(CL-1004) OBJECT ORIENTED PROGRAMMING LAB

LAB TASK # 02

NOTE: Late submissions will NOT be accepted for any task/assignment.

- Copied task will be awarded zero marks
- Lab Tasks will be graded in Lab

Q No.1: Pass By Value and By Reference **Marks: 5**

Write a C++ program to calculate cube of a number. Define two functions for calculating cube of a number, one for "passing by value" and other for "passing by reference".

Sample Output:

```
Enter First Number: 5
Enter Second Number: 5


Pass By Value Result: 125
Pass By Reference Result: 125


num1 : 5
num2 : 125
```

Q No.2: Fraction Calculations **Marks: 10**

Write a C++ program to create a simple seat booking system for a theatre. The theatre has a seating arrangement with 5 Rows and 6 Columns, and each seat can be either booked or available.

Requirements:

- Use a 2D array to represent the seating arrangement.
- Implement the following functions:
    - **void initialiseSeats(char arr[][COLS])**: Initialize all seats to an empty state.
    - **void displaySeating(char arr[][COLS])**: Display the current seating arrangement with seat numbers and statuses.

- **bool bookSeat(char arr[][COLS], int r, int c)**: Attempt to book a seat. Return true if booking is successful, false if the seat is already booked.
- **int availableSeats(char arr[][COLS])**: Count and return the number of available seats.

- The main program initializes the seat arrangement, displays the initial seating layout, and lets users book seats by providing row and column numbers. After each booking attempt, the program updates and displays the seating arrangement. The booking process continues until all seats are booked or the user exits. At the end, the program displays a message with the total number of booked seats.