

## Programming Practice Lab

### Assignment 6

**CO3: Understand and implement OOP features through C++ Programming**

**CO4: Design and implement the solution following OOP paradigm**

1. In a library, for each book book-id, serial number (denotes copy number of a book), title, author, publisher and price are stored. Book-id and serial number together will be unique identifier for a book. Members are either student or faculty. Each member has unique member-id. Name, e-mail, address are also to be stored. For any transaction (book issue or return), members are supposed to place transactions slip. User will submit member-id, book-id, and serial number (only for book return). While processing a transaction, check the validity of the member. While issuing, availability of a copy of the book is to be checked. While returning a book, it is to be checked whether this copy was issued to the member or not. A student member can have 2 books issued at a point of time. For faculty members it is 10. Transaction information is to be stored like date of transaction, member-id, book-id, serial number, returned or not. An entry is made when book is issued and updated when the book is returned. **For storing the information consider files.**

Design the classes and implement.

2. Consider a class Student with roll, name and score as attributes. Support to take and display data is also there. One wants to works with array of Student objects. May collect data for array elements, display those. In case index goes out of bounds, exception is to be raised with suitable message.
3. Implement a class template for 1D array. Elements may be any basic data type. Provision to find maximum element, sum of the elements must be there.