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1. Introduction

The **Book Recommendation Console Application** is designed to help users find books based on their preferences. The application will allow users to input criteria such as genre, author, and rating, and it will provide a list of books that match those preferences. This project aims to create a simple but effective book recommendation system using C++, helping users find books more easily and intuitively.

With the growing number of books available on various platforms, it can be overwhelming for readers to choose the right one. This application aims to bridge that gap by offering personalized recommendations, streamlining the process of discovering new books.

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2. Problem Statement

The vast selection of books available today makes it difficult for readers to find new titles that align with their tastes and preferences. While there are numerous ways to explore books, it often involves browsing countless lists, reviews, or platforms without clear guidance. A lack of a **personalized recommendation system** results in wasted time and missed opportunities to explore relevant content.

The **Book Recommendation Console Application** will solve this problem by providing an easy-to-use interface where users can input their preferences (such as genre or author) and receive tailored recommendations based on their selections.

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3. Project Objectives

The key objectives of the **Book Recommendation Console Application** in C++ are:

- **Personalized Recommendations**: Offer book suggestions based on the user's genre, author, or keyword preferences.
- **Filtering System**: Allow users to filter books by multiple criteria, such as genre, author, or rating.
- **Console Interface**: Create an intuitive console interface for interacting with the system.
- **Efficiency**: Provide quick book recommendations that match the user's input.
- **Optional Features**: Enable users to save their preferences for future use.

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4. Preliminary Solution

The solution to the problem will involve creating a **Console Application in C++** that allows users to:

- Input their preferences such as genre, author, or keywords.
- Receive a list of recommended books matching those preferences.
- View the book details (title, author, description, rating) for each recommended book.
- Filter results by multiple criteria (e.g., genre, author, rating).
- Optionally, save user preferences for future interactions.

We will use **C++ classes** to represent books and handle user inputs. Books will be stored in an **array** or **vector**, and filtering will be implemented using **loops and conditionals**.

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5. Project Scope

This project will focus on the following areas:

- **Core Functionality**: A simple user interface to receive input and display recommendations.
- **Data Representation**: A `Book` class containing attributes like title, author, genre, description, and rating.
- **User Input**: The system will accept user preferences (e.g., genre, author) through the console.
- **Recommendation Logic**: Books will be filtered based on user input and presented accordingly.
- **Optional Features**: Saving user preferences for future sessions and allowing more complex filters (e.g., by rating, year of publication).

Exclusions:

- The application will not use complex machine learning-based recommendation algorithms. It will use simple matching based on user inputs.
- There will be no graphical user interface (GUI); the application will operate entirely through the console.

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6. Weekly Work Breakdown

Week	Milestones/Goals	Tasks/Activities	Expected Outcomes
Week 1	**Project Planning & Initial Setup**	- Define project scope and requirements. - Set up the development environment (IDE, libraries, etc.). - Design the book data structure (`Book` class). - Populate initial list of books for testing.	- Defined project goals and scope. - Development environment set up. - Book data structure (`Book` class) implemented and

			sample books populated.
Week 2	**Data Modeling & User Input Handling**	- Implement `Book` class to hold attributes (title, author, genre, description, rating). - Handle user input for genre, author, and keyword preferences. - Display basic book information in the console.	- `Book` class with essential attributes implemented. - User input for genre and author handling. - Basic book display functionality working.
Week 3	**Filtering & Recommendation Logic**	- Implement filtering logic based on user input (genre, author, etc.). - Develop recommendation system to match user preferences. - Improve user interaction with multiple filter options.	- Filter logic for user preferences working. - Recommendation system returning relevant books. - Enhanced user interaction with multi-criteria filtering.

Week 4	**Advanced Features, Testing & Final Refinement**	- Implement saving user preferences (optional). - Handle advanced filters (rating, publication year). - Test the application for bugs and edge case Finalize documentation and user guide. - Polish user experience.	- Optional features implemented (saving preferences, advanced filters). - Fully functional application with error handling. - Final documentation and user guide completed. - Polished user interface and experience.

7. Conclusion

The **Book Recommendation Console Application** in C++ will provide a solution for readers looking to find books that align with their tastes. By allowing users to filter books by genre, author, and rating, the application will streamline the book discovery process, making it easier for users to explore relevant titles. By following the planned timeline and completing the outlined tasks, the project will be fully functional by the end of Week 4, with all necessary features in place.

Once the application is complete, it will serve as an intuitive tool for book discovery, and can be further enhanced with additional features, such as saving book preferences or implementing a more sophisticated recommendation system. This application will provide both a