



Software Requirements Specification

Course Name: Software Engineering 1

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CS251: Phase 1 – Team DS_3, Books Network Software Requirements Specifications

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Document Purpose and Audience

- **The purpose of this document:**
 - To give a brief overview about the “Books Network” system.
 - To list the possible functionalities of the system and its intended initial requirements.
- **The target audience of this document:**
 - This document targets the client.
 - It will be proposed to the client to view, modify and approve it.

Introduction

Software Purpose

- **The purpose of the “Book Network” project is to:**
 - To develop a virtual reading club.
 - To encourage people to read by acting as a social media entirely for books.
 - To provide effective communication and interaction among millions of different readers by adding posts and engaging in discussions.

This idea has been successfully implemented before and a good example on it is goodreads.com website.



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Software Scope

The “Books Network” system will be designed as a social media website for readers.

It will allow each user to have his own account where he will manage his profile and his latest updates.

It will allow the user to search for existing books or add new ones and rate and review books.

It will also enable the user to add and follow other readers.

The system will contain a public books list that contains various different kinds of books with their own information.



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Definitions, acronyms, and abbreviations

| Term | Meaning |
|--------------------------------|---|
| 1. Public Books List: | <p>The public books list is the main list of books in the system. It will contain various different kinds of books with their own information.</p> <p>Users will be able to search for books in it or add new books to it.</p> |
| 2. Book Shelves: | <p>A book shelf is a customized list of books that will be in the user's profile.</p> <p>There will be two main kinds of shelves:</p> <ul style="list-style-type: none"> ○ Default shelves: <ul style="list-style-type: none"> • Finished reading: It will contain the books that the user has finished reading. • Currently reading: It will contain the books that the user is currently reading. • To-read: It will contain the books that the user wants to read in the future. ○ User specific shelves: Those will be the shelves that the user wants to add. A user can make a new shelf based on a category of books that he likes (Example: History books shelf). |
| 3. Books Category/tags: | <p>A books category/tag has the books of the same type (History, Science Fiction, Computer Science, Drama, Horror, Comedy, Romance, Mystery...)</p> |
| 4. Books Rate: | <p>Books ratings are given by users from 1 star to 5 stars. One is the lowest and five is the highest.</p> |
| 5. Books Review: | <p>Books reviews are given by users by writing their opinions about it, and giving their own evaluation and overview about it.</p> |



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|------------------------|---|
| | |
| 6. A Group: | A group is a special place where users can interact together by sharing things together. |
| 7. Competition: | Users' competition against each other for books means to see who can finish a certain book first. |



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Requirements

Functional Requirements

- **Sign up:** If the user doesn't already have an account, he can sign up to the website by a unique username, email address and password.
- **Log in:** If the user already has an account, he can log in to the website using his email address and password.
- **Edit basic information:** A user can change his basic information that is in his profile (His/her username, His/her hometown where he/she lives, his/her profile picture...).
- **Edit favorite books:** A user can change his/her favorite books by changing their rate. The user's favorite books are the books that he/she gave them a rate 5 stars.
- **Edit favorite authors:** A user can either add a new author that he/she likes or delete an author that he/she doesn't like anymore.
- **Edit favorite categories:** A user can either add a new books category that he/she likes or delete a category that he/she doesn't like anymore.
- **View books in shelves:** A user can view the books that are in any of his/her different shelves.
- **View Books by category:** A user can view the books sorted by their category.
- **Add Shelf:** A user can create a new shelf for a desired category with a desired name.
- **Edit Shelf:** A user can change a shelf by changing its category or its name.
- **Add books to shelves:** Once the user finds the book he/she wants to share thoughts about, he/she can add this book to his/her shelves (one of the three default shelves or any other specific shelves that the user has).
- **Search for books by category:** A user can search for books by its category so the search results will be all the books in the public books list that are of this category.
- **Search for books by name:** A user can search for books by its name so the search results will be all the books in the public books list that contains this name.
- **Search for books by author:** A user can search for books by its author so the search results will be all the books in the public books list that this author has written.
- **Add a new book:** If the user couldn't find a book by searching in the public books list, he/she can add it manually.



