PROJECT REPORT

SHOPPING CART SYSTEM USING PYTHON

Himanshu
25BAI11400
CSE-AIML

ABSTRACT

The Shopping Cart System is a developed using Python that simulates the core functionality of an e-commerce shopping cart. The system allows users to browse a product catalog, add items with desired quantity to the cart, view the cart, remove unwanted items, calculate the total amount including 18% GST, and generate a formatted bill. The final invoice is automatically saved as a timestamped text file for record-keeping.

TABLE OF CONTENTS

1. INTRODUCTION

With the rapid growth of e-commerce, shopping cart systems have become an essential part of online stores. This project is a simplified version of such a system, built entirely in Python using only built-in modules. It provides hands-on experience in building a real-world application using core programming concepts.

2. OBJECTIVES

- To develop a user-friendly shopping cart application using Python.
- To implement data structures for storing products and cart items.
- To perform bill calculation with GST.
- To generate and save invoices automatically.
- To handle user inputs safely using exception handling.

---

3. SCOPE OF THE PROJECT

The system can be used as a foundation for building full-fledged e-commerce platforms. It currently supports basic shopping operations and can be extended with GUI, database, user accounts, payment gateway simulation, etc.

---

4. SOFTWARE & HARDWARE REQUIREMENTS

Software
- Python 3.8 or higher
- Any text editor or IDE (VS Code, PyCharm, IDLE)
- Operating System: Windows / Linux / macOS

Hardware
- Minimum 4 GB RAM
- 100 MB free disk space

---

5. SYSTEM DESIGN & METHODOLOGY

Data Structures Used
- List of dictionaries → Product catalog
- List of dictionaries → Shopping cart

Program Flow

Start → Display Menu →
1. View Products
2. Add to Cart
3. View Cart
4. Remove Item
5. Checkout & Generate Bill → Save .txt file
6. Exit

6. FEATURES IMPLEMENTED

| Feature | Status |

Display product catalog	Completed
Add items with quantity	Completed
View cart with subtotal	Completed
Remove items from cart	Completed
18% GST calculation	Completed
Formatted bill generation	Completed
Auto-save bill as .txt file	Completed
Input validation & error handling	Completed

7. SAMPLE OUTPUT

Main Menu
Product List
Cart View
Final Bill

8. TESTING

Test Case	Expected Result	Status
Add valid product	Added successfully	Passed
Add invalid product ID	Error message	Passed
Enter negative quantity	Rejected	Passed
Remove non-existing item	Error handling	Passed
Checkout with empty cart	Warning message	Passed
Bill saved with correct date	File created with timestamp	Passed

9. LIMITATIONS

- Console-based (no graphical interface)
- Fixed product list (no admin panel)
- No user authentication
- No database persistence for products

10. FUTURE ENHANCEMENTS

- Convert to GUI using Tkinter or PyQt
- Add SQLite database for product management
- User registration and login system
- Discount coupons and offers
- Payment method selection
- Email bill feature
- Admin panel to add/edit products

---

11. CONCLUSION

The Shopping Cart System was successfully developed and meets all the defined objectives. The project provided valuable insights into real-world application development using Python. It strengthened understanding of data structures, functions, file handling, and error management. The system is fully functional, user-friendly, and easily extendable.

12. Sample Generated Bill

```
==================================================
         YOUR SHOPPING BILL
==================================================
Date & Time: 22-11-2025 04:30 PM

Item               Qty      Price      Total
--------------------------------------------------
Laptop              1       ₹45000     ₹45000
Headphones          2       ₹2200      ₹4400
--------------------------------------------------
Subtotal:                    ₹49400
GST 18%:                     ₹8892
Grand Total:                 ₹58292
==================================================
       Thank You! Visit Again 😊
```