Quiz 1: Book Lister

File format: Class_NIM_NAMA.c (Ex: LA05_2702200000_Dature.c)

Book Lister is a program designed to manage a list of books. The list is automatically ordered alphabetically by their names to facilitate easy access and organization. Implemented using Linked List data structures and programmed in the C programming language, the program provides the following functionalities:

Input:

1. The first input will be:

   $$N$$

   Where N is an integer for number of Book data to be inserted.

2. The second input will be:

   $$A$$

   Where A is a string of the book attribute which will be used for deleting book data, its either:
   - *Genre*
   - *Code*
   - *Name*

3. The third input will use format:

   $$G_1\ C_1\ M_1$$
   $$G_2\ C_2\ M_2$$
   $$\ldots$$
   $$G_n\ C_n\ M_n$$

   Where:
   a. G is a string for Genre of the book
   b. C is a string for Code of the book
   c. M is string for Name of the book

4. The fourth input will be:

   $$D$$

   Where D is a single key representing the item to be deleted from the list. The key can be a Genre, Code, or Name of the book.

Output:

1. The output is all book data **(Genre, Code, Name)** after the insert operation is performed.
2. The second output is all book data **(Genre, Code, Name)** after the delete operation is performed.
3. They are separated by a single newline.

Example 1:

Sample Input	Sample Output
3 Name Fiction B001 The Lord of the Rings Fiction B002 Harry Potter and the Philosopher's Stone NonFiction B003 Sapiens: A Brief History of Humankind The Lord of the Rings	Fiction B002 Harry Potter and the Philosopher's Stone NonFiction B003 Sapiens: A Brief History of Humankind Fiction B001 The Lord of the Rings Fiction B002 Harry Potter and the Philosopher's Stone NonFiction B003 Sapiens: A Brief History of Humankind

Explanation:
In this test case, we insert 3 books into the list, ordered by book name alphabetically:

- Genre: Fiction, Code: B001, Name: The Lord of the Rings
- Genre: Fiction, Code: B002, Name: Harry Potter and the Philosopher's Stone
- Genre: NonFiction, Code: B003, Name: Sapiens: A Brief History of Humankind

Then, we perform the deletion operation on the book named "The Lord of the Rings".
The expected output before deletion will be all book data:

- Fiction B002 Harry Potter and the Philosopher's Stone
- NonFiction B003 Sapiens: A Brief History of Humankind
- Fiction B001 The Lord of the Rings

After deletion, the expected output will be:

- Fiction B002 Harry Potter and the Philosopher's Stone
- NonFiction B003 Sapiens: A Brief History of Humankind

Example 2:

Sample Input	Sample Output
5 Genre NonFiction B001 A Brief History of Time Fiction B002 The Catcher in the Rye Fiction B003 The Great Gatsby NonFiction B004 Sapiens: A Brief History of Humankind Fiction B005 The Hobbit NonFiction	NonFiction B001 A Brief History of Time NonFiction B004 Sapiens: A Brief History of Humankind Fiction B002 The Catcher in the Rye Fiction B003 The Great Gatsby Fiction B005 The Hobbit Fiction B002 The Catcher in the Rye Fiction B003 The Great Gatsby Fiction B005 The Hobbit

Explanation:

In this test case, we insert 5 books into the list, ordered by book name alphabetically:

- Genre: NonFiction, Code: B001, Name: A Brief History of Time
- Genre: Fiction, Code: B002, Name: The Catcher in the Rye
- Genre: Fiction, Code: B003, Name: The Great Gatsby
- Genre: NonFiction, Code: B004, Name: Sapiens: A Brief History of Humankind
- Genre: Fiction, Code: B005, Name: The Hobbit

Then, we perform the deletion operation on all books with the genre "NonFiction".
The expected output before deletion will be all book data:

- NonFiction B001 A Brief History of Time
- NonFiction B004 Sapiens: A Brief History of Humankind
- Fiction B002 The Catcher in the Rye
- Fiction B003 The Great Gatsby
- Fiction B005 The Hobbit

After deletion, the expected output will be:

- Fiction B002 The Catcher in the Rye
- Fiction B003 The Great Gatsby
- Fiction B005 The Hobbit

a. Enqueue (Insert): When a new book needs to be added to the list, it is inserted in such a way that the alphabetical order is maintained. This ensures that the list always remains sorted by their name.
b. Delete specific values: If a book needs to be removed from the list, the program allows deletion of specific book attributes. Upon deletion, the list is adjusted accordingly to maintain its sorted order.
c. Print out the values: The program provides the functionality to print out all the book names currently stored in the list. This allows users to view the entire list of books in alphabetical order.

Note: you may use single/double linked list