Course Code: CS1004	Course Name: Object Oriented Programming	
Instructor Name: Mr. Basit Ali		
Student Roll No:	Section:	

Max Marks: 20

Question # 1 (15 Marks)

Imagine that you are assigned the task of developing a ticket booking system for a multiplex cinema. Design a comprehensive class in C++ to manage movie tickets efficiently.

Requirements

1- Create a class named 'Movie' to encapsulate attributes such as movie ID, title, genre, duration, and rating.

2- Implement constructors for the 'Movie' class to initialize its attributes, ensuring default values are appropriately set.

3- Include setter and getter functions within the 'Movie' class to enable manipulation and retrieval of movie information.

4- Ensure data validation checks within setter functions to maintain data integrity, such as validating valid movie durations and ratings.

5- Define a method within the 'Movie' class to calculate the total revenue generated by a movie based on the number of tickets sold and ticket prices.

6- Ensure that the revenue calculation method accurately computes the total revenue considering the ticket prices and the number of tickets sold.

7- Implement functions within the ticket booking system to support the reservation, cancellation, and updating of movie tickets dynamically.

Question # 2 (5 Marks)

Discuss the advantages of the proposed class in **Question #1** in facilitating efficient ticket management within the multiplex cinema. Analyze how the encapsulation of movie attributes, along with data validation mechanisms, contributes to the reliability and maintainability of the ticket booking system. Additionally, explain the role of modularity in enhancing the scalability and extensibility of the system to accommodate future enhancements or changes in movie offerings.