University of Jeddah

Faculty of Computing and Information Technology

Department of Computer Science

Course Title: Data Structures

Project Title: Order Processing System with Priority Handling

Submitted by:

Layan Saeed Almunammis – 2317296

Nadeen Abdullah Alshehri – 2314172

Order Processing System - Report

Student Names:
Layan Saeed Almunammis, 2317296
Nadeen Abdullah Alshehri, 2314172

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Project Title:

Order Processing System with Priority Handling

Objective:

The purpose of this project is to implement an order management system that allows users to:

- Add orders with different priorities (normal or urgent)

- Fulfill orders in a FIFO manner with respect to priority

- Cancel specific orders

- View current pending orders

- View the history of processed and canceled orders

Data Structure:

The system uses a singly linked list for both:

- Pending orders queue: to store incoming orders.

- Order history list: to store fulfilled or canceled orders.

Priority Feature:

- Each order is tagged as either normal or urgent.

- Urgent orders are placed ahead of normal ones, ensuring they get processed first.

- Within each priority level, FIFO order is preserved.

Features Implemented:

1. Add Order:

   - Takes customer name and priority.

   - Inserts order in appropriate place based on priority.

2. Fulfill Order:

   - Removes the first order from the queue (highest priority) and moves it to history.

3. Cancel Order:

   - Cancels a specific order by name and moves it to history.

4. Display Orders:

   - Shows all currently pending orders with their priorities.

5. Display History:

   - Shows all completed and canceled orders.

Technologies Used:

- Java (console-based application)

- Scanner for input

- Basic Java OOP and linked list logic

Conclusion:

This project showcases how priority-based processing can be implemented using simple data structures. It reinforces the understanding of linked lists, object-oriented programming, and queue operations in Java.