Project Title: Library Management System - Book Record Tracker

In this project, you will implement a list structure that represents a collection of **Book records** and perform various operations on these records. The inputs for the project will be a text file (books.txt). Each line in this file will contain a book record with the following details:

- **BookID**
- **Title**
- **Author**
- **Category**
- **Published Year**
- **ISBN**

You will manage the records using an **ArrayList** and incorporate a **TableView** to display information in a user-friendly manner. Additionally, you will implement functionality to read from and write to text files.

Requirements:

1. **File Handling:**
    - Implement functionality to read data from a text file (books.txt) and write data to a text file (updatedBooks.txt).
    - A sample structure of the file (books.txt) is provided below on the last page. You need to generate a file with no fewer than 30 books based on this structure.
2. **List Structure:**
    - Use **ArrayList** to store and manage the book records.
3. **Graphical User Interface (GUI):**
    - Create a GUI using **JavaFX** (**Scene Builder is not allowed in this course**).

- Implement the following features in the GUI:
  - **A file chooser** to select the book file (books.txt) and load the data into the **ArrayList**.
  - An option to **insert a new book record** into the ArrayList.
  - An option to **delete a book record** from the ArrayList using the **BookID**.
  - An option to **search for a specific book** by **BookID** or **Title**.
  - An option to **display statistics** for the books, such as:
    - Number of books by category.
    - Number of books by author.
    - Number of books published in specific year.
    - The year with the maximum number of books published, along with the count of books published in that year.
    - The year with the minimum number of books published, along with the count of books published in that year.
    - The author with the maximum number of books published, along with the titles of those books.
    - The author with the minimum number of books published, along with the titles of those books.
  - An option to check if the author is still active. An active author is defined as one who has published a book within the last 5 years.
  - An option to **save the updated data** to the **updatedBooks.txt** file.

4. **Table View:**
   - Use **TableView** to display the book records in a user-friendly format, including columns for **BookID**, **Title**, **Author**, **Category**, **Published Year**, and **ISBN**.

Additional Features :

- Implement sorting capabilities, such as sorting by **Title**, **Author**, or **Published Year**.
- Allow users to **edit** book records (such as changing the title or author).
- Create a **search function** that allows searching for books by keywords in the **Title** or **Author** fields.

A sample structure of the file (books.txt)

BookID, Title, Author, Category, Published Year, ISBN

001, Java Programming Basics, John Doe, Java, 2020, 123-4567890123

002, Advanced Security Concepts, Jane Smith, Security, 2021, 987-6543210987

003, Learn Java in 24 Hours, Alice Johnson, Java, 2019, 345-6789012345

004, Ethical Hacking for All, Bob Brown, Security, 2022, 876-5432109876

Please note the Followings:

I. Your application should have all functionalities working properly.

II. There must be adequate documentation and comments in the code (e.g., functions, loops, etc.).

III. Your code should follow coding conventions (e.g., spacing, indentation, etc.) and guidelines (**Remember COMP2311**).

IV. This is an **individual Project**. Disciplinary action will be taken against those who **cheat**. Additionally, the use of **AI tools** for generating solutions or **copying from websites** is strictly prohibited. Students found in violation of these policies will face severe consequences. It is crucial to ensure that all work submitted is **your own** and adheres to the **guidelines provided for this project**.

V. Please submit your Java files (java) and corresponding test text files (txt) via the ITC by Saturday, 01/ 03/2025, at 11:00 PM. Late submissions will not be accepted under any circumstances.

Good Luck