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- **Add review:** A user can review books that he/she has already read by writing his/her opinions about it and giving his/her own evaluation and overview about it.
- **Rate a book:** A user can rate books that he/she has already read. The rating ranges from 1 star up to 5 stars.
- **View reviews on books:** A user can view other users' reviews on books.
- **Like a review:** A user can like other users' reviews on books.
- **Comment on a review:** A user can comment on other users' reviews on books to give his opinion.
- **Add friends to follow their updates:** A user can add other users as friends and then he/she will be able to view, like and comment on their different activities.
- **Like friends' activities:** A user can like any of his friends' different activities.
- **Comment on friends' activities:** A user can comment on any of his friends' different activities.
- **Compete for a given book:** A user can request another user to compete with him/her for a given to see who can finish it first.
- **Accept competition request:** A user can accept the competition request on a book that another user has sent him/her.
- **Decline competition request:** A user can decline the competition request on a book that another user has sent him/her.
- **Create a group:** A user can create a group where users can interact together by sharing things together.
- **Add users to a group:** A user can add other users to his/her groups to allow them to interact and see what is in the group.
- **Join a group:** A user can apply to join a group by sending a join request to the group owner.
- **Accept join request:** A user who has a group will receive join requests from other users who wish to join the group so he can accept them to join.
- **Decline join request:** A user who has a group will receive join requests from other users who wish to join the group so he can refuse them to join.
- **Exit a group:** A user can leave a group if he/she no longer wishes to stay in it.
- **Add posts in a group:** A user can write a post in a group that he/she is a member in it, and this post will be seen by all the group members.
- **Add comments in a group:** A user can comment on posts in a group that he/she is a member of it.
- **Log out:** A user can log out of his/her account after he finishes to conclude use of system.



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Non Functional Requirements

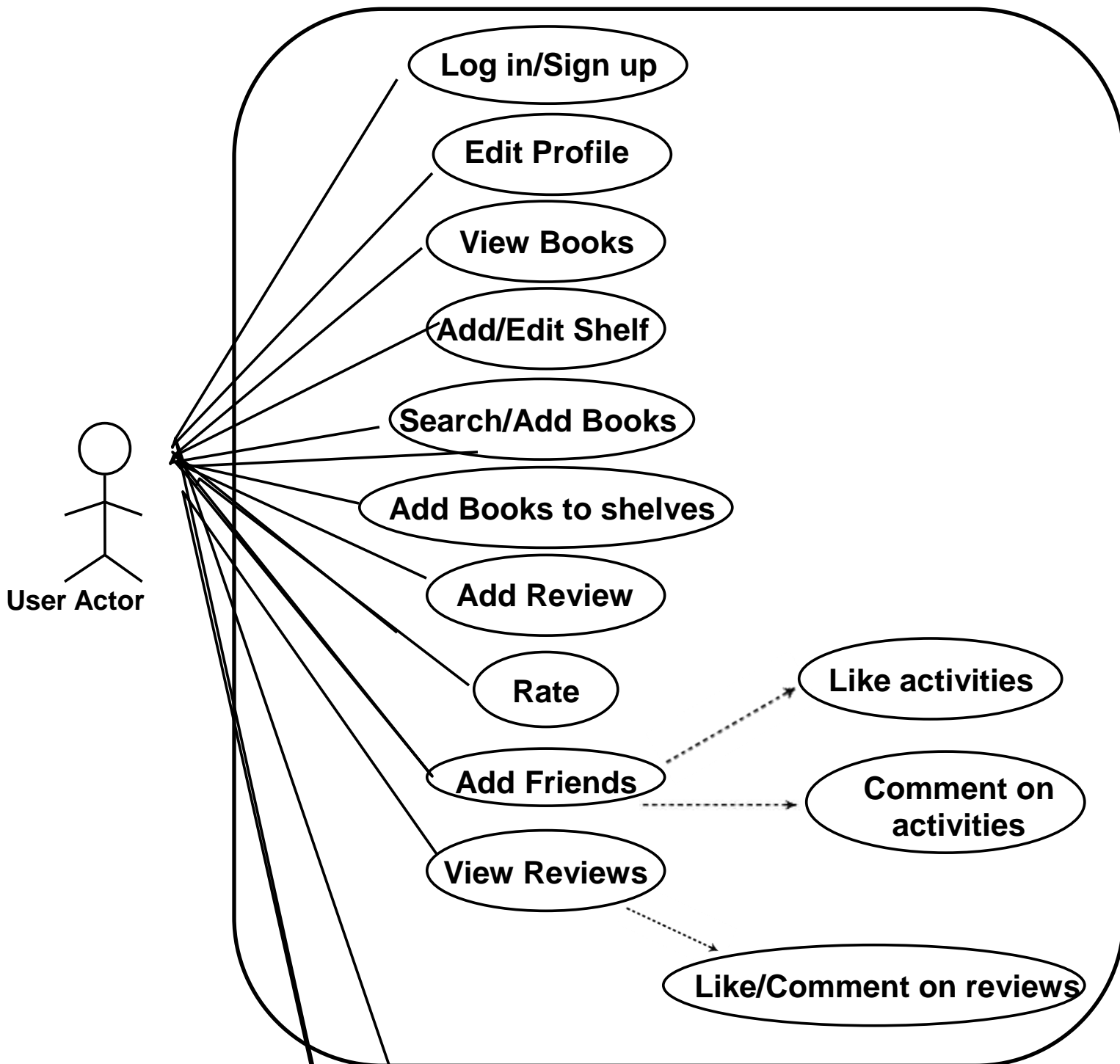
| Requirement | Details |
|--------------------|---|
| Performance | <ul style="list-style-type: none"> Log-in operation will be done within 20 seconds maximum. Search operation will be done within 30 seconds maximum. |
| Security | <ul style="list-style-type: none"> Users that are not added as friends are not allowed to see the user's activities. Users who are not members of a group are not allowed to see what members share in this group (posts, likes and comments) |
| Reliability | <p>The system must be up 99.9999% of the time.</p> <p>The average amount of time between failures should not be more than 1 hour per three months.</p> |
| Throughput | The system must handle 1,000 request per second |
| Interface | The system's interface must be user-friendly. |



