

Coding Assignment 2 – UML Modeling

For Sprint 1, I implemented the User base class, and the student and teacher subclasses. I also implemented a library with books, users, and passwords dictionaries, as well as a user login/authentication system. Below is a demo to show execution of the sprint.

```
● >python sprint1.py
Login successful for s1
Login failed
```

In **Sprint 2**, Book Management & Borrow/Return Functionality was implemented, as well as a book class with total_copies and available_copies, borrow/return functionality for users, and search function for books. Below is a demo to show execution of the sprint.

```
● > python sprint2.py
Search 'Title 1':
- Title 1 (avail 3/3)
Login successful for s1
[Reese] Borrowed 'Title 2'.
[Reese] 'Title 2' not available.
[Reese] Returned 'Title 2'.
[Reese] Book B9 not found.
```

In Sprint 3, unique Functions for Students & Teachers were implemented, such as view_grades() and request_recommendation() for Students, and add_course_material() and borrowed_books() for Teachers. Below is a demo to show execution of the sprint.

```
● > python sprint3.py
Login successful for S1
[Lizzie] Borrowed 'Title 1'.
[Reese] Borrowed 'Title 2'.

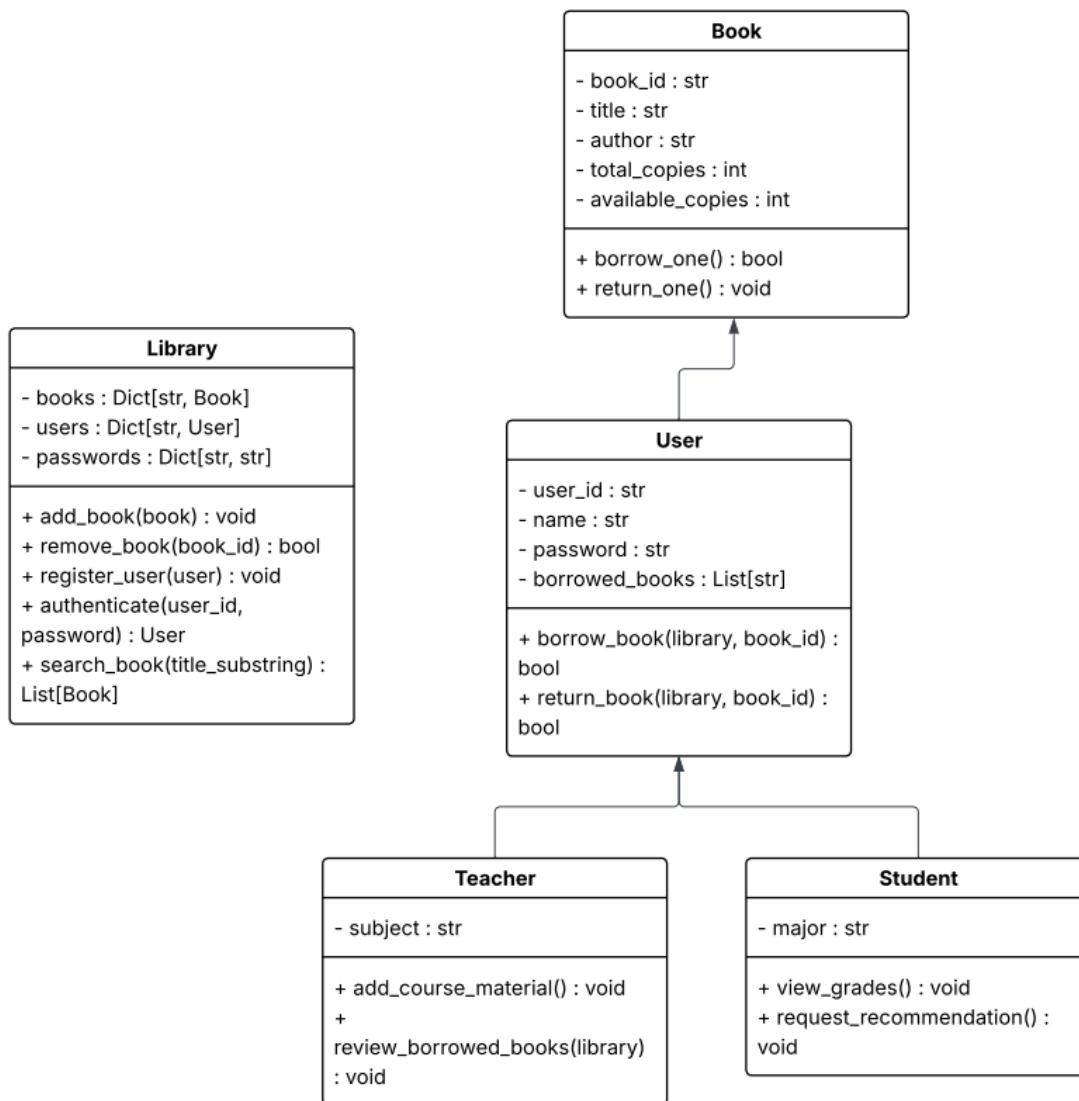
[Student:Lizzie] Viewing grades... (stub)
[Student:Reese] Recommended: Intro to Computer (stub)
[Teacher:Dr. Ada] Added materials for SE (stub)

[Teacher:Dr. Ada] Students' borrowed books:
- Reese: ['B2']
- Lizzie: ['B1']
```

