

Object Oriented Programming

CS F22

Assignment-02

General Instructions:

- **Deadline for this assignment submission is 29th of March, 2024**
- You must zip your files into a folder and name it according to your roll no., for example, **A02_BCSF22M001.zip**. This zipped file should then be submitted via email: progfun15@gmail.com.
- This is an individual assignment. Any case of cheating or plagiarism would result in a solid **zero** marks.

Task: Implement Flight Reservation System

Problem Statement: *Design and implement a Flight Reservation System using Object-Oriented Programming principles in C++. The system should provide functionalities for checking seat availability, making reservations, and managing flight schedules across multiple airlines.*

Key functionalities to include:

Seat Availability Checking:

- Implement methods to query seat availability on different flights based on criteria such as date, time, destination, and class.

Reservation Management:

- Develop functionality to handle reservations, allowing users to book seats on desired flights, specifying preferences like seat selection and class type.
- Ensure the ability to modify or cancel reservations while maintaining data consistency.

Multi-Airline Integration:

- Design features to represent airlines, flights, and airports, enabling users to search and book flights across various carriers.
- Implement mechanisms to manage relationships between airline entities and flight schedules.

User Interface Design:

- Design a simple console-based interface using C++ features such as classes, objects, and function overloading to facilitate user interaction with the reservation system.
- Implement input validation mechanisms to handle user inputs and guide them through the reservation process.

Data Management:

- Utilize file handling techniques to store and retrieve information about flights, reservations, and user data persistently.

Code Organization:

- Organize the code into logical modules and classes, adhering to best practices for code readability and maintainability.

Note: This assignment aims to reinforce OOP concepts in the context of real-world application development using C++. Students are encouraged to leverage polymorphism, and encapsulation to design a modular and extensible reservation system.