Online Medication shopping system

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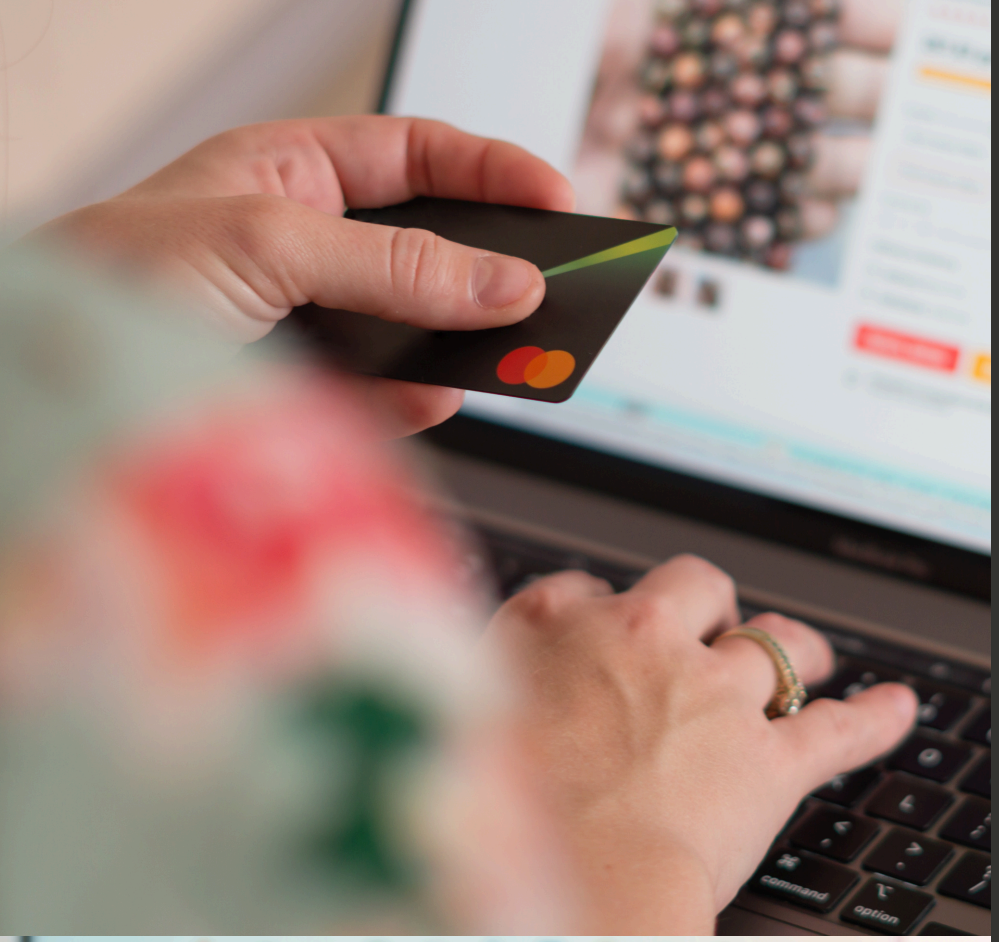
ABSTRACT

Concurrency Handling: The system leverages Java multi- threading to manage multiple user requests simultaneously, ensuring smooth operation and efficient processing of orders without performance bottlenecks.

User-Friendly Interface: The system provides a simple and intuitive platform for users to browse, select, and purchase medicines online using Java technology.

Efficient Order Management: It streamlines the process of placing orders, tracking deliveries, and managing prescriptions digitally.

Inventory & Record-Keeping: The system supports pharmacies with efficient inventory management and accurate record-keeping.



OBJECTIVE

Provide a convenient online platform for purchasing medicines and health products.

Streamline the ordering process for faster and reliable medicine delivery.

Facilitate secure user registration and login for both customers and vendors.

Improve inventory management and record-keeping for pharmacies.