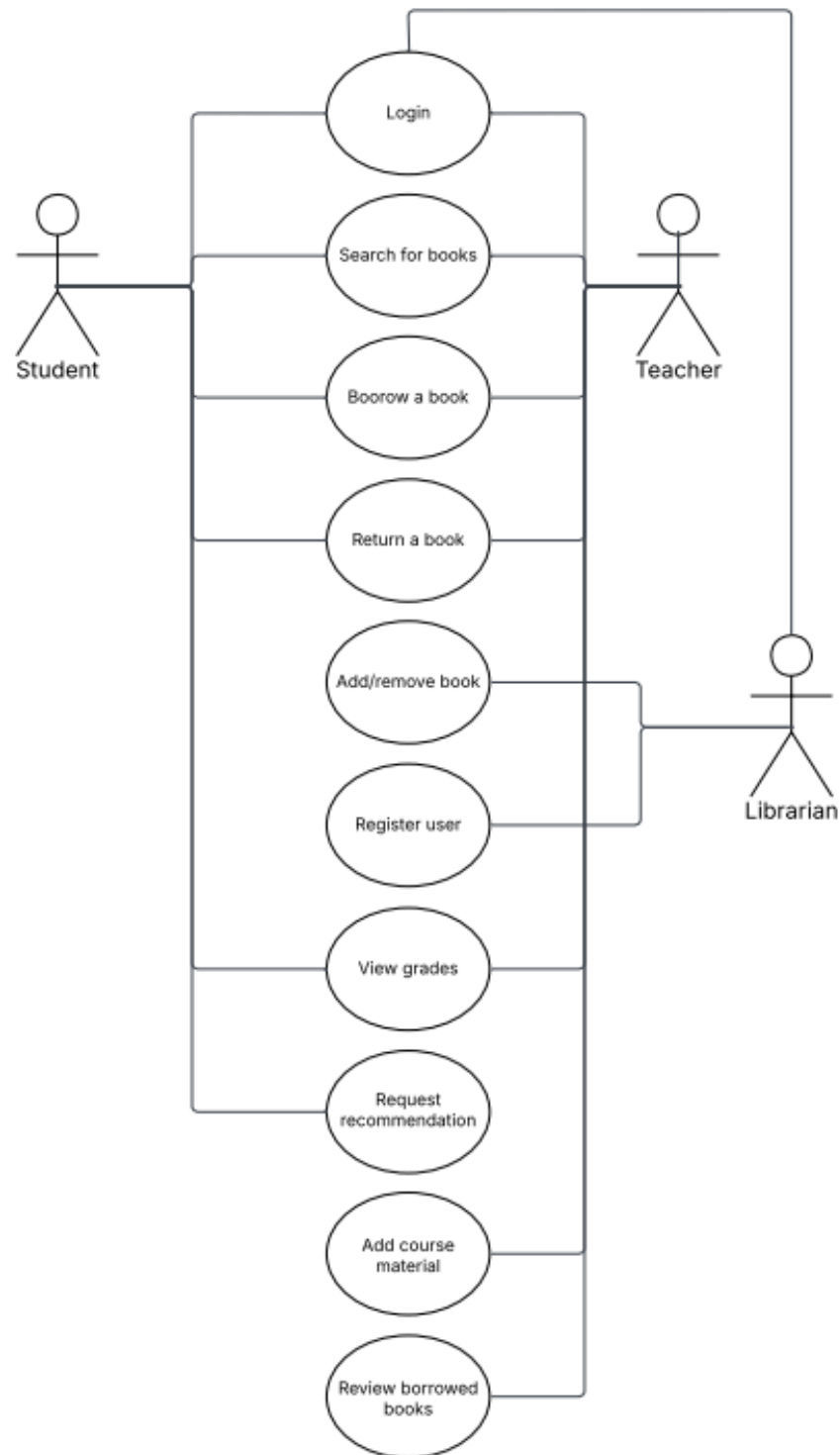
Sprint 4 was the period when I did my documenting and worked on the UML diagrams and their explanations.

