

Functional Requirements

1. The system must display the login interface.
 - 1.1. When a user logs in, the system must authenticate the credentials of the user.
 - 1.2. To log in, the system must require the user to enter the username/email and password.
 - 1.2.1. The email data must be a string data of text length no less than 6 characters and no more than 256 characters.
 - 1.2.2. The password data must be a string data of text length no less than 8 characters and no more than 32 characters.
 - 1.2.3. The username must be a string data of text length no less than 4 characters and no more than 32 alphanumeric characters.
 - 1.2.4. The system must authenticate the username/email and password.
 - 1.2.4.1. If the authentication fails, the system must prompt the user that the username/email and password is wrong.
 - 1.2.4.1.1. Upon five failed authentications, an email containing a link to reset password must be sent to the user to notify suspicious activity detected, and prompt the user to reset the password.
 - 1.3. If the user forgot the password, the user must click on the “Forget password?” option to regain access to the account and change the password.
 - 1.3.1. The user must enter the email of the account.
 - 1.3.1.1. The email data must be a string data of text length no less than 6 characters and no more than 256 characters.
 - 1.3.2. If the same email is found in the database, an email containing a link to reset password must be sent to the user’s email.
 - 1.3.2.1. The system must present a pop-up with the email sent message.
 - 1.3.3. Upon clicking the reset password link, the user must be redirected to the reset password page.
 - 1.3.3.1. The password data must be a string data of text length of greater than 7 characters and less than 32 characters.
 - 1.3.3.2. The password data must have at least 1 capital letter.
 - 1.3.3.3. The password data must have at least 1 special character (!@#\$%^&*).
 - 1.3.3.4. Upon successful password change, the system must present a pop-up with the password changed message.

2. The system must display the signup interface.
 - 2.1. To sign up, the system must require the user's username, email, password and DOB.
 - 2.1.1. The username must be a string data of text length no less than 4 characters and no more than 32 alphanumeric characters.
 - 2.1.1.1. If a duplicate username is found in the database, the system must prompt the user that the username has been taken.
 - 2.1.2. The email data must be a string data of text length no less than 6 characters and no more than 256 characters.
 - 2.1.2.1. The email data must be of valid format.
 - 2.1.2.2. If a duplicate email is found in the database, the system must prompt the user that the email already has an account.
 - 2.1.3. The password data must be a string data of text length no less than 8 characters and no more than 32 characters.
 - 2.1.3.1. The password data must have at least 1 capital letter.
 - 2.1.3.2. The password data must have at least 1 special character (!@#\$%^&*).
 - 2.1.4. If all requirements are met, the system must establish the account in the database.
 - 2.2. The system must send a confirmation email to the user when the account is established.
 - 2.2.1. The system must present a pop-up with the confirmation email sent message.
 - 2.2.2. The confirmation email must contain a verification link.
 - 2.2.3. Upon clicking the verification link, the user must be redirected back to the website, onto the main interface.
 - 2.2.3.1. The system must present a pop-up with the email verified message.
3. The user must be able to perform a standard book search using the book title, ISBN, author name and genre.
 - 3.1. The system must enable the user to enter the book title, ISBN, author name and genre.
 - 3.1.1. The book title, author name and genre must contain no more than 50 characters.
 - 3.1.2. The book title, author name and genre must be alphanumeric characters.
 - 3.1.3. The ISBN must contain no less than 10 characters and no more than 13 characters.
 - 3.1.4. The system must allow the user to leave no more than 3 fields blank.
 - 3.1.5. The system must display an error message if the above conditions are not satisfied.
 - 3.1.5.1. The error message must display the specific condition that was violated.

- 3.2. The system must return a list of no more than 20 relevant books, with the most relevant at the top.
 - 3.2.1. The search results must be sorted by the book's relevance.
 - 3.2.1.1. The system must perform matching based on the search data from book title, ISBN, author name and genre.
 - 3.2.2. The system must be able to filter the search results based on the book's publication date.
 - 3.2.3. The system must be able to sort the search results based on the book's popularity and based on the book's relevance to books viewed by the user.
 - 3.3. The system must display up to 5 results on each page.
 - 3.4. The system must display the book title, author and abstract of the book.
 - 3.4.1. The system must truncate book titles with more than 50 characters and display as "...".
 - 3.4.2. The system must truncate author names with more than 50 characters and display as "...".
 - 3.4.3. The system must truncate book abstracts with more than 300 characters and display as "...".
 - 3.5. The system must direct the user to the book information page when the user clicks on the book.
 - 3.6. The system must allow the user to clear the input by clicking on "Clear".
 - 3.7. The system must display an error message if no relevant books to the user's search are found.
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- 4. The user must be able to perform advanced plot searches by inputting sentence(s) or a paragraph.
 - 4.1. The user must be able to input no more than 1000 characters.
 - 4.2. The system must display no more than 20 relevant books, with the most relevant at the top.
 - 4.2.1. The search results must be sorted by the book's relevance.
 - 4.2.1.1. The system must perform matching based on the plot search data.
 - 4.2.2. The system must be able to filter the search results based on the book's publication date.
 - 4.2.3. The system must be able to sort the search results based on the book's popularity and based on the book's relevance to books viewed by the user.
 - 4.3. The system must display up to 5 results on each page.

