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Engineering Department  
ENCS3130, LINUX LABORATORY  
Project#2**

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**Date:8/7/2023**

**Section: 3**

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#### A. main menu:

Upon execution of the program, it initializes by loading the LMS and archive file. The information retrieved from these files is then organized into lists. Subsequently, an object is created and the load function of the library class is invoked, passing the aforementioned lists as parameters, The screen then displays a series of options, and this continues until one is chosen

```
1. Adding new books to the library collection
2. Searching for books within the library collection
3. Editing the information of existing books
4. Archiving books
5. Removing books from the LMS
6. Generating reports about the books available in the LMS
7. Exit

Enter the choice:
```

*Figure 1:main menu*

## B. Adding new books to the library collection:

Upon selecting option 1 to add new books, the program prompts the user to provide a file name. Subsequently, the books mentioned in the file are downloaded and added to the library. The newly added books are then displayed on the screen. In case the program detects books with identical numbers, the user is prompted to decide whether to replace the existing copies or add additional copies to the library.

```
4. Archiving books
5. Removing books from the LMS
6. Generating reports about the books available in the LMS
7. Exit

Enter the choice: 1
Enter the name of the file containing the information about the new books: input.txt

Title: Microprocessor Systems Design: 68000 Family Hardware, Software, and Interfacing
publisher: CL-Engineering;
ISBN-10: 9780534948221
ISBN-13: 978-0534948221
copies: 1
ASIN: 0534948227
Language: English
Hardcover: 992 pages

Title: Modern Computer Architecture and Organization: Learn x86, ARM, and RISC-V architectures and the design of smartphones, PCs, and cloud servers
publisher: Packt Publishing;
ISBN-10: 1803234512
ISBN-13: 978-1803234519
copies: 1
Language: English
Year: 2022
```

Activate V  
Go to Setting

Figure 2: add books

### C. Searching for books within the library collection:

If the user selects option 2, they will be prompted to specify the trait they wish to search by. Next, the user will be asked to enter the corresponding value for that trait. The program will then display the search results on the screen. Afterward, the user will be given the choice to save the results in a file. If the user confirms their preference by selecting "yes," the program will save the results in a file, as illustrated in the following pictures.

```
6. Generating reports about the books available in the LMS
7. Exit

Enter the choice: 2
What is the parameters you want to use in the search?ISBN-10
Enter its value0131103628
{'Title': 'C Programming Language', 'publisher': 'Pearsonon', 'ISBN-10': '0131103628', 'ISBN-13': '978-013110362', 'copies': 1, 'Year': '1988', 'Month': '3', 'Paperback': '272'}
Do you want to save the information to a file(Y,F) Y

1. Adding new books to the library collection
2. Searching for books within the library collection
3. Editing the information of existing books
4. Archiving books
5. Removing books from the LMS
6. Generating reports about the books available in the LMS
7. Exit

Enter the choice:
```

Activate Windows  
Go to Settings to activate Windows.

Figure 3:search books

```
main.py  Library.py  Sear.txt x  LMS.txt

1 Title : C Programming Language
2 publisher : Pearsonon
3 ISBN-10 : 0131103628
4 ISBN-13 : 978-013110362
5 copies : 1
6 Year : 1988
7 Month : 3
8 Paperback : 272 pages
9
10
```

Figure 4:save result in file

#### D. Editing the information of existing books:

Upon selecting option 3, the LMS (Library Management System) prompts the user to enter either the book's name or its ISBN. Following that, the user is asked to specify the property they wish to update and provide the new value for that property. The LMS then requests confirmation from the user to proceed with the update operation. Additionally, the user is given the option to update another feature if desired.

```
7. Exit

Enter the choice: 3
Enter the Title or ISBN-13 number or ISBN-10 number of the book you want to update: ISBN-10
Enter the value of ISBN-10: 1803234512
What parameters do you want to update for this book: Year
Enter the new value: 2018
Are you sure you want to update? (Y/N): Y
Do you want to update another parameter of this book? If yes, enter the parameter; if no, enter 'No': No

1. Adding new books to the library collection
2. Searching for books within the library collection
3. Editing the information of existing books
4. Archiving books
5. Removing books from the LMS
6. Generating reports about the books available in the LMS
7. Exit

Enter the choice:
```

*Figure 5:edit books*

### E. Archiving books:

Option 4 in the Learning Management System (LMS) facilitates the transfer of seldom used books for archiving purposes. When this option is chosen, the LMS prompts the user to provide the ISBNs of the books they wish to transfer. Following that, the LMS