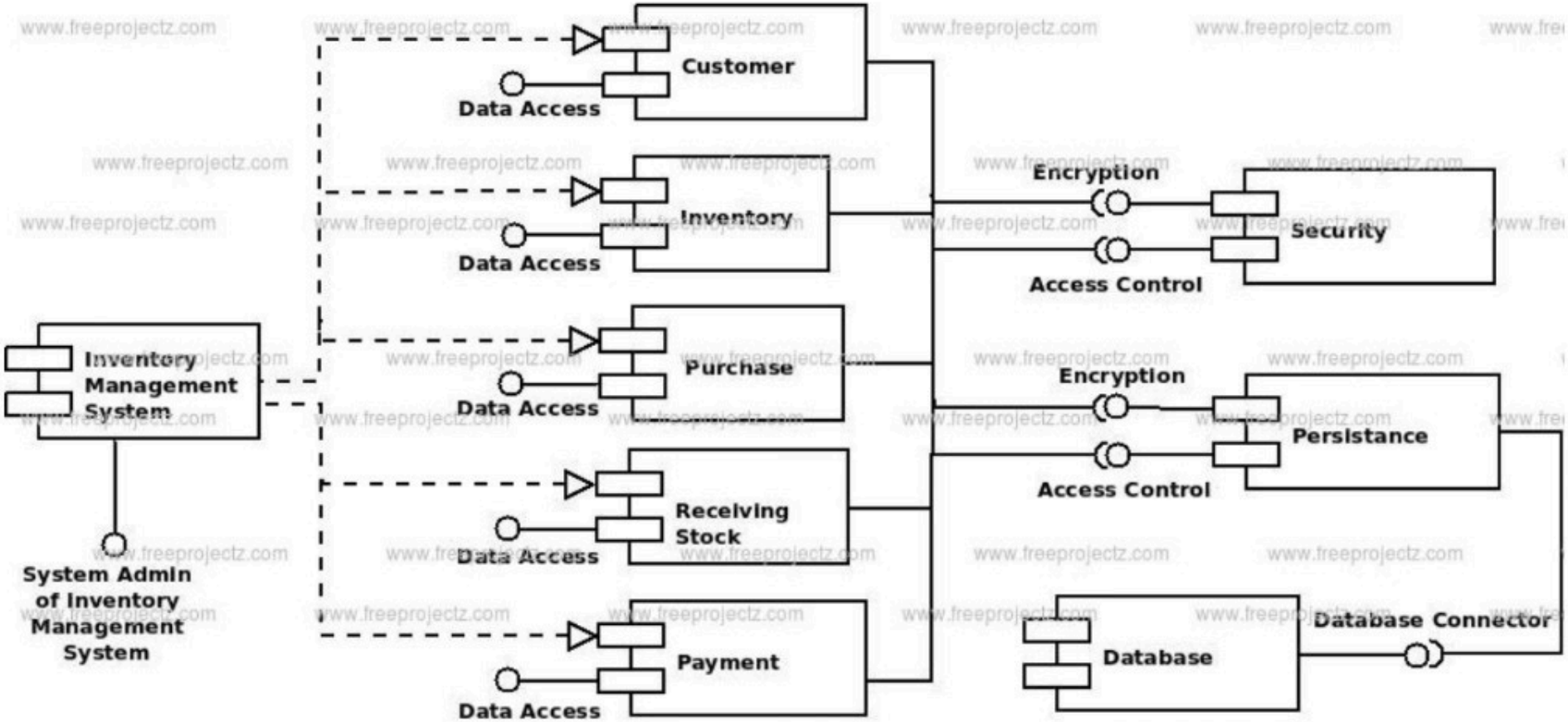
Enable easy browsing and searching of medications with detailed information.

Support secure payment gateways for seamless transactions.