- 4.4. The system must display the book title, author name and abstract of the book.
 - 4.4.1. The system must truncate book names with more than 50 characters and display as "...".
 - 4.4.2. The system must truncate author names with more than 50 characters and display as "...".
 - 4.4.3. The system must truncate abstract with more than 300 characters and display as "...".
- 4.5. The system must direct the user to the book information page when the user clicks on the book.
- 4.6. The system must allow the user to clear the input by clicking on "Clear".
- 4.7. The system must display an error message if no relevant results to the user's search are found.
- 5. The system must be able to display book information pages.
 - 5.1. The system must display an image of the book on the top left hand side of the book information page.
 - 5.2. The system must display the book's information beside the book's image in the following order, from top-down: book title, ISBN, author name, publisher name.
 - 5.3. The system must display the book's user rating below the publisher.
 - 5.3.1. User ratings must lie within the range of 1 to 5 stars.
 - 5.3.2. The book's user rating must be displayed as 5 gray stars when unrated.
 - 5.3.3. For books rated by the logged-in user, the given book rating must be displayed as yellow stars.
 - 5.3.4. The system must allow the logged-in user to give book ratings by clicking on the stars.
 - 5.3.5. The system must allow the logged-in user to change existing book ratings.
 - 5.4. The system must display the "Share" button below the book's user rating.
 - 5.4.1. The user must be able to share books with other users/non-users.
 - 5.4.1.1. The user must be able to share specific books.
 - 5.4.1.1.1. The system must generate a formatted text to share on other applications.
 - 5.4.1.1.1.1. The formatted text must contain the book title, author name and a hyperlink to the website.

- 5.4.1.1.1.2. The formatted text must contain no more than 200 characters.
 - 5.4.1.1.2. The system must copy the formatted text onto the user's clipboard.
 - 5.4.1.1.3. The system must present a popup with the copied to clipboard message.
 - 5.5. The system must display the book's genre followed by the abstract below the book's image.
- 6. The system must recommend books to users based on the user's book rating history.
 - 6.1. The system must display a list of 20 recommended books, with the most recommended at the top.
 - 6.1.1. The recommendations must be sorted by relevance to the user's highly rated books.
 - 6.1.1.1. The system must recommend books to users using content based filtering.
 - 6.1.2. The system must be able to filter the search results based on the book's publication date.
 - 6.1.3. The system must be able to sort the search results based on the book's popularity and based on the book's relevance to books viewed by the user.
 - 6.2. The user must have rated at least 5 books before the system starts to provide book recommendations.
 - 6.2.1. If the user has not rated at least 5 books, the recommendation page must display a message and inform the user the number of books that need to be rated.
 - 6.3. The system must display up to 5 results on each page.
 - 6.4. The system must display the recommended book's title, author and abstract.
 - 6.4.1. The system will truncate all book titles more than 50 characters and display as "...".
 - 6.4.2. The system must truncate author names with more than 50 characters and display as "...".
 - 6.4.3. The system must truncate book abstracts with more than 300 characters and display as "...".
 - 6.5. The system must direct the user to the book information page when the user clicks on the book.

Non - Functional requirements

1. Performance

- a. The interface must be displayed within 1 minute.
- b. The authentication of users must complete within 2 minutes.
- c. The system must return results within 1 minute for standard search.
- d. The system must return results within 5 minutes for advanced search.
- e. The verification email must be sent within 1 minute.

2. Usability

- a. The language must be displayed in accordance to the user's preference.
- b. Popup messages and formatted text generated must be in the language according to the user's preference.
- c. Light/dark mode must be displayed in accordance to the user's preference.
- d. The remember me function must remember the credentials of the user to prevent repeated entry of login details.

3. Reliability

- a. The application must sustain a maximum traffic load of 20 users.
- b. The system must return the same list of results in the same order for an identically given set of search inputs.

4. Security

- a. The user's account details must not be shared to third-party companies.
- b. The user's website usage history must not be shared to third-party companies.
- c. Users must receive notification of password changes via email.
- d. Passwords must never be viewable at the point of entry or at any other time.
- e. The system must require the user to pass the CAPTCHA test when signing up to prevent overload of the database.

5. Supportability

- a. The website must provide a similar if not identical user experience when visited on different devices (e.g. desktop, mobile).