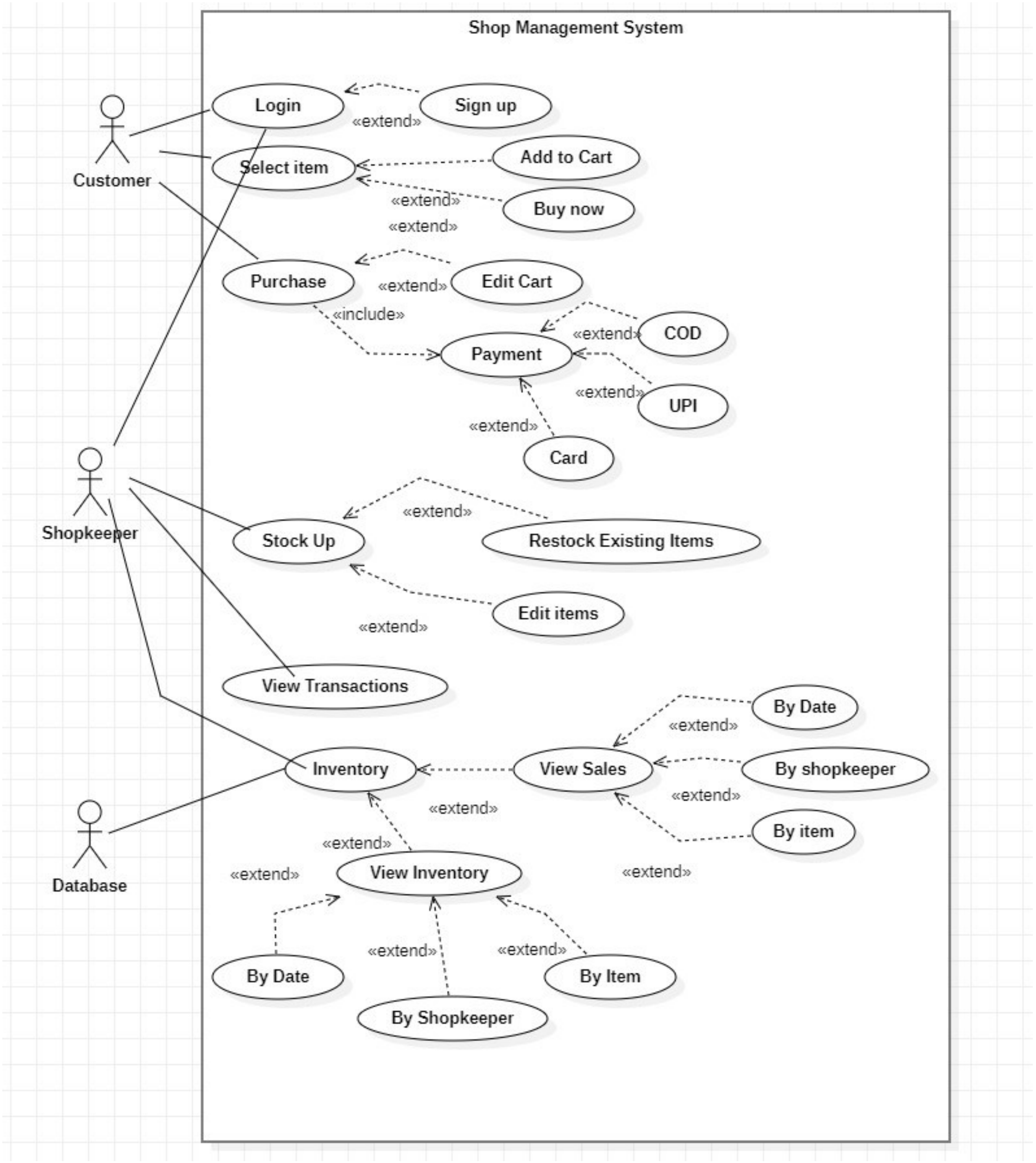

Shop Management System
Login
Sign up
«extend»
Customer
Select item
Add to Cart
Buy now
«extend»
«extend»
Purchase
Edit Cart
«extend»
«include»
Payment
COD
«extend»
UPI
«extend»
«extend»
Card
Shopkeeper
Stock Up
«extend»
Restock Existing Items
Edit items
«extend»
View Transactions
By Date
«extend»
Inventory
View Sales
By shopkeeper
«extend»
By item
«extend»
«extend»
Database
«extend»
View Inventory
«extend»
By Date
«extend»
«extend»
By Item
By Shopkeeper