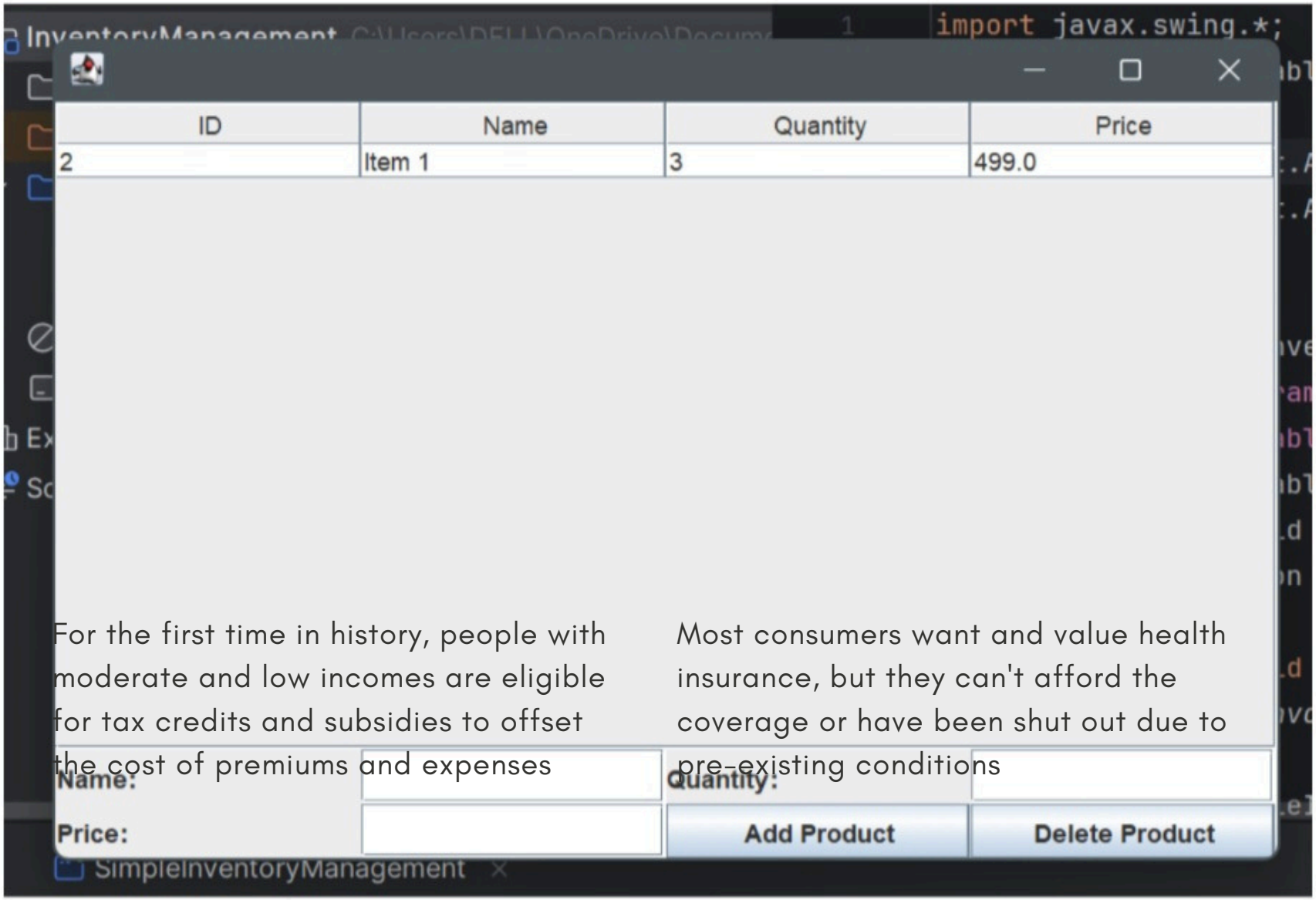
SOFTWARE REQUIREMENTS

- Java Development Kit (JDK)
- Integrated Development Environment (IDE)
- Swing GUI Framework
- Java AWT (Abstract Window Toolkit)
- JRE (Java Runtime Environment)

ARCHITECTURE DIAGRAM



GUI DESIGN



For the first time in history, people with moderate and low incomes are eligible for tax credits and subsidies to offset the cost of premiums and expenses

Most consumers want and value health insurance, but they can't afford the coverage or have been shut out due to pre-existing conditions

DATABASE DESIGN

```
Server version: 9.0.1 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| inventorydb        |
| mydatabase         |
| mysql              |
| performance_schema |
| sakila             |
| sys                |
| world              |
+--------------------+
8 rows in set (0.01 sec)

mysql> use inventorydb
Database changed
mysql> select*from products;
+----+--------+----------+--------+
| id | name   | quantity | price  |
+----+--------+----------+--------+
|  2 | Item 1 |        3 | 499.00 |
|  4 | Item 3 |        4 | 655.00 |
+----+--------+----------+--------+
2 rows in set (0.00 sec)

mysql> |
```

Front-end (Java Swing / JavaFX):

- Login Page: Username/password fields, login button, error handling.
- Dashboard: List of medicines, search bar, cart system, navigation.
- Medicine Listing: Table with medicine details (name, price, availability), add to cart option.
- Cart Page: View/edit cart items, total price.
- Checkout Page: Select payment method, confirm order.

Back-end (Java, MySQL / Database):

- User Authentication: Validate user credentials with a database.

- Medicine Inventory: Store and retrieve medicine details from a database.

- Cart Management: Store cart items and calculate total in real-time.

- Order Processing: Handle payment and order confirmation.

- Database Connectivity: Use JDBC for interactions with the MySQL database.

