C++ Programming
Online Book Reader Project

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Online Book Reader Project

- **Functional** Requirements
  - In this system, there are 2 users who could login/sign up
    - The **Admin User** and the **Customer User**
  - The admin mainly for now **just adds books** to system
  - The user can read 1 book at a time, but have history of his sessions
    - During a session, the user can browse the book pages or end the session
  - For simplicity, no parallel sessions are requested

- **Non-Functional** Requirements [FYI]
  - **Usability**: The system is understandable, usable and compatible with c
  - Security, reliability, performance, maintainability & scalability

Specs: For simplicity

- The admin users are already added to the memory (database)
  - So no sign up for the admins
- You can also add initially some books (but admin can add books)
- You can also add initially some customers (but admin can add users)
- Avoid spaces in the inputs. In general, assume the user is behaving properly

Specs: Access

- Standard access
- The customer can do these 4 functionalities

```
Menu:
        1: Login
        2: Sign Up

Enter number in range 1 - 2: 2
Enter user name (No spaces): belal
Enter password (no spaces): 123
Enter name (no spaces): belal_mostafa
Enter email (no spaces): belal@gmail.com


Hello belal_mostafa | User View

Menu:
        1: View Profile
        2: List & Select from My Reading History
        3: List & Select from Available Books
        4: Logout

Enter number in range 1 - 4:
```

Specs: User

- The user can view his profile, which lists basic information

```
Hello belal_mostafa | User View

Menu:
        1: View Profile
        2: List & Select from My Reading History
        3: List & Select from Available Books
        4: Logout

Enter number in range 1 - 4: 1

Name: belal
Email: belal@gmail.com
User name: belal
```

Specs: User

- We can list the books and select one of them
- Once you select a book, a session is created for you for this book.
  - Listing its total pages
  - Where are you now (1 / 5)
  - Navigation (next and previous)
  - Stop reading
    - Remains in the sessions

```
Menu:
        1: View Profile
        2: List & Select from My Reading History
        3: List & Select from Available Books
        4: Logout

Enter number in range 1 - 4: 3

Our current book collection:
        1 C++ how to program
        2 Intro to algo
        3 Data Structures in C++

Which book to read?:
Enter number in range 1 - 3: 1
Current Page: 1/5
A C++

Menu:
        1: Next Page
        2: Previous Page
        3: Stop Reading
```

Specs: User

- We can navigate the book
- Observe, we stopped at page 3

```
Enter number in range 1 - 3: 1
Current Page: 2/5
B C++

Menu:
        1: Next Page
        2: Previous Page
        3: Stop Reading

Enter number in range 1 - 3: 1
Current Page: 3/5
C C++

Menu:
        1: Next Page
        2: Previous Page
        3: Stop Reading

Enter number in range 1 - 3: 1
Current Page: 4/5
D C++

Menu:
        1: Next Page
        2: Previous Page
        3: Stop Reading

Enter number in range 1 - 3: 2
Current Page: 3/5
C C++

Menu:
        1: Next Page
        2: Previous Page
        3: Stop Reading

Enter number in range 1 - 3: 3
```

Specs: User

- We can view opened session and decide to navigate from where we stopped
- The user can have multiple opened sessions of the same book
  - E.g. 3 entries for the C++ book
- If the user logged out then logged in, she can see the last sessions

```
Menu:
        1: View Profile
        2: List & Select from My Reading History
        3: List & Select from Available Books
        4: Logout

Enter number in range 1 - 4: 2
1: C++ how to program Page: 3/5 - 2021-12-19 10:24:59

Which session to open?:
Enter number in range 1 - 1: 1
Current Page: 3/5
C C++

Menu:
        1: Next Page
        2: Previous Page
        3: Stop Reading
```

Specs: Admin

- The admin can login and add books as in the screen
- We may have several admins
- If the admin logout, then normal user logged in, the new user should see the recently added books

```
Menu:
        1: Login
        2: Sign Up

Enter number in range 1 - 2: 1
Enter user name (no spaces): mostafa
Enter password (no spaces): 111


Hello Mostafa Saad Ibrahim | Admin View

Menu:
        1: View Profile
        2: Add Book
        3: Logout

Enter number in range 1 - 3: 2
Enter ISBN: 1245345345
Enter Title: DesignPatterns
Enter Author Name: MostafaSaad
Enter How many pages: 4
Enter page # 1: pg1
Enter page # 2: pg2
Enter page # 3: helloworld
Enter page # 4: singltonpattern
```

Design

- Overall requested features are limited
- Keep things simple and focus on the design as possible
- Assume no parallel login session. Only **one run** for the program
- Draw the best design before coding
- Code it
- Update your design with new things you found during coding
  - Ask yourself, why did I miss these points?
- Read my code and compare

Optional features

- You can think how to make it a bigger program or more complex one
- You can stop at what we did already.
- Here are some thoughts
- Admin:
  - Must activate a new sign-up before the user uses the system
  - Edit/Delete/Search books
- Customer
  - Clear all the current sessions
- Design
  - Read from files
  - Parallel access sessions
  - Logging features: e.g. which admin approved a user or added a book
- No support from me in these features.

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."