



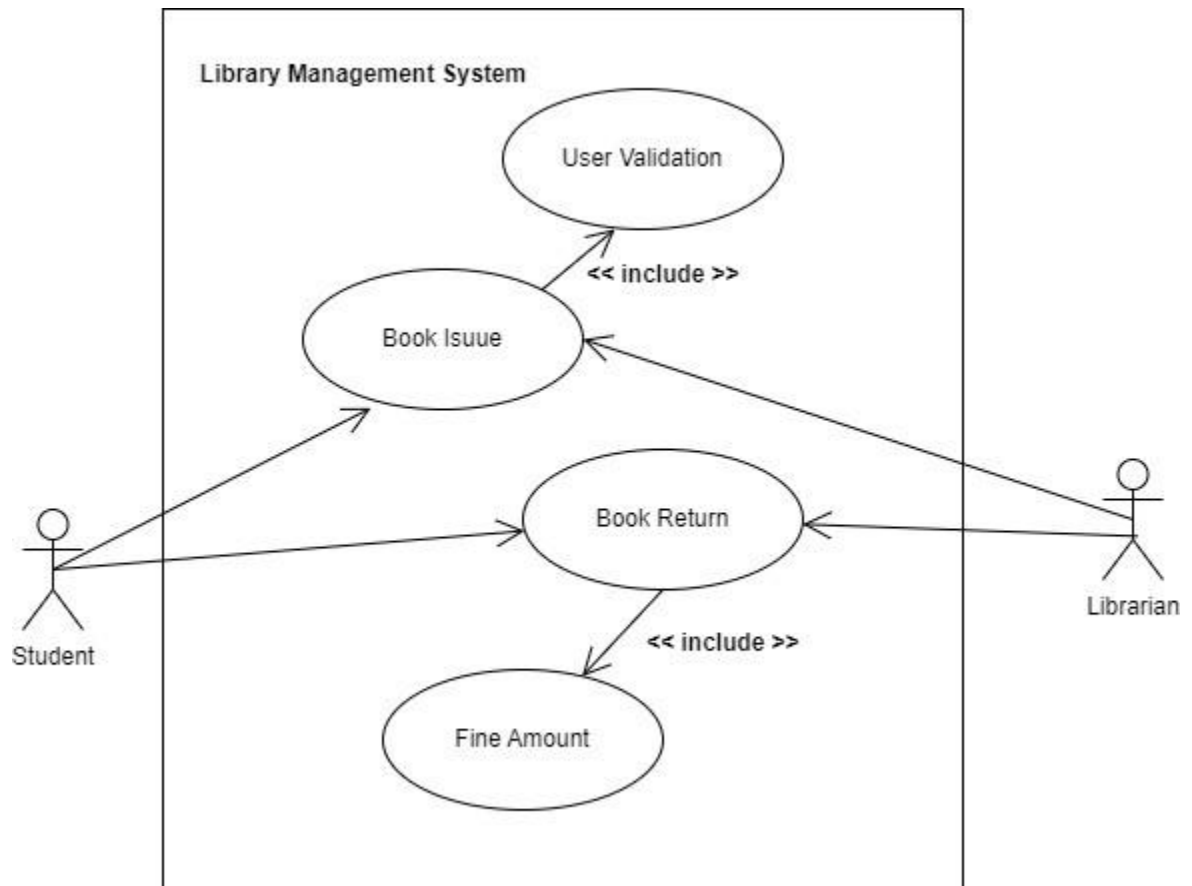
IT-314

(Software Engineering)

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- ❖ **Lab :- 7**

Ans 1):

1)



Use Case Documentations :- Issue Book

Use Case Name :- Issue book

Actor :-

- (i) Primary :- Librarian
- (ii) Other :- Student, Inventory, Other Staff

Success Goal :-

- (i) Book status will be changed to the "ISSUED".

- (ii) No_of_issued book will be increased in the student profile.

Main Scenario :-

- (i) Student go to the librarian to issue the book.
- (ii) Librarian validate the student.
- (iii) Librarian check the availability of book, if available then change its status to the “issued”.
- (iv) Librarian update the student profile accordingly.
- (v) Student get the book.

Alternative Flow :-

- (i) If the system fails at any pont
 - The issuance process is cancelled and restarted.
 - Librarian will manually update the inventory and the student profile.
- (ii) If book is not available
If the wanted book is not in the inventory then student can not issue the book.
- (iii) Student is not member of Library.
Whole process will be cancelled and book will be returned to the librarian.

