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Assignment 03: Group Project Feature & Performance Report

We have implemented the Library Desktop App as a graphical interface application that allows you to search through records imported from a CSV file. From these records it will display each book's ID, title, author(s), ISBN, publication year, and average rating. Our application satisfies the following requirements:

- Import records from CSV file
- Search by ID or ISBN
- Sort by Author or Publication Year (Ascending or Descending order)
- Launch with the top 10 records on screen
- Two version options to be implemented:
    - ArrayList using binary search
    - LinkedList using linear search
- A performance testing mode to display how long the search took for each implementation.

In addition to these requirements, we have made it so that you can sort by any of the implemented columns. Several quality of life features have been added to improve the user experience:

- Realtime search while typing, which is disabled when engaging the performance test
- Columns can be rearranged thanks to the JTable implementation
- Dialog feedback when the search has failed
- When typing a query into the search field, the "Enter" key will engage the search in addition to clicking the Search button.
- Book icon added to distinguish the application

Detailed below is our findings for the performance of each implementation. We found the ArrayList (binary search) to have significant improvements over the linear search method, and recommend implementation of this version.

AppVersion	500 Records by ID	500 Records by ISBN	1000 Records by ID	1000 Records by ISBN
ArrayList	238000ns	157600ns	6200ns	188000ns
LinkedList	247900ns	226400ns	948600ns	737800ns