Fig 2.1

Class Diagrams:

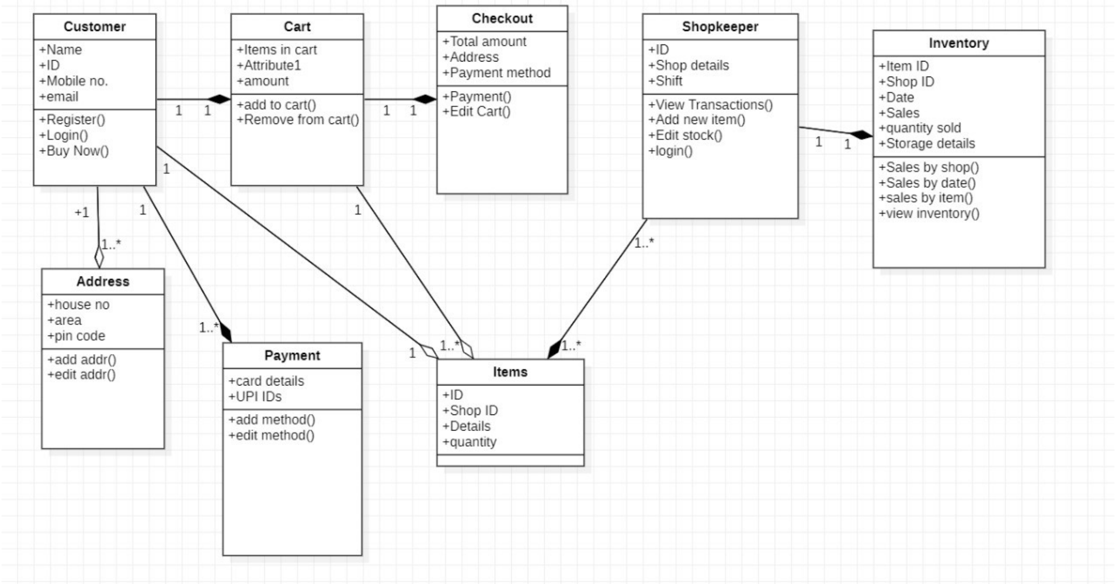


fig2.2

Activity Diagram:

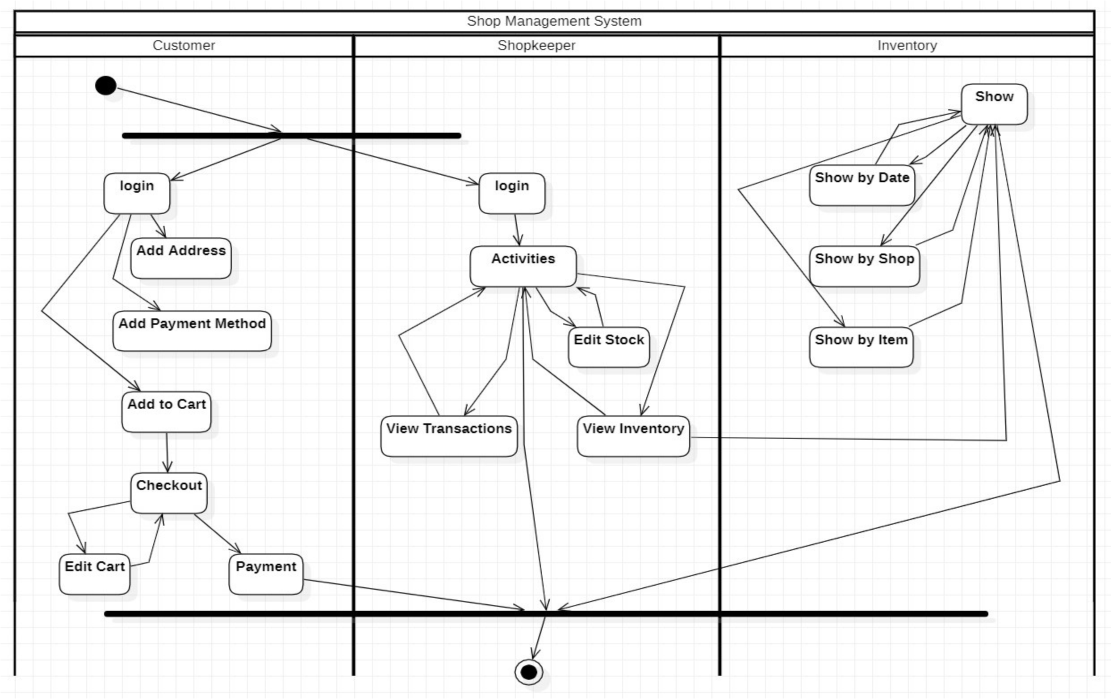


Fig 2.3

State Diagrams:

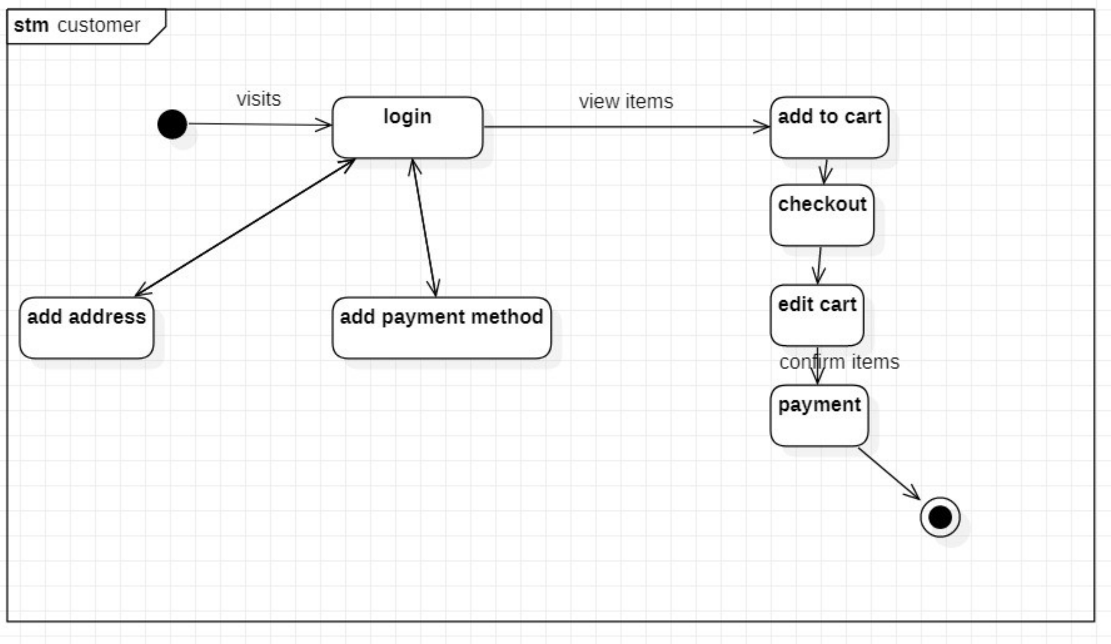


Fig 2.4.1

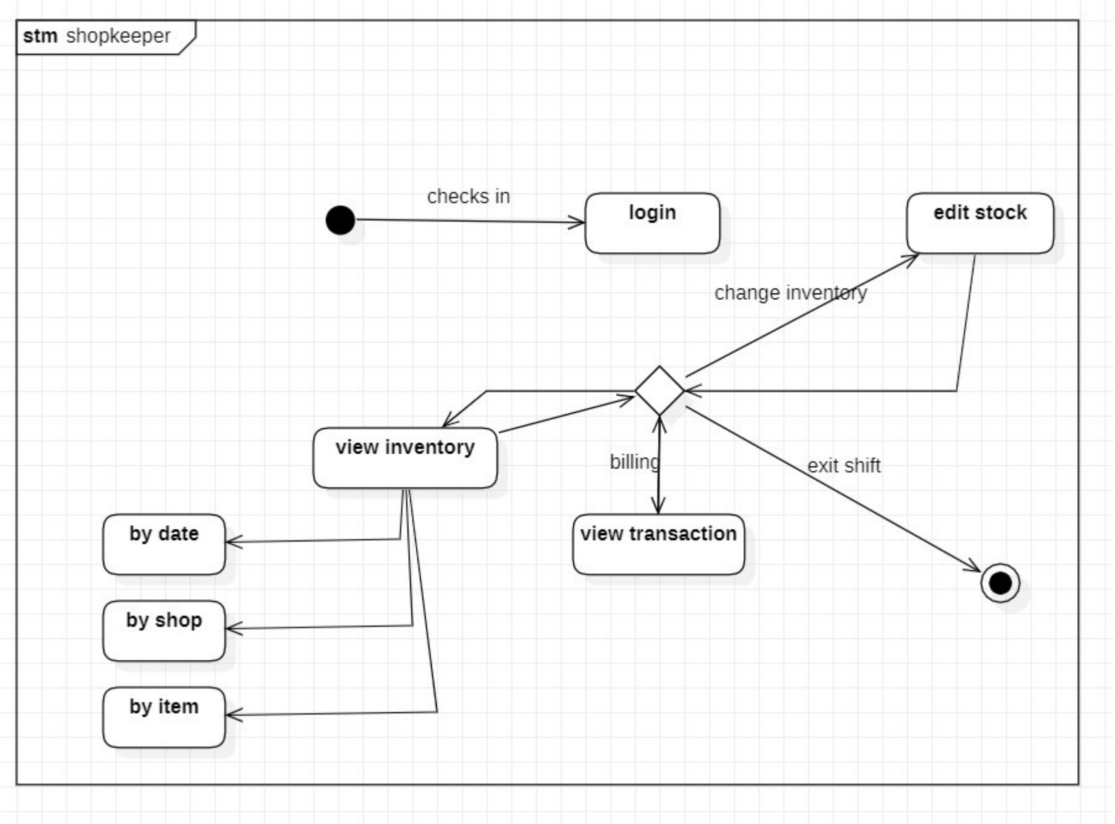


Fig 2.4.2

3. Tools and Frameworks used

Java swing: Swing in java is part of the Java foundation class which is lightweight and platform-independent. It is used for creating window-based applications. It includes components like buttons, scroll bar, text fields, etc. Putting together all these components makes a graphical user interface.

Java AWT: Java AWT (Abstract Window Toolkit) is an API to develop Graphical User Interface (GUI) or windows-based applications in Java.

Java AWT components are platform-dependent i.e. components are displayed according to the view of the operating system. AWT is heavyweight i.e. its components are using the resources of the underlying operating system (OS).

Mysql: MySQL is a relational database management system based on SQL – Structured

Query Language. The application is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications. The most common use for MySQL however, is for the purpose of a web database.

4. Design Principles and Design Patterns Applied

