

Programming Exam 7

Date/Time: 2023.05.16 08:10 – 09:00

(程式檔命名學號_quiz7.py，上傳至 Moodle PE7 上傳區)

Problem: Book Management System

Write a Python program to implement a simple library management system that allows users to add, remove, and get information about books in a library, as well as list all books in the library and list books by genre. The program creates an empty *dictionary* library to store book information. The user is presented with a menu that allows them to select from six options: add a book, remove a book, get book information, list all books in the library, list books by genre, or quit the program.

- **"add a book"**: prompt to enter title, genre, and price of the book separated by a vertical bar | character. Then add the book to the library and print a message indicating the book has been added.
- **"remove a book"**: prompt to enter the title of the book they want to remove. If the book is found, removes it and prints an indicating message. If the book is not found, an error message is printed.
- **"get book information"**: prompt to enter the title of the book. If the book is found, print the book's title, genre, and price. If the book is not found, an error message is printed.
- **"list all books"**: list all books *in alphabetical order by title*, along with their genre and price.
- **"list books by genre"**: prompt to enter the genre. List all books in the genre *in alphabetical order by title*, along with their price. If no books are found, an error message is printed.
- The program continues to display the menu until the user selects **"quit"**. When the user selects **"quit"**, a goodbye message is printed and the program exits.

We provide you pe7.py, and some parts are ready. Your task is to complete the remaining functions, including `add_book()`, `remove_book()`, `get_book_info()`, and `list_books_by_genre()`.

Sample Input/Output

(以下是你程式執行後須印出的結果)

```
c:\workspace>python pe7.py
Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 2
Enter the title of the book to remove: aaa

Error: aaa not found in the library.

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 1

Enter the title, genre, and price of the book (separated by |): abc|P|200

Added abc to the library.

abc (P, $200.00)
```

```

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 1

Enter the title, genre, and price of the book (separated by |): def|Q|300

Added def to the library.

abc (P, $200.00)
def (Q, $300.00)

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 1

Enter the title, genre, and price of the book (separated by |): ghi|Q|500

Added ghi to the library.

abc (P, $200.00)
def (Q, $300.00)
ghi (Q, $500.00)

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 3
Enter the title of the book: def

Title: def
Genre: Q
Price: 300.0

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 3
Enter the title of the book: xxx

Error: xxx not found in the library.

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 4

abc (P, $200.00)
def (Q, $300.00)
ghi (Q, $500.00)

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 5
Enter the genre to search for: Q

def (Q, $300.00)
ghi (Q, $500.00)

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit

```

```
Enter your choice (1-6): 5
Enter the genre to search for: D

No books found in the D genre.

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 2
Enter the title of the book to remove: abc

Removed abc from the library.

def (Q, $300.00)
ghi (Q, $500.00)

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 5
Enter the genre to search for: P

No books found in the P genre.

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 4

def (Q, $300.00)
ghi (Q, $500.00)

Menu:
1. Add a book
2. Remove a book
3. Get book information
4. List all books
5. List books by genre
6. Quit
Enter your choice (1-6): 6
Goodbye!

c:\workspace>
```

(繳交是交 pe7.py 檔，不是交截圖)

Note: You need to write comments (註解) for each part in your code.
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