COMP1216 - CW1 - Online Library System

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1 Introduction:

This report is split into sections based on the second part of the coursework specification. The tasks however were split among us based on the difficulty and effort required. As such Patrik-Tibor Csanyi(ptc1g20) was in charge of the class and activity diagram, as well as writing the report and its introduction. Sandor Kovacs(sk10g20) was in charge of creating the scope of the system as well as the second scenario in part 3 and the second sequence diagram in part 7. Charles Williams(cw2g19) was in charge of the first scenario in part 3 and the first sequence diagram in part 7. Zachariah Ridzuan-Allen(zra1u19) was responsible for both use case descriptions and the use case diagram.

2 Scope of the system

Need: We need students to access more resources easier.
Goals: To provide students with high quality education and online resources as well as to help lecturers.
Business case: The university will stay in competition regarding higher education and tutor students to become a more valuable part of society.
High-level operational concepts: Lecturers create reading lists and upload resources such as articles or books. Students log in and borrow the selected book if it's possible otherwise he puts the book in the reserve queue.
Stakeholders: university, lecturers, students, IT department, marketing department

3 Scenarios

Scenario I:

Purpose: Scenario that describes how a lecturer creates and manages new resources on an online staff system.
Individual: ECS Lecturer, Southampton University
Equipment: Any computer with a supported browser for the online staff system and internet access.
Scenario : A lecturer goes on their computer and looks up the online staff system and then logs into the online system by entering their username and password. The lecturer is then presented with a homepage where a list of resources which can be created is displayed. Out of the resources displayed the lecturer selects to create a new website for a module, where furthermore options of customisation for the website are displayed in order to make the website functional. After designing and creating the website, the lecturer selects the option that adds articles and then fills these in with the coursework which is due. The lecturer then repeats the process of creating a website and adding articles for two more modules. After the lecturer has finished creating the website and articles they then return to the homepage that they were greeted with upon login, where they then click on the option to create a reading list of resources. The lecturer then adds the new resources that they have created to the reading list by adding the URLs so that the new resources can easily be found. The lecturer then logs out and closes the page.

Scenario II:

Purpose: Scenario that describes the use of an online library system by a student.
Individual: ECS student, Southampton University.
Equipment: Any computer with a supported browser for the online library and internet access.
Scenario: A student goes online on a computer and searches for the online library then authenticates himself by signing in using his unique username and password. The student starts browsing and then types in the ISBN of a book. He then searches for this book. A list of information is displayed regarding this book. The student checks for the availability of this book. The borrowing of a book works according to a token-based system. The student checks whether there are active tokens. The system displays that currently there are no active tokens. The student can decide to either leave the book or to reserve the book and join the reserve queue for the book. The student joins the reserve queue. Once the book becomes available, he will receive it automatically. He goes to his reserved list and checks whether the book is part of the list. He logs out and closes the page.