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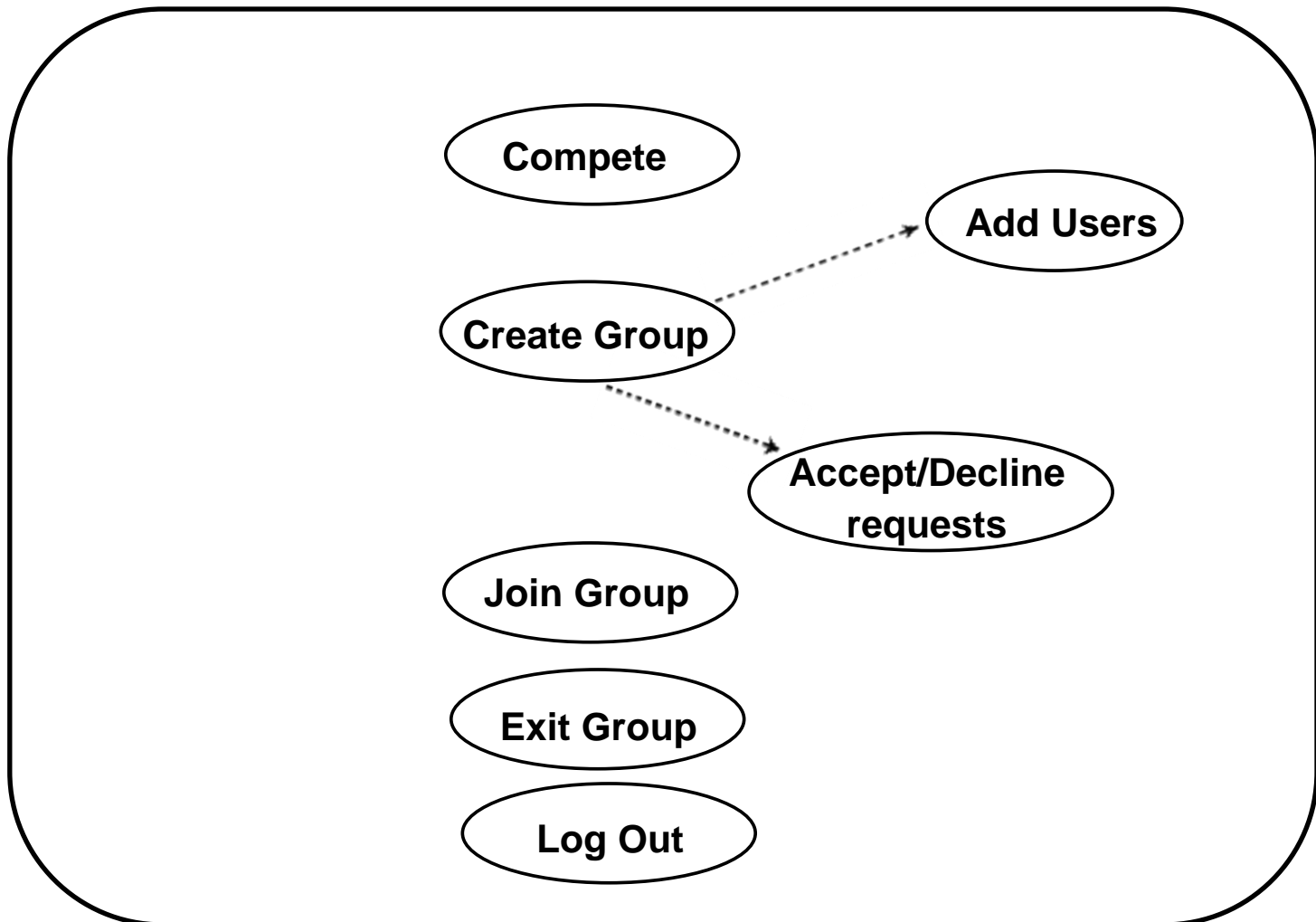
System Models