Sample code

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.util.HashMap;
import java.util.ArrayList;

public class MedicationApp {

  // Simple database to store username-password pairs
  private static HashMap<String, String> users = new HashMap<>();

  // Store medicines and their prices
  private static HashMap<String, Double> availableMedicines = new HashMap<>();

  // Store cart items
  private static HashMap<String, Integer> cart = new HashMap<>();

  public static void main(String[] args) {
    // Initialize some medicine data
    initializeMedicines();

    // Create main login frame
    JFrame loginFrame = new JFrame("Login/Signup - Online Medication Shopping System");
    loginFrame.setSize(500, 400);
    loginFrame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    loginFrame.setLocationRelativeTo(null);

    // Create login/signup panel
    JPanel loginPanel = new JPanel();
    loginPanel.setLayout(null);
    loginPanel.setBackground(new Color(173, 216, 230)); // Light blue background
    loginFrame.add(loginPanel);

    // Welcome Label
    JLabel welcomeLabel = new JLabel("Welcome to the Medication Shopping System");
    welcomeLabel.setFont(new Font("Arial", Font.BOLD, 18));
    welcomeLabel.setBounds(60, 20, 400, 30);
    loginPanel.add(welcomeLabel);
```

```
    // Password Field
    JPasswordField passwordText = new JPasswordField(20);
    passwordText.setBounds(200, 120, 165, 25);
    loginPanel.add(passwordText);

    // Signup Button
    JButton signupButton = new JButton("Sign Up");
    signupButton.setBounds(100, 180, 100, 30);
    loginPanel.add(signupButton);

    // Login Button
    JButton loginButton = new JButton("Login");
    loginButton.setBounds(250, 180, 100, 30);
    loginPanel.add(loginButton);

    // Action for signup
    signupButton.addActionListener(new ActionListener() {
        @Override
        public void actionPerformed(ActionEvent e) {
            String username = userText.getText();
            String password = String.valueOf(passwordText.getPassword());

            if (!username.isEmpty() && !password.isEmpty()) {
                if (!users.containsKey(username)) {
                    users.put(username, password);
                    JOptionPane.showMessageDialog(null, "Signup Successful! You can now log in.");
                    userText.setText("");
                    passwordText.setText("");
                } else {
                    JOptionPane.showMessageDialog(null, "Username already exists. Please choose another.");
                }
            } else {
                JOptionPane.showMessageDialog(null, "Please enter valid details.");
q           }
        }
    });

    // Action for login
    loginButton.addActionListener(new ActionListener() {
        @Override
        public void actionPerformed(ActionEvent e) {
            String username = userText.getText();
            String password = String.valueOf(passwordText.getPassword());

            if (users.containsKey(username) && users.get(username).equals(password)) {
                JOptionPane.showMessageDialog(null, "Login Successful!");
                loginFrame.dispose(); // Close the login window
                openMainApplication();  // Proceed to main application
            } else {
                JOptionPane.showMessageDialog(null, "Invalid Username or Password.");
            }
        }
    });

    // Set frame visibility
    loginFrame.setVisible(true);
```

```
visibility
etVisible(true);


dicine data (40 common medicines and their prices)
oid initializeMedicines() {
dicines.put("Paracetamol", 10.0);
dicines.put("Aspirin", 8.5);
dicines.put("Ibuprofen", 12.0);
dicines.put("Cough Syrup", 15.0);
dicines.put("Antibiotic Cream", 20.0);
dicines.put("Vitamin D Tablets", 25.0);
dicines.put("Cetirizine", 7.0);
dicines.put("Ranitidine", 5.0);
dicines.put("Amoxicillin", 30.0);
dicines.put("Ciprofloxacin", 18.0);
dicines.put("Lisinopril", 22.0);
dicines.put("Metformin", 15.0);
dicines.put("Omeprazole", 20.0);
dicines.put("Prednisone", 10.0);
dicines.put("Atorvastatin", 28.0);
dicines.put("Losartan", 17.0);
dicines.put("Furosemide", 12.0);
dicines.put("Amlodipine", 9.0);
dicines.put("Hydrochlorothiazide", 13.0);
dicines.put("Simvastatin", 14.0);
dicines.put("Levothyroxine", 32.0);
dicines.put("Clindamycin", 27.0);
dicines.put("Azithromycin", 25.0);
dicines.put("Benzoyl Peroxide", 16.0);
dicines.put("Salicylic Acid", 12.0);
dicines.put("Hydrocortisone", 18.0);
dicines.put("Albuterol", 35.0);
dicines.put("Gabapentin", 22.0);
dicines.put("Sildenafil", 50.0);
dicines.put("Tamsulosin", 30.0);
dicines.put("Tramadol", 40.0);
dicines.put("Doxycycline", 15.0);
dicines.put("Prednisolone", 28.0);
dicines.put("Chlorpheniramine", 9.0);
dicines.put("Cetirizine Syrup", 18.0);
dicines.put("Betamethasone", 14.0);
dicines.put("Methotrexate", 45.0);
dicines.put("Insulin", 60.0);
dicines.put("Zinc Supplements", 20.0);
dicines.put("Calcium Tablets", 25.0);