4 Use case description

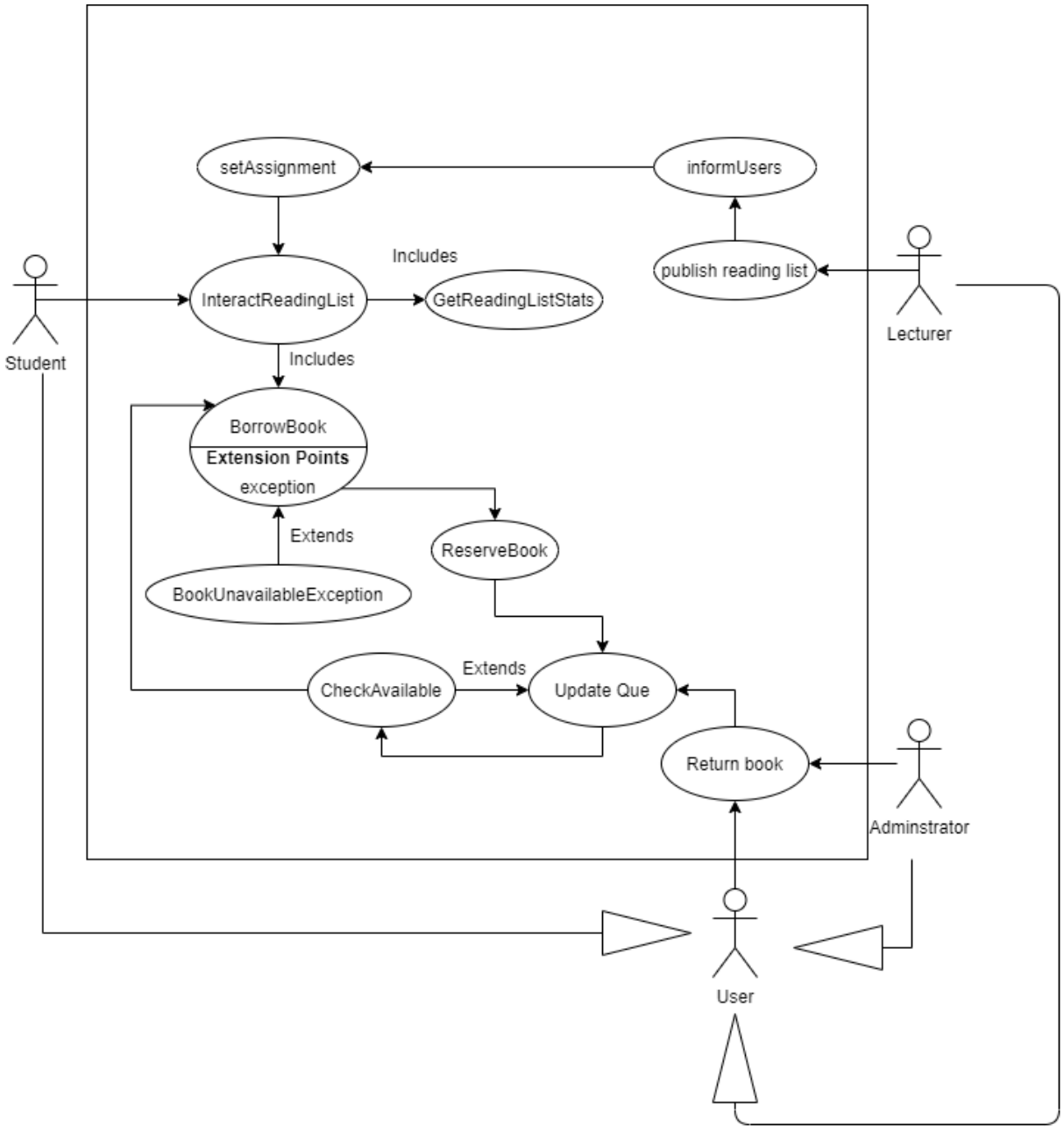
Use Case I:

Use case name	Student reserves a book
Scope	Online library
Primary actor	A Student, doing research for a paper using a reading list specified by their lecturer.
Stakeholders	- Student reserving the book - Other users in the virtual que for the book - Administrators in control of the book
Preconditions	The system must have no available tokens left to loan the book
Main success scenario	1. The student logs onto the library system with the intention of borrowing a book from the reading specified by their lecturer. 2. The student attempts to borrow a book from the reading list but the system only gives the student the option to reserve the book. 3. The student reserves the book. 4. The student exits the system having reserved the book. 5. The system is informed when a new token becomes available through the following means: a. Another user has returned the book, thus generating a new unused token. b. A system admin has revoked a token. 6. The system will then automatically generate a new token. 7. This token will be sent to the next user in the que.SSS 8. If the next user in the que is not our primary actor, then our primary actor will move up to the next position in the que. 9. Steps 5 through 9 will be repeated until the student in question is automatically sent a book token. 10. The student will have this valid token until the steps 5a or 5b occur to this token.
Post condition	The student uses the book which the system has automatically given and manually revoked.

