TASK#10

Question#1

You are working on a banking system where you need to implement classes for handling Account and Bank. The Account class holds information about a customer's bank account, such as balance and account number, while the Bank class handles various banking operations such as transferring money between accounts.

To ensure security and encapsulation, certain functions need to access private members of these classes. In particular, you need a function to transfer money between two accounts, which requires access to the private balance information of both accounts. You will use friend functions and friend classes to achieve this.

1. **Define the Account Class**:
    - Private members:
        - int accountNumber
        - double balance
    - Public members:
        - Constructor to initialize the account number and balance.
        - Function to display account details.
2. **Define the Bank Class**:
    - Public members:
        - A function transferMoney that transfers a specified amount from one account to another. This function should be a friend function of the Account class.
3. **Implement the Friend Function**:
    - The transferMoney function should be able to access and modify the private members of the Account class.
4. **Write a Main Function**:
    - Create two instances of the Account class.
    - Display their initial details.

- Transfer money from one account to the other using the transferMoney function.
- Display their details again to show the result of the transfer.

Question#2

You are developing a system for a university where students enroll in various courses. The `Student` class contains information about the student, while the `Course` class manages the details of each course, including the list of enrolled students. To facilitate enrollment and allow a course to access the private details of a student (like the student ID and name), you will use friend classes.

Task

1. **Define the `Student` Class**:
   - Private members:
     - `int studentID`
     - `std::string name`
   - Public members:
     - Constructor to initialize the student ID and name.
     - Function to display student details.
2. **Define the `Course` Class**:
   - Private members:
     - `std::string courseName`
     - `std::Student enrolledStudents[]`
   - Public members:
     - Constructor to initialize the course name.
     - Function to enroll a student in the course.
     - Function to display the list of enrolled students.
3. **Implement Friend Class Relationship**:
   - The `Course` class should be declared as a friend of the `Student` class so that it can access and manage private student details for enrollment purposes.
4. **Write a Main Function**:
   - Create instances of the `Student` class.
   - Create an instance of the `Course` class.
   - Enroll students in the course using the `enrollStudent` function.
   - Display the list of students enrolled in the course.

Question#3

Modify the task 7 question1 in such a way that the operator functions should be declared outside the class and declared as friend with the clockType class.