Use Case Model





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Use Case Tables

| | | |
|--------------------------|--|----------------------------------|
| Use Case ID: | UC 1 | |
| Use Case Name: | Log in | |
| Actors: | User | |
| Pre-conditions: | The user must already have an account on the system. | |
| Post-conditions: | The user will enter the system. | |
| Flow of events: | User Action | System Action |
| | 1. User enters email address and password | |
| | | 2. System Verifies the user data |
| | 3. The user will enter the system | |
| Exceptions: | <p>If the user enters a wrong password:</p> <ol style="list-style-type: none"> 1. The system will disapprove the log in 2. Message to user to re-enter password <p>If the user enters an email address that does exist on the system:</p> <ol style="list-style-type: none"> 1. The system will disapprove the log in 2. Message to user to sign up to the system. | |
| Includes: | | |
| Notes and Issues: | | |



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| | | |
|--------------------------|---|--|
| Use Case ID: | UC 2 | |
| Use Case Name: | Sign up | |
| Actors: | User | |
| Pre-conditions: | The user does not have an account on the system. | |
| Post-conditions: | The system will create an account for the user. | |
| Flow of events: | User Action | System Action |
| | 1. User enters email address and creates a password. | |
| | | 2. System creates an account for the user. |
| | 3. The user will enter the system | |
| Exceptions: | If the user enters an email address that already exists with an account: <ol style="list-style-type: none"> 1. The system will disapprove the sign up 2. Message to user to enter a valid email address | |
| Includes: | | |
| Notes and Issues: | | |



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| | | |
|--------------------------|---|---|
| Use Case ID: | UC 3 | |
| Use Case Name: | Edit Profile | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. | |
| Post-conditions: | The system will save any changes made by the user. | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on “Edit” | |
| | | 2. System asks the user to choose what to edit (basic information, favorite books, favorite authors or favorite categories) |
| | 3. The user will choose and change what he wants | |
| | | 4. The system will save the changes made by the user |
| Exceptions: | | |
| Includes: | Edit basic information: User change any of his basic information Edit favorite books: User change rate Edit favorite authors: User add a new author or delete an author. Edit favorite categories: User add a new books category or delete a category. | |
| Notes and Issues: | | |



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| | | |
|--------------------------|--|---|
| Use Case ID: | UC 4 | |
| Use Case Name: | View Books | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. | |
| Post-conditions: | The system will view the books. | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on “View Books” | |
| | | 2. System asks the user to choose how to view the books |
| | 3. The user chooses a shelf or a category | |
| | | 4. The system will display all the books in the chosen shelf or the chosen category |
| Exceptions: | | |
| Includes: | View books in shelves | |
| | View Books by category | |
| Notes and Issues: | | |