Special Requirements :-

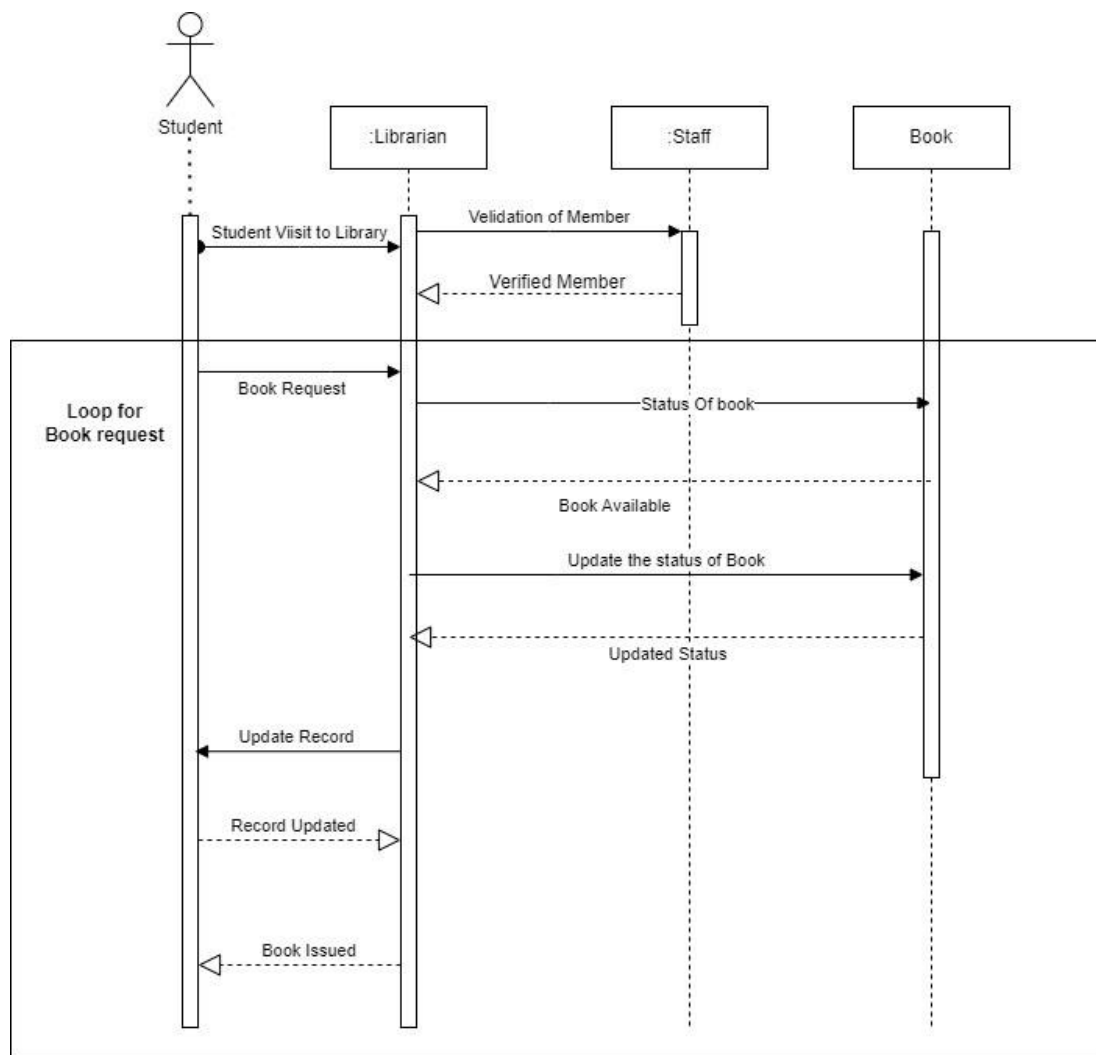
- (i) Some Backup system to handle system failures.
- (ii) Secure the database.

(iii) Timely check for the member account's validation.

Post-Conditions :-

After one transaction system should be ready for the another transaction.

2) Sequence Diagram for the Above Question.



Entities :-

- i. Book :- It represent the book with unique ISBN number.
- ii. Student :- Student with unique I'd.
- iii. Transaction :- Represent the book issuance process between student and librarian.

