Lab 4 Problems

Lab Problem 1

In this problem, we will be working with the `BookData` class that you created in an ICA.

Step 1: From the class website in the LAB link, download these two files: `bookdata.py` and `bookfile.txt`.

You will see the `BookData` class defined and the shell of a `main()` function.

Step 2: Instead of prompting the user for the information on books as we did in the ICA, you will read a file containing book information. Each line of the file gives the title, author and rating of a book separated by commas. Here is an example line in the file:

```
A Tale of Two Cities,Charles Dickens,5
```

(**Note:** There is not a header defining the format of the file.)

Your task is to create a function `process_input(filename)` that takes a string argument that is the name of the book data file, reads the file and creates a dictionary of `BookData` objects. For each line in the file, make an entry in the dictionary with the title as the key and a `BookData` object as its value.

The function must then return the dictionary that you created.

Step 3: In `main()`, after the prompt for the filename, call your `process_input()` function and then print out the dictionary that was returned so that you can verify that the dictionary is correct.

Step 4: The while loop in `main()` prompts the user for a title. Your task is to check to see if the title is in the dictionary and if it is, print out `"Rating is ",` followed by its rating. If it is not in the dictionary, print out the message `"There is no information on that book."`. Sample input and output is below.

Sample Input/Output – (user input is bolded)

Enter filename: **bookfile.txt**

Dictionary contents:
A Tale of Two Cities : A Tale of Two Cities - Charles Dickens - 5
The Pearl : The Pearl - John Steinbeck - 4
Pride and Prejudice : Pride and Prejudice - Jane Austin - 5
Harry Potter : Harry Potter - J. K. Rowlings - 4
1984 : 1984 - George Orwell - 4
Persuasion : Persuasion - Jane Austin - 4

The Great Gatsby : The Great Gatsby - F. Scott Fitzgerald - 4
The Lord of the Rings : The Lord of the Rings - J.R.R. Tolkien - 4
The Sound and the Fury : The Sound and the Fury - William Faulkner - 3

Book title: **Harry Potter**
Rating is 4
Enter "done" if finished: <-user hit the enter key
Book title: **Pride and Prejudice**
Rating is 5
Enter "done" if finished: <-user hit the enter key
Book title: **The Pearl**
Rating is 4
Enter "done" if finished: **done**

Lab Problem 2

Python has many functions and methods for strings, however, one method that we will need for our next assignment is find(), which is defined below.

`s1.find(s2):`

- finds the index of the first occurrence of `s2` in `s1` and returns it
- returns -1 if `s2` is not a substring of `s1`.

Examples:

```
"hello".find("o") returns  4

"hello".find("z") returns  -1

"starry starry night".find("arr") returns  2
```

Imagine you need to process a file containing lines with an author, a colon, whitespace, and a book title like the line below, in order to extract the authors and titles:

```
F. Scott Fizgerald:  The Great Gadsby
```

You might simply split on the colon, but you soon discover that some books have a colon in the title, like this one:

```
Daniel J. Solove:  The Digital Person: Technology and Privacy Today
```

Your task is to use `find()` to separate a line of text like the two examples above into author and title. Let `line` be the variable assigned to the line. Using `find()`, define two variables, `author` and `title` that contain the correct parts of the line. (You can define any other variables you need.)