

Cairo University

Faculty of Computers and Information



**CS251**

# **Software Engineering I**

University Library System

Software Analysis

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CS251: Phase 2 – <Team Name>  
Project: <Project Name>

## Software Analysis Specification

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### Team

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### Document Purpose and Audience

The purpose of this document is to provide a concise overview of the functionality envisioned for the library software we intend to develop. It serves as a summary of our analysis and brainstorming sessions, outlining key features and capabilities expected from the system.

The system target audience is every university member. The target audience to read this document is the project managers, developers, designers, and any other relevant team members.

### System Models

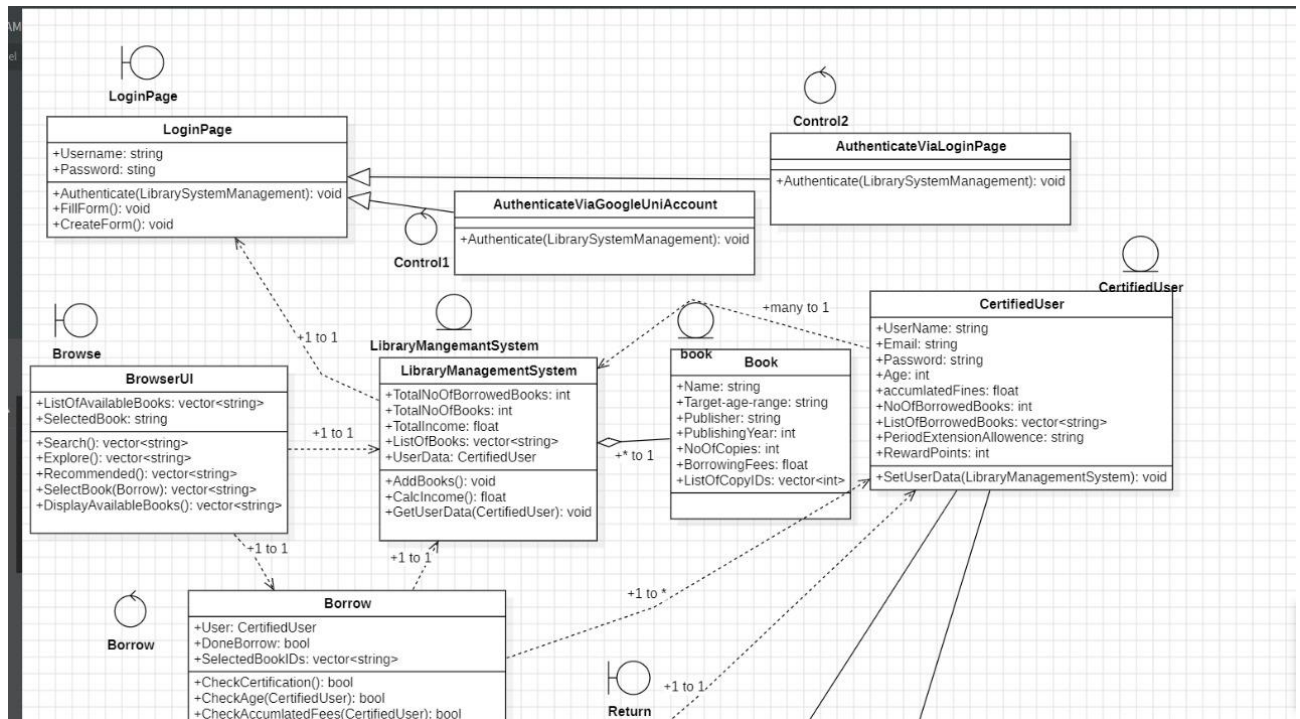


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### I. Class diagrams

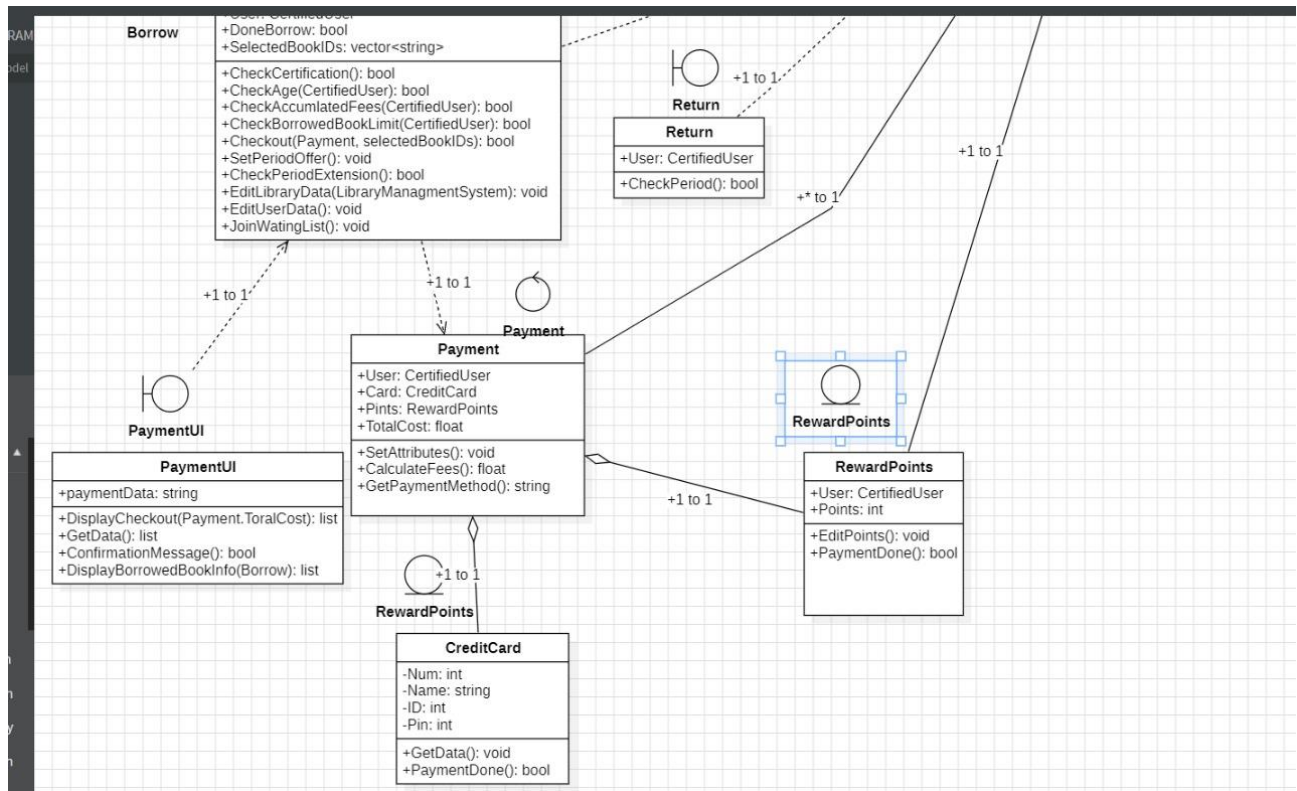




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Class ID	Class Name	Description & Responsibility
C1	LoginPage	Responsible for displaying a form that contain credentials such as username and password
C2	Authentication Via Google University Account	Responsible for authenticate user data using Google University Account
C3	Authentication Via LoginPage	Responsible for authenticate user data using system login page
C4	BrowseUI	Responsible for showing List Of Available books, Select Book to borrow,search, explore,show list of recommended books



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Class ID	Class Name	Description & Responsibility
C5	Library Management system	Responsible for storing total no of books, total no of borrowed books by users, total income, storing list of all books, user data, and add books to the library, and pass the user data if needed
C6	borrow	This class have an interface from the certifiedUser Class so we can access the user's info. During borrowing and it has some constraints check functions like accumulatedFees , Age and BorrowedBookLimit ,etc
C7	certifieduser	This class includes all the user's information that will be added during the certification process like the user's name , email , password,etc.
C8	payment	This class have instances of three classes : certifiedUser , creditCard and RewardPoints so that during the payment it will have access to the user and the credit card's info and the reward points as it is a method of payment.
C9	rewardpoints	This class have an instance of the CertifiedUser so it can edit the points of a specific user according to its info.
C10	CreditCard	This class include the credentials of the credit card that will be used during the payment method.
C11	return	Responsible for check the period of the borrowed book and inform the user to return the book