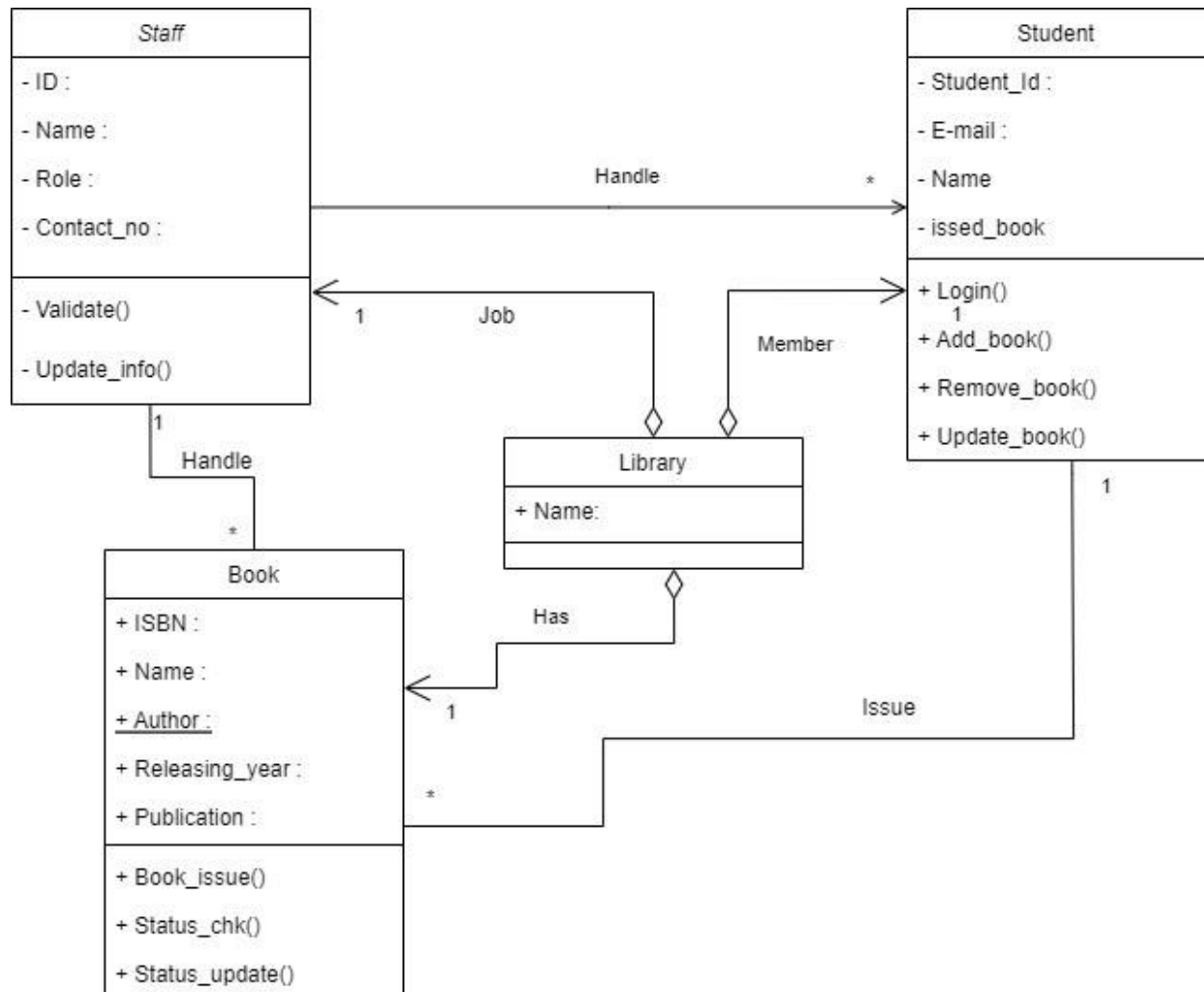
Boundary Object :-

- i. Library Interface :- In this interface, the transaction would happen and the both of then interact.

Control Object :-

- i. Fine Calculator :- Calculate the fine for delayed return of the book.
- ii. Inventory :- This database contains all the details of the book, number of its copy, availability.
- iii. And This Library Management System is also control object in it self.

3) Object Diagram for the Issue the book.



Ans 2):

Sequence Diagram :-

