Assignment Overview

This assignment focuses on the design, implementation and testing of a Python program which uses file processing, lists and strings to solve the problem described below.

Assignment Specifications

The New York Times newspaper has published "best seller" lists since 1942. Book sales are tracked nationwide, leading to a list of those books which have recently sold the most copies.

You will design, implement and test a program which allows the user to search a subset of the books which have appeared in the New York Times best seller lists. For simplicity, the data set will only contain those books which have reached #1 on either of two lists (fiction and nonfiction) since 1942.

The file named bestsellers.txt contains the data set. Each line of the file contains the information for a separate book, which includes: title, author, publisher, date it first reached #1 on one of the best seller lists, and category (fiction or nonfiction). There is a tab character between fields.

The program will input the data set and construct a list of books. If the list of books cannot be constructed (e.g., file not found), the program will display an appropriate error message and halt.

After constructing the list of books, the program will display a line of options and allow the user to search for books which meet certain criteria. The menu options should include the following:

a) **Display all books in a year**: Prompt the user for a year then display all books which reached the #1 spot in that particular year

b) **Search for an author**: Prompt the user for a string, then display all books whose author's name contains that string (case insensitive). For example, if the user enters "ST", display all books whose author's name contains (or matches) the string "ST", "St", "sT" or "st".

c) **Search for a title**: Prompt the user for a string, then display all books whose title contains that string (case insensitive). For example, if the user enters "secret", three books are found: "The Secret of Santa Vittoria" by Robert Crichton, "The Secret Pilgrim" by John le Carré, and "Harry Potter and the Chamber of Secrets".

d) **Search for a publisher**: Prompt the user for a string, then display all books whose publisher's name contains that string (case insensitive).

e) **Quit**: Exit from the module.

Assignment Deliverables

The deliverable for this assignment is the following file:

bestSellers.py – the source code for your Python program

Be sure to use the specified file name and submit it for grading via the **turnin** system before the project deadline.

Assignment Notes

1. Your program should comprise the following functionalities: open and parse input files into a database, display a user prompt and return user choice, perform database search, and format and display search results. All these functionalities should be invoked appropriately by one function called "query" which accepts one single argument that is the name of the input file.

2. You may use lists and tuples in your program, but you may not use other collections (such as a dictionary or map).

3. Be sure to display the retrieval results in a "reasonably readable" manner.

4. If no book is found for a particular search, your program will display an appropriate message (rather than simply displaying nothing).

5. Your program cannot prompt the user for any other inputs.

6. Your program will handle erroneous user inputs. If there are any problems with a particular user input, your program will display the menu and allow the user to select another option.

7. You must allow partial match of author/title/publisher names in a case insensitive manner. E.g., a search term "house" will match "Random House" in a publisher search.

Sample Output:

```
*** search by year [1], author [2], title [3], publisher [4], or quit [0]: 5
choice not understood
*** search by year [1], author [2], title [3], publisher [4], or quit [0]: 1
enter desired year: 1951
5  records found in database
```

title	author	publisher	year	category
From Here to Eternity	James Jones	Scribner's	3/25/1951	Fiction
Joy Street	Francis Parkinson Keyes	Messner	1/14/1951	Fiction
The Caine Mutiny	Herman Wouk	Doubleday	8/12/1951	Fiction
The Sea Around Us	Rachel Carson	Oxford University Press	9/9/1951	Nonfiction
Washington Confidential	Jack Lait	Crown	4/1/1951	Nonfiction

```
*** search by year [1], author [2], title [3], publisher [4], or quit [0]: 1
enter desired year: 1950
13  records found in database
```

title	author	publisher	year	category
Across the River and Into the Trees	Ernest Hemingway	Scribner's	10/15/1950	Fiction
The Cardinal	Henry Morton Robinson	Simon & Schuster	4/30/1950	Fiction
The Disenchanted	Budd Schulberg	Random House	12/3/1950	Fiction
The Parasites	Daphne du Maurier	Doubleday	2/19/1950	Fiction
The Wall	John Hersey	Knopf	3/26/1950	Fiction
Courtroom	Quentin Reynolds	Farrar, Straus	8/27/1950	Nonfiction
Kon-Tiki	Thor Heyerdahl	Rand McNally	10/8/1950	Nonfiction
Look Younger, Live Longer	Gayelord Hauser	Farrar, Straus	10/15/1950	Nonfiction
Roosevelt In Retrospect	John Gunther	Harper	7/9/1950	Nonfiction
The Little Princesses	Marion Crawford	Harcourt	9/3/1950	Nonfiction
The Mature Mind	Harry Overstreet	Norton	3/5/1950	Nonfiction
This I Remember	Eleanor Roosevelt	Harper	1/15/1950	Nonfiction
Worlds In Collision	Immanuel Velikovsky	Doubleday	5/7/1950	Nonfiction

```
*** search by year [1], author [2], title [3], publisher [4], or quit [0]: 2
enter desired author: bill gates
1  records found in database
```

title	author	publisher	year	category
The Road Ahead	Bill Gates	Viking	12/17/1995	Nonfiction

```
*** search by year [1], author [2], title [3], publisher [4], or quit [0]: 4
enter desired publisher: messner
2  records found in database
```

title	author	publisher	year	category
Joy Street	Francis Parkinson Keyes	Messner	1/14/1951	Fiction
Peyton Place	Grace Metalious	Messner	11/25/1956	Fiction

```
*** search by year [1], author [2], title [3], publisher [4], or quit [0]: 3
enter desired title: harry potter
3  records found in database
```

title	author	publisher	year	category
Harry Potter and the Chamber of Secrets	J. K. Rowling	Levine/Scholastic	6/20/1999	Fiction
Harry Potter and the Prisoner of Azkaban	J. K. Rowling	Levine/Scholastic	9/26/1999	Fiction
Harry Potter and the Sorcerer's Stone	J. K. Rowling	Levine/Scholastic	8/15/1999	Fiction

```
*** search by year [1], author [2], title [3], publisher [4], or quit [0]: 0
>>>
```