VELLORE INSTITUTE OF TECHNOLOGY BHOPAL

TOPIC:-
Cash Memo Generator System

Developed by:-

AKSHAT GROVER

(25BAI10763)

INTRODUCTION

- This project is a simple Python based billing system.

- It collects customer details and item information.

- It calculates totals and prints a formatted cash memo.

PROBLEM STATEMENT

- Small shops need a quick way to generate cash memos.

- Manual calculations lead to errors.

- The system should simplify billing and generate totals correctly.

FUNCTIONAL REQUIREMENTS

- Input shop name and invoice number.

- Collect customer details automatically using a helper module.

- Add multiple items with quantity and price.

- Calculate total for each item and overall grand total.

- Print cash memo in readable format.

NON-FUNCTIONAL REQUIREMENTS

- Simple and user-friendly command line interface.

- Readable and structured output format.

- Lightweight Python program with no external dependencies.

System Architecture

- Two Python modules:cashmemo system and customer details module.

- There is step by step flow from inputs to calculations to output.

- Data stored in list.

DESIGN DIAGRAMS

- Use Case Diagram: Customer and System interaction.

- Workflow Diagram: Input > Process > Output.

- Sequence Diagram: Order of function calls.

- Class/Component Diagram: Main script and customer module.

- ER Diagram: No database used.

Design Decisions & Rationale

- Choose simple input-based design for ease of use.

- Kept modules separate to improve code organization.

- As we have not studied about databases much,therefore not used it.

IMPLEMENTATION DETAILS

- Written in Python using standard input/output.

- customer.py handles customer ID generation.

- cashmemo.py processes items and prints final memo.

SCREENSHOTS / RESULTS

Attaching a screenshot of output,as there is also a dedicated folder of screenshots in repository.

TESTING APPROACH

- Tested with multiple customer inputs.

- Checked calculations for accuracy.

- Verified formatting for different item counts.

CHALLENGES FACED

- Handling dynamic item entries.

- Maintaining readable formatting in console output.

LEARNINGS & KEY TAKEAWAYS

- Better understanding of python programming.

- Improved logic building for billing calculations.

FUTURE ENHANCEMENTS

- Add GUI interface.

- Integrate database for transaction history.

- Export memo as PDF or print directly.

REFERENCES

- Python official documentation.

- Basic billing concepts and formatting guidelines.