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| | | |
|--------------------------|--|---|
| Use Case ID: | UC 5 | |
| Use Case Name: | Edit Shelf | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. | |
| Post-conditions: | The system will save the changes made by the user. | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on “Edit shelves” | |
| | | 2. System displays all the user’s shelves and asks the user to choose which shelf to change |
| | 3. The user chooses a shelf | |
| | | 4. System asks the user to change the shelf’s category and/or change its name |
| | 5. User changes the category and/or the name | |
| | | 6. The system saves changes made by the user |
| Exceptions: | | |
| Includes: | | |
| Notes and Issues: | | |



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| | | |
|--------------------------|--|---|
| Use Case ID: | UC 6 | |
| Use Case Name: | Add Shelf | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. | |
| Post-conditions: | The system will add the new shelf made by the user to his/her shelves. | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on “Add a new shelf” | |
| | | 2. System asks the user to enter a category and a name |
| | 3. User enters the category and the name | |
| | | 4. The system adds the new shelf to the user’s shelves. |
| Exceptions: | | |
| Includes: | | |
| Notes and Issues: | | |



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| | | |
|-------------------------|---|---|
| Use Case ID: | UC 7 | |
| Use Case Name: | Search Books | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. | |
| Post-conditions: | The system will display all the books from the public books list that matches the search criteria. | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on “Search Books” | |
| | | 2. System asks the user to select search method (by name/author/category) |
| | 3. User selects a method | |
| | | 4. The system asks user to enter the desired name/author/category |
| | 5. User enters the desired name/author/category in the search field | |
| | | 6. System will display all the books from the public books list that matches the search criteria. |
| Exceptions: | Add a new book: If the public books list does not contain the desired book (the system displays in the search results that the book does not exist), the user can add it manually: <ol style="list-style-type: none"> 1. User clicks on “Add new book” 2. System asks user to enter the book’s information | |



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|------------------|--|
| | <p>3. User enters the book's information</p> <p>4. System saves the book in the public books list.</p> |
| Includes: | <p>After the search results are displayed, user can select a book and:</p> <p>Add book to shelf:</p> <ol style="list-style-type: none"> 1. User selects a book from the search results 2. User clicks on "Add to shelf" 3. System displays all the user's shelf and asks the user to choose one 4. User chooses a shelf 5. System saves the book to the user's chosen shelf. <p>View reviews on book:</p> <ol style="list-style-type: none"> 1. User selects "View Reviews" 2. System displays other users' reviews on books. <p>Like a review:</p> <ol style="list-style-type: none"> 1. User selects "Like this review" 2. System saves the user's like for this review. <p>Comment on a review:</p> <ol style="list-style-type: none"> 1. User selects "Comment on this review" 2. System asks user to enter his/her comment 3. User enters his/her comment 4. System saves the user's comment on this review. <p>Add review:</p> |



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| | |
|--------------------------|---|
| | <ol style="list-style-type: none">1. User selects “Add review”2. System asks user to enter his/her review3. User enters his/her review4. System saves the user’s review to the book’s reviews. <p>Rate a book:</p> <ol style="list-style-type: none">1. User selects “Add rate”2. System displays 1 to 5 and asks user to select a rate3. User select a rate4. System saves the user’s rating to the book’s ratings. |
| Notes and Issues: | |



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|-------------------------|--|---|
| Use Case ID: | UC 8 | |
| Use Case Name: | Add friends | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. | |
| Post-conditions: | The system will add the chosen users to the user's friend list | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on "Add friends" | |
| | | 2. System asks the user to enter friend's username |
| | 3. User enters a username | |
| | | 4. The system searches for the username and displays the search results |
| | 5. User select the user and click on "Add as a friend" | |
| | | 6. System add the chosen user to the user's friend list |
| Exceptions: | <p>If there is no user that exists with the given username:</p> <ol style="list-style-type: none"> 1. System message the user that this username does not exist. 2. User enter another name or click "back" to exit search | |
| Includes: | <p>Like friends' activities:</p> <ol style="list-style-type: none"> 1. User clicks on "like this activity" 2. System saves the user's like. | |



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|--------------------------|--|
| | Comment on friends' activities: 1. User selects “Comment on this activity” 2. System asks user to enter his/her comment 3. User enters his/her comment 4. System saves the user's comment on this activity. |
| Notes and Issues: | |



