

CIS 233

Project Assignment: Online Food Delivery System (Java)

Objective:

This project aims to design and implement a simplified online food delivery system using Java. It will serve as a practical exercise to demonstrate your understanding of object-oriented programming (OOP) principles and data structures.

System Requirements:

The online food delivery system should encompass the following core functionalities:

- Ordering:
 - Customers can place orders for hamburgers, fries, and drinks.
 - Each menu item should have a name and price.
 - Orders should store details about the customer, selected items, and order status (e.g., placed, accepted, delivered).
- Delivery:
 - Drivers can accept and deliver orders.
 - The system keeps track of basic driver information (e.g., name, location).
- Rating:
 - Customers can rate drivers on a scale of 1 to 5 after an order is delivered.
 - Each driver can have a maximum of 10 ratings stored at a time, with new ratings replacing the oldest ones.
- Order Processing:
 - Orders must be processed in the order they are received (First-In, First-Out).

Tasks:

To successfully complete this project, you will need to undertake the following tasks:

1. Design:

- Create comprehensive class diagrams to model the system's structure, including all relevant classes and their attributes and methods.
- Clearly define the relationships between these classes (e.g., inheritance)
- Ensure your design adheres to OOP principles.

2. OOP Principles:

- Provide a detailed explanation of how your design incorporates the four fundamental OOP principles:
 - Encapsulation:
 - Abstraction:
 - Inheritance:
 - Polymorphism:

3. Data Structures:

- Describe the data structures you will use to implement the system's functionalities
- Justify your choices based on the specific requirements and efficiency considerations.

4. Implementation:

- Write the Java code to implement the system based on your design.
- Include necessary methods for:
 - Placing orders.
 - Accepting and delivering orders.
 - Calculating order totals.
 - Managing driver ratings.
 - etc
- Ensure that orders are processed in the correct order.
- Utilize GitHub for collaborative development and version control.

5. Demonstration:

- You will be required to demonstrate your working system. Specific instructions for the demonstration will be provided later.

Submission and Deadlines:

- Friday, November 8, 2024 (100 points):
 - Submit a PDF document named "CIS233_GROUP_NAME.pdf" (replace "GROUP_NAME" with your actual group name).
 - This document should include:
 - The first version of the system design (Class diagrams).
 - Explanations of how you applied OOP principles.
 - Descriptions of the chosen data structures.
 - One person from each group should submit the document.

Grading Rubric (for this submission only):

- Design (60%): The system is well-designed using OOP principles, and class diagrams clearly represent the system's structure.
- Data Structures (30%): Appropriate data structures are chosen and effectively utilized.
- Document Clarity (10%): The submitted document is clear, concise, and easy to read.
- Thursday, November 14, 2024 (50points):
 - Submit a revised version of the system design and implementation based on the feedback received.
- Thursday, November 21, 2024 (50 points):
 - Demonstrate the current system code with some core classes implemented.
- Thursday, December 5, 2024 (100 points):
 - Submit the final code and demonstrate the complete working system.

This project assignment is designed to assess your ability to apply OOP concepts, data structures, and software development best practices. Ensure that your design is robust, your code is well-documented, and your system meets all the specified requirements.

Good luck!