application after login
oid openMainApplication() {
AppFrame = new JFrame("Medication Shopping System");
me.setSize(600, 500);
me.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
me.setLocationRelativeTo(null);

Panel = new JPanel();
etLayout(new BorderLayout());
etBackground(new Color(173, 216, 230)); // Light blue background
me.add(mainPanel);


abel = new JLabel("Available Medicines", JLabel.CENTER);
Font(new Font("Arial", Font.BOLD, 20));
```

```
pen main application after login
vate static void openMainApplication() {
Frame mainAppFrame = new JFrame("Medication Shopping System");
ainAppFrame.setSize(600, 500);
ainAppFrame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
ainAppFrame.setLocationRelativeTo(null);

Panel mainPanel = new JPanel();
ainPanel.setLayout(new BorderLayout());
ainPanel.setBackground(new Color(173, 216, 230)); // Light blue background
ainAppFrame.add(mainPanel);

/ Title Label
Label titleLabel = new JLabel("Available Medicines", JLabel.CENTER);
tleLabel.setFont(new Font("Arial", Font.BOLD, 20));
ainPanel.add(titleLabel, BorderLayout.NORTH);

/ Medicine List Panel with scroll
Panel medicinePanel = new JPanel();
edicinePanel.setLayout(new GridLayout(availableMedicines.size() + 1, 4, 10, 10));

/ Add headers
edicinePanel.add(new JLabel("Medicine Name"));
edicinePanel.add(new JLabel("Cost"));
edicinePanel.add(new JLabel("Quantity"));
edicinePanel.add(new JLabel("Add to Cart"));

/ Medicine selection and cart logic
rrayList<JComboBox<Integer>> quantityBoxes = new ArrayList<>();

r (String medicine : availableMedicines.keySet()) {
 // Medicine Name
 medicinePanel.add(new JLabel(medicine));

 // Medicine Cost
 Double price = availableMedicines.get(medicine);
 medicinePanel.add(new JLabel("₹" + price));

 // Quantity Dropdown
 JComboBox<Integer> quantityBox = new JComboBox<>();
 for (int i = 1; i <= 10; i++) {
    quantityBox.addItem(i);
 }
 quantityBoxes.add(quantityBox);
 medicinePanel.add(quantityBox);

 // Add to Cart Button
 JButton addButton = new JButton("Add to Cart");
 addButton.addActionListener(new ActionListener() {
    @Override
    public void actionPerformed(ActionEvent e) {
        int selectedQuantity = (int) quantityBox.getSelectedItem();
        cart.put(medicine, selectedQuantity);
        JOptionPane.showMessageDialog(null, selectedQuantity + " units of " + medicine + " added to cart.");
    }
 });
 medicinePanel.add(addButton);
```

```java
    // Scroll Pane for medicine panel
    JScrollPane scrollPane = new JScrollPane(medicinePanel);
    scrollPane.setVerticalScrollBarPolicy(JScrollPane.VERTICAL_SCROLLBAR_ALWAYS);
    mainPanel.add(scrollPane, BorderLayout.CENTER);

    // Cart Summary Button
    JButton viewCartButton = new JButton("View Cart");
    viewCartButton.addActionListener(new ActionListener() {
        @Override
        public void actionPerformed(ActionEvent e) {
            StringBuilder cartSummary = new StringBuilder("Cart Summary:\n");
            double totalCost = 0;

            for (String item : cart.keySet()) {
                int quantity = cart.get(item);
                double cost = availableMedicines.get(item);
                cartSummary.append(item + " - ₹" + cost + " x " + quantity + " = ₹" + (cost * quantity) + "\n");
                totalCost += cost * quantity;
            }

            cartSummary.append("Total Cost: ₹" + totalCost);
            JOptionPane.showMessageDialog(null, cartSummary.toString());
        }
    });

    mainPanel.add(viewCartButton, BorderLayout.SOUTH);

    // Set frame visibility
    mainAppFrame.setVisible(true);
  }
}
```

Thankyou