## II. Sequence diagrams

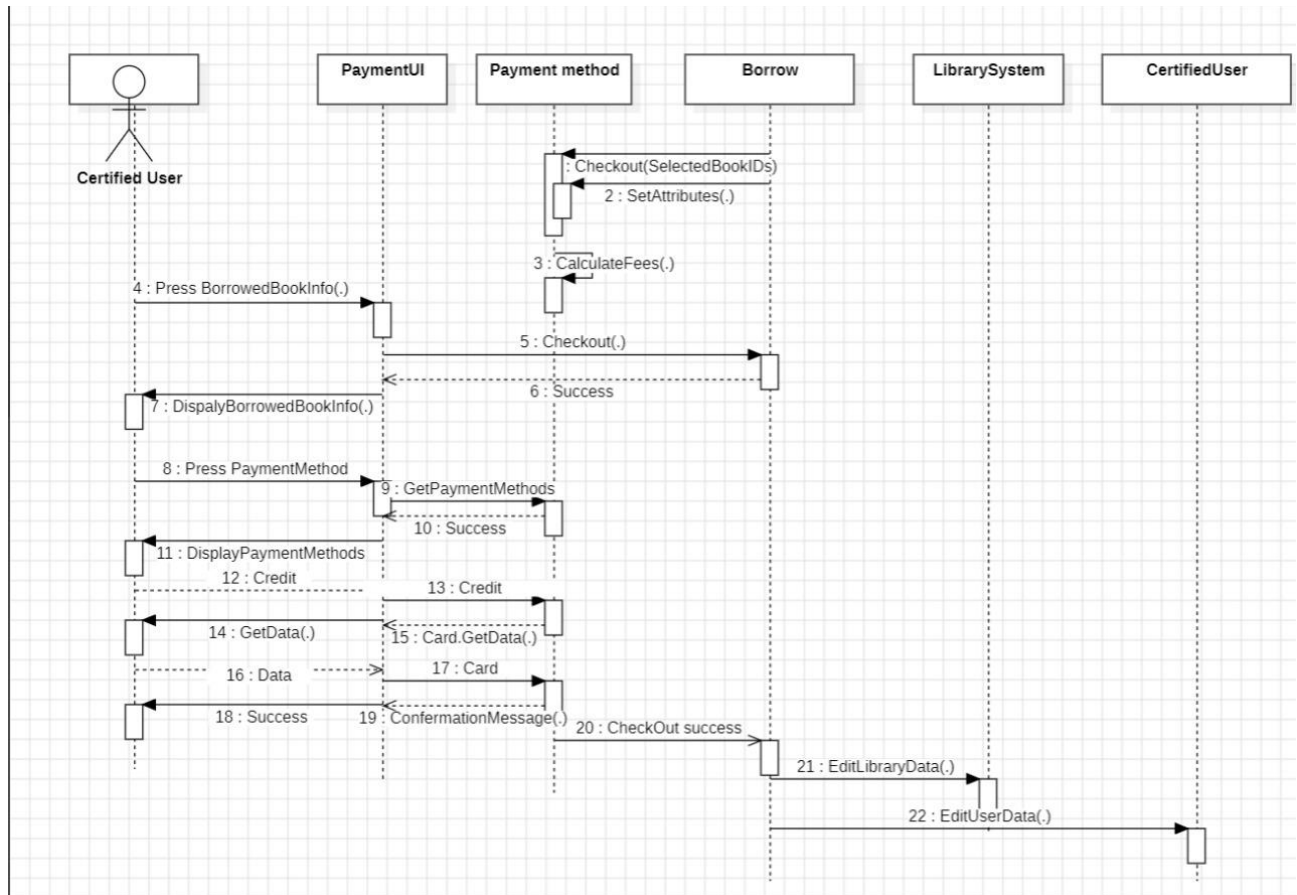
Payment Sequence Diagram:



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Payment Sequence Diagram:

Payment Sequence Diagram:



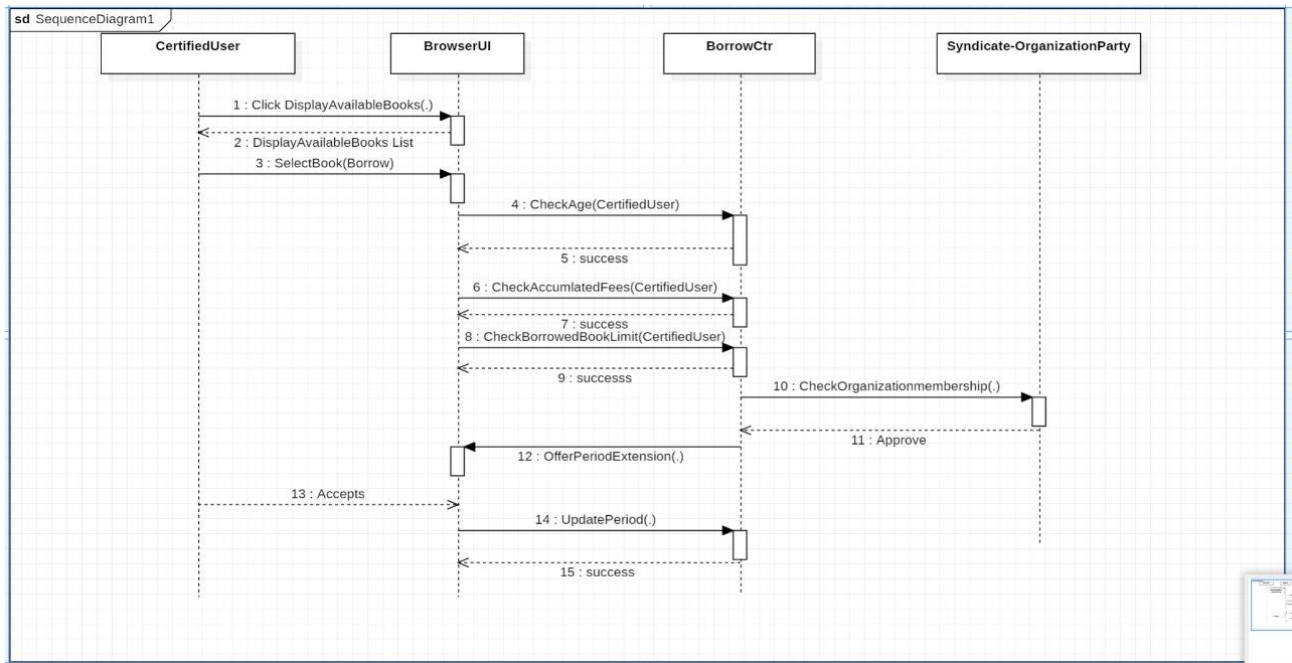


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Borrow Sequence Diagram:





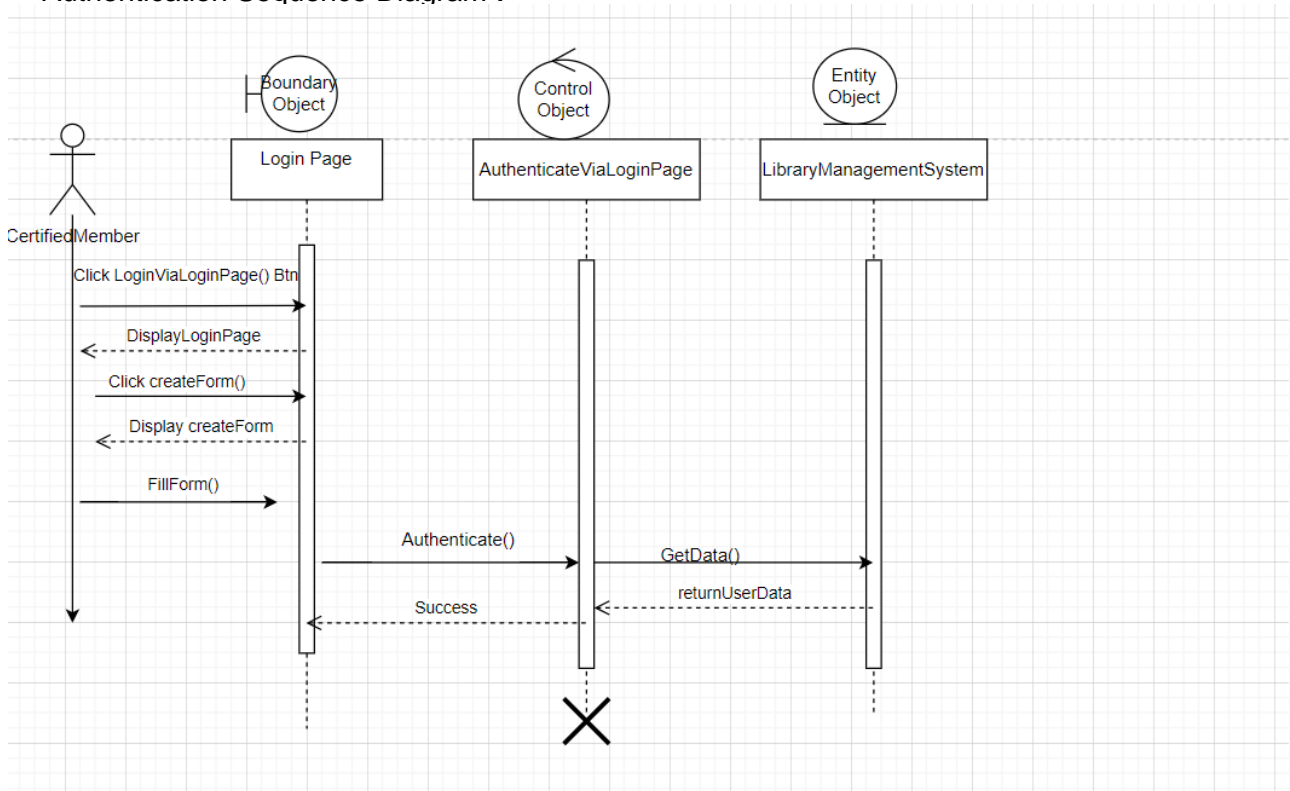


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Authentication Sequence Diagram :



## Ownership Report

Item	Owners
Authentication Sequence diagram	Mai Hassan
Borrow Sequence Diagram	Habiba Ayman
Payment Sequence Diagram	Maria Alfons

### +Policy Regarding Plagiarism:

**Students have collective ownership and responsibility of their project. Any violation of academic honesty will have severe consequences and punishment for ALL team members.**

1. تشجع الكلية على مناقشة الأفكار و تبادل المعلومات و مناقشات الطلاب حيث يعتبر هذا جوهرية لعملية تعليمية سليمة
2. ساعد زملاءك على قدر ما تستطيع و حل لهم مشاكلهم فى الكود و لكن تبادل الحلول غير مقبول و يعتبر غشاً.

CS251 – CU – FCI – Software Engineering I – 2016 – Software Analysis Specifications

Prepared by Mostafa Saad and Mohammad El-Ramly

Edited by Mohamed Samir



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3. أى حل يتشابه مع أى حل آخر بدرجة تقطع بأنهما منقولان من نفس المصدر سيعتبر أن صاحبيهما قد قاما بالغش.
4. قد توجد على النت برامج مشابهة لما نكتبه هنا أى نسخ من على النت يعتبر غشا يحاسب عليه صاحبه.
5. إذا لم تكن متأكدا أن فعلا ما يعد غشا فلتسأل المعيد أو أستاذ المادة.
6. في حالة ثبوت الغش سيأخذ الطالب سالب درجة المسألة ، و في حالة تكرار الغش سيرسب الطالب في المقرر.

## References

- <http://www.mhhe.com/engcs/compsci/pressman/graphics/Pressman5sepa/common/cs1/design.pdf>

## Authors

- Mostafa Saad and Mohammad El-Ramly (Edited by Mohamed Samir)