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| | | |
|-------------------------|--|---|
| Use Case ID: | UC 9 | |
| Use Case Name: | Compete | |
| Actors: | User | |
| Pre-conditions: | <p>The user is logged in with his account with his own profile on the system.</p> <p>The user has other users in his friend's list</p> | |
| Post-conditions: | The system will notify the chosen user that this user wants to compete with him/her on a book | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on "Compete" | |
| | | 2. System displays the user's friends and asks the user to select one of his friends |
| | 3. User selects a friend | |
| | | 4. The system asks the user to enter a book's name |
| | 5. User enters the book name | |
| | | 6. System searches for the book in the public books list and displays it |
| | 7. User click "confirm" | |
| | | 8. System notify the chosen friend that this user wants to compete with him/her on a book |
| Exceptions: | <p>If the book does not exist in the public books list:</p> <p>1. System message the user that this book does not exist</p> | |



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|--------------------------|--|
| | 2. User performs “add new book” in UC 7 |
| Includes: | |
| Notes and Issues: | User must be notified of the friend’s response (accept competition or decline competition) |



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|-------------------------|--|---|
| Use Case ID: | UC 10 | |
| Use Case Name: | Create group | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. | |
| Post-conditions: | The system will create a group that is managed by this user | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on “Create a group” | |
| | | 2. System asks the user to enter group’s name and description |
| | 3. User enters group’s name and description | |
| | | 4. The system create a group that is managed by this user |
| Exceptions: | If there is already a group with same name: 1. System gives the user an error message that this name already exists 2. User enter another name or click “back” to exit add new group | |
| Includes: | Add users to the group: 1. User clicks on “Add users to my group” 2. System saves asks the user’s to enter username. 3. User enters a username 4. System checks if this user name exists 4.1 If it exists the system adds this user to the group | |



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|--------------------------|--|
| | <p>4.2 If it does not exist System displays error message no user with this name</p> <p>Accept join request:</p> <ol style="list-style-type: none">1. If another user sends a join request the system notifies the user2. User click “Accept Request” to approve the join or User click “Decline Request” to disapprove the join3. If approved the user is added, if disapproved the user is not added. |
| Notes and Issues: | |



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| | | |
|-------------------------|--|---|
| Use Case ID: | UC 11 | |
| Use Case Name: | Join group | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. | |
| Post-conditions: | The system will notify the group manager with the user's request. | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on "Join Group" | |
| | | 2. System sends a join request to the group manager |
| | 3. If the manager approved the request | |
| | | 4. The system adds the user to group |
| Exceptions: | If the manager disapproved the request: 1. System message the user that his request was denied. | |
| Includes: | If the manager approved his request the user can: Add posts in a group: 1. User clicks on "Write a post" 2. System asks user to enter his post 3. User enters his post and press "Post" 4. System shares the post in the group Add comments to posts in a group: 1. User clicks on "Add a comment to this post" | |



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|--------------------------|---|
| | <ol style="list-style-type: none">2. System asks user to enter his comment3. User enters his comment and press “Comment”4. System adds the comment to the post. |
| Notes and Issues: | |



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|--------------------------|---|--|
| Use Case ID: | UC 12 | |
| Use Case Name: | Exit group | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. The user is a member of this group. | |
| Post-conditions: | The system will remove the user from the group | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on "Exit Group" | |
| | | 2. System removes the user from this group and doesn't allow the manager to add him again. |
| Exceptions: | | |
| Includes: | | |
| Notes and Issues: | | |



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| | | |
|--------------------------|--|---|
| Use Case ID: | UC 13 | |
| Use Case Name: | Log out | |
| Actors: | User | |
| Pre-conditions: | The user is logged in with his account with his own profile on the system. | |
| Post-conditions: | The system logs the user out of the system. | |
| Flow of events: | User Action | System Action |
| | 1. User clicks on “Log out” | |
| | | 2. System logs the user out and closes his account. |
| Exceptions: | | |
| Includes: | | |
| Notes and Issues: | | |

Ownership Report

| Item | Owners |
|---|-----------------|
| <ul style="list-style-type: none"> Document Purpose and Audience Introduction | Hussien Mohamed |
| <ul style="list-style-type: none"> Functional Requirements Use Case Tables | Yousra Mohamed |
| <ul style="list-style-type: none"> Non Functional Requirements Use Case Model | Farida Mohamed |