Design pattern :- The project implements a Behavioural design pattern: adapter.

An Adapter Pattern says that it just "converts the interface of a class into another interface that a client wants".

The project implements this using various activity interfaces that implement a common "ActionListener" interface which is then changed according to the activity i.e Login, Signup,Customer, ProfileProduct, etc

Design Principle:- MVC (Model-View-Controller) is a pattern in software design commonly used to implement user interfaces, data, and controlling logic. It emphasizes a separation between the software's business logic and display. This "separation of concerns" provides for a better division of labor and improved maintenance. Some other design patterns are based on MVC, such as MVVM (Model-View-Viewmodel), MVP (Model-View-Presenter), and MVW (Model-View-Whatever).

The three parts of the MVC software-design pattern can be described as follows:

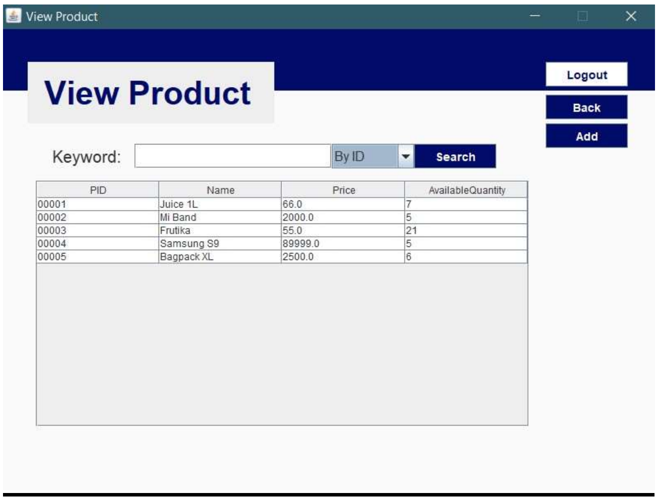
Model: Manages data and business logic.

View: Handles layout and display.

Controller: Routes commands to the model and view parts.