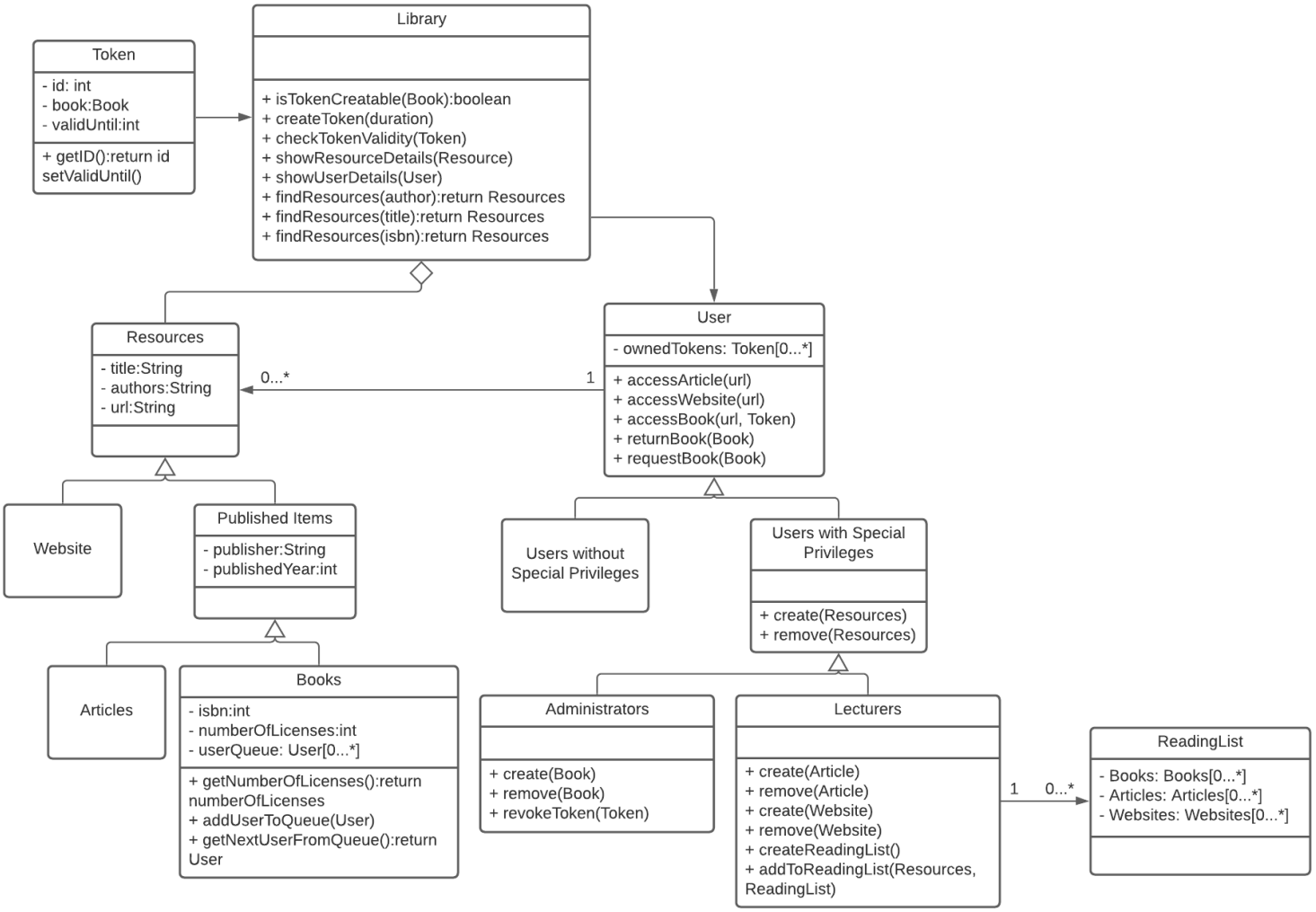
Use case II

Use case name	Lecturer monitoring students use of reading lists to improve teaching
Scope	Online library
Primary actor	A Lecturer
Stakeholders	- The lecturer - Their students - The online library administrators
Preconditions	The lecturer must have created a reading list
Main success scenario	1. The lecturer submits the reading list to the online library. 2. The online library commits the reading list to memory and informs the relevant users of the online library. 3. The lecturer then submits an assignment related to a number of resources on the new reading list. 4. The online library automatically captures data about both the resources on the list and those using the resources. 5. The lecturer can then monitor resources and users for a number of things, such as but not limited to: a. Which resources were the most helpful measured by the number of requests to borrow once and then to borrow again. b. Which students may be cheating, measured by inactivity on the reading list. c. Which resources are unnecessary or irrelevant measured by interactions with students. 6. The lecturer adjusts the list and their approach to teaching according to the data the system has given them.
Post condition	Next time the lecturer sets this assignment they will use the improved reading list.