UML Diagrams (Using LucidChart and PlantUML)

Class Diagram:

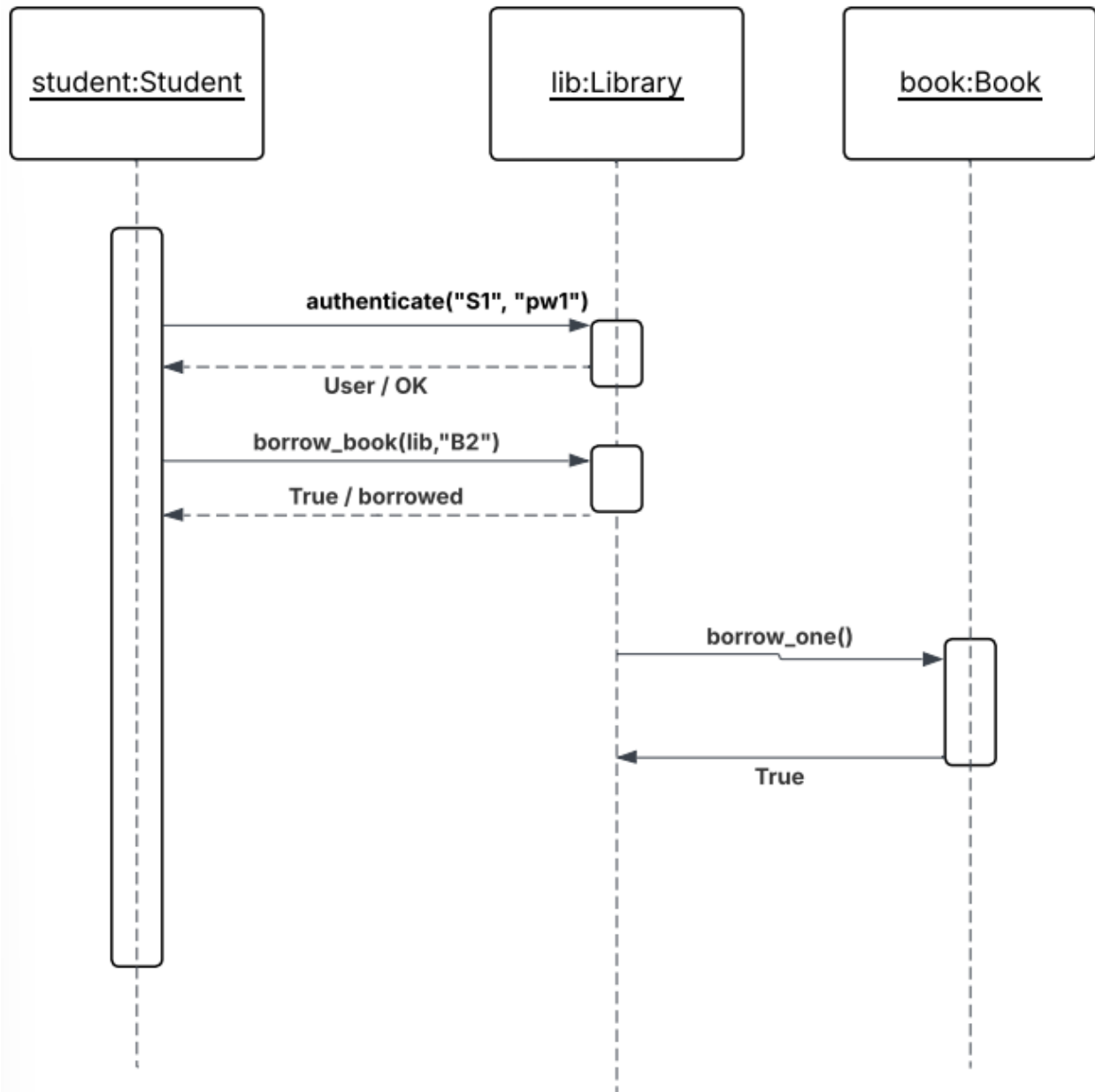


Use Case Diagram:



Sequence Diagram:

I wanted to try PlantUML to make the second sequence diagram, which is why the student and teacher diagrams look different.



Teacher reviews borrowed books