5. Application Screenshots (3-4 important pages)

Product

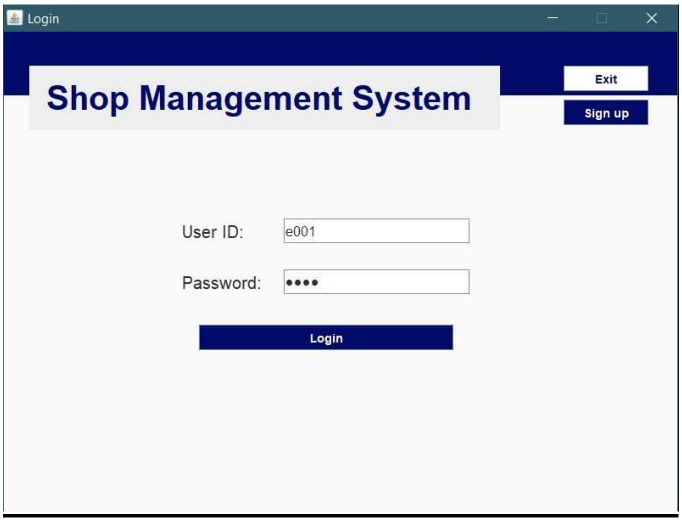


Keyword: By ID

PID	Name	Price	AvailableQuantity
00001	Juice 1L	66.0	7
00002	Mi Band	2000.0	5
00003	Frutika	55.0	21
00004	Samsung S9	89999.0	5
00005	Bagpack XL	2500.0	6

Fig 5.1

Login page

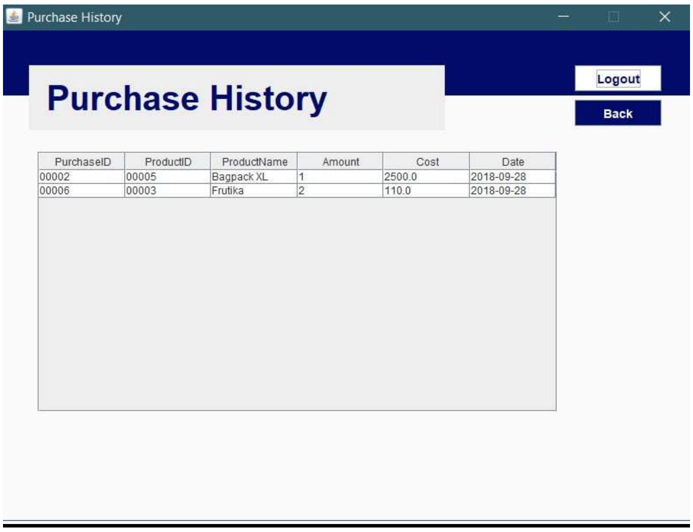


User ID: e001

Password: ••••

Fig 5.2

History

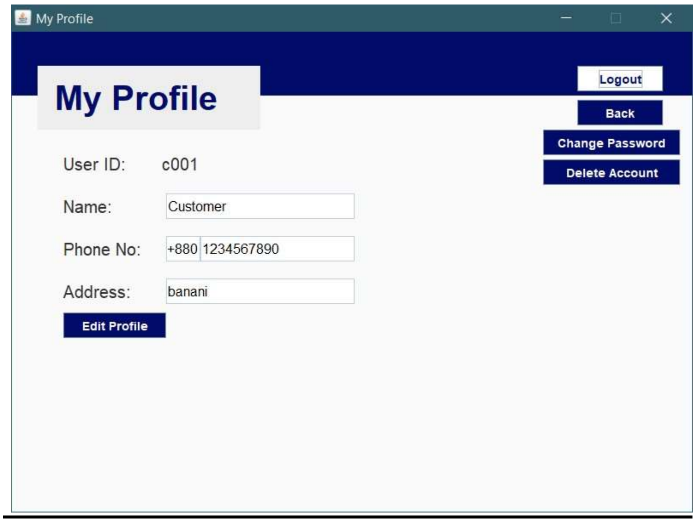


Purchase History

PurchaseID	ProductID	ProductName	Amount	Cost	Date
00002	00005	Bagpack XL	1	2500.0	2018-09-28
00006	00003	Frutika	2	110.0	2018-09-28

Fig 5.3

Edit_profile



My Profile

User ID: c001

Name: Customer

Phone No: +880 1234567890

Address: banani

Fig 5.4

6. Team member contributions

Name	**SRN**	**Contribution**
Shreyas Ganesh	PES2UG19CS387	40%
Saurabh Yadav	PES2UG19CS371	40%
Satwik Bansal	PES2UG19CS470	10%
Sapna Singh	PES2UG19CS366	10%

7. Conclusion: The shop management project was made using java swing, MySQL, and architecture design pattern. It should efficiently be able to smoothen the functioning of the shop, reducing human effort and providing better management.

8.**References:**

https://www.scitepress.org/Papers/2016/59860/59860.pdf

https://docs.oracle.com/javase/7/docs/api/java/awt/package-summary.html

https://docs.oracle.com/javase/8/docs/api/java/sql/package-summary.html