5 Use Case Diagram

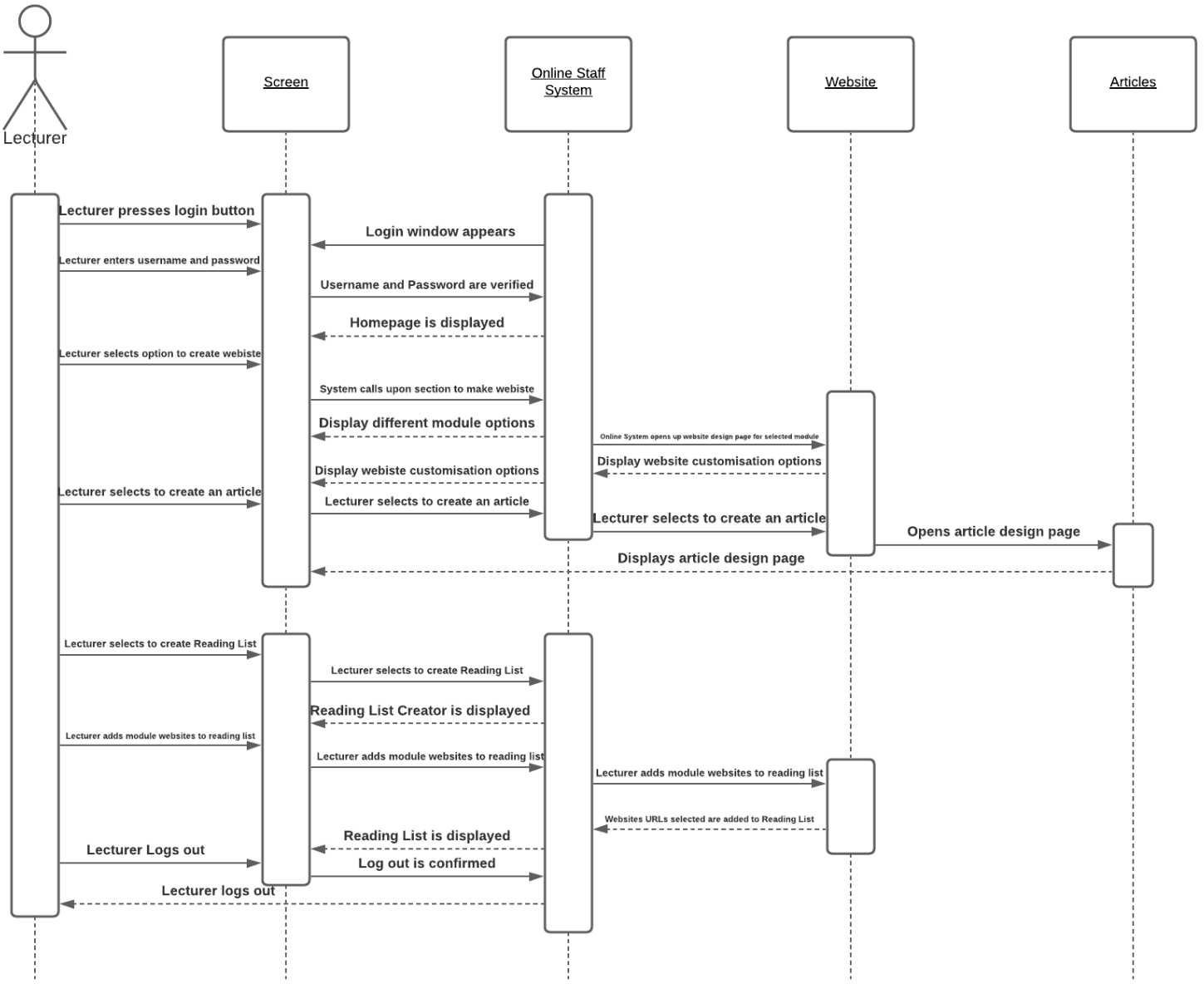


6 Class Diagram

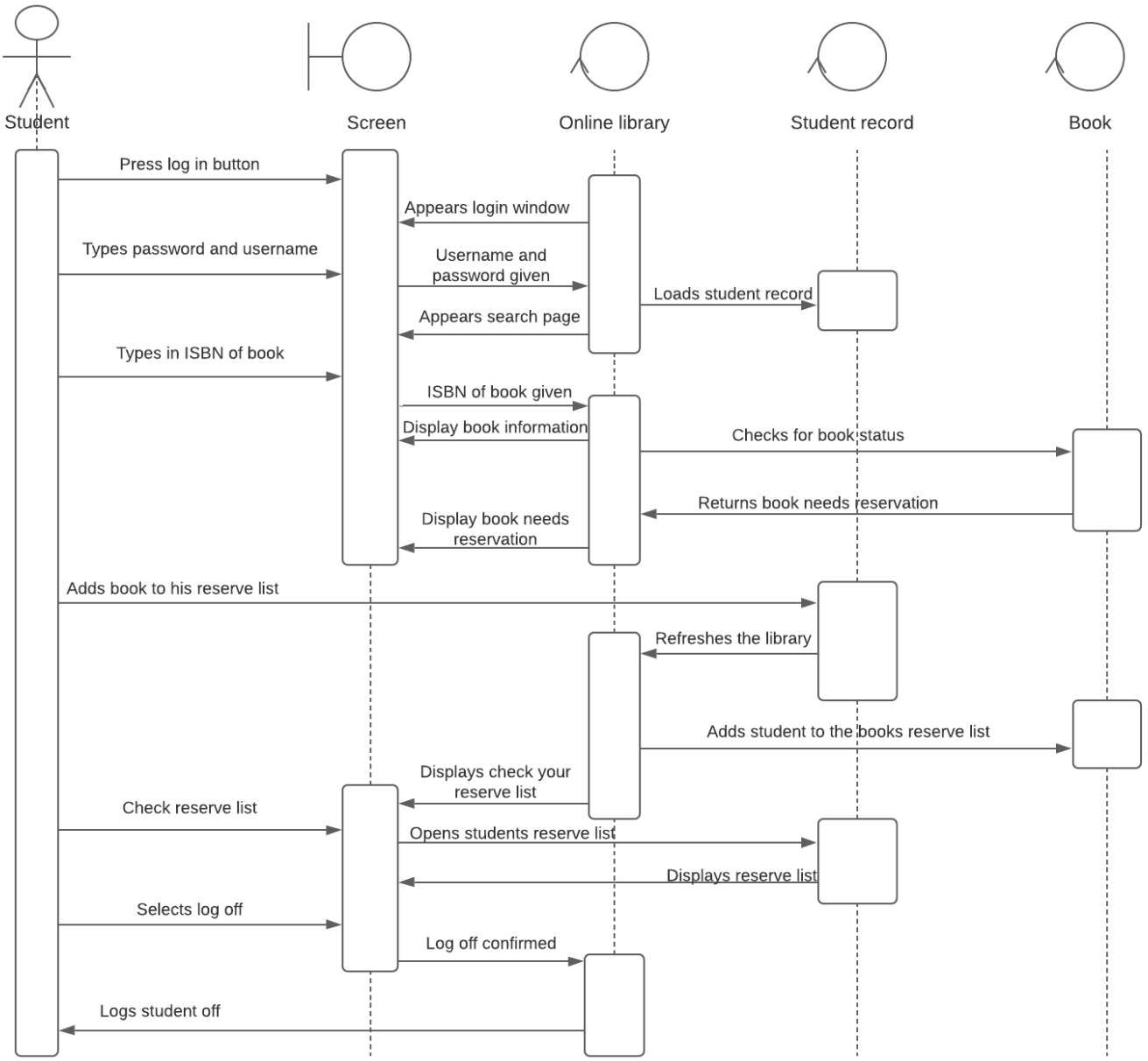


7 Sequence Diagram

Sequence Diagram I



Sequence Diagram II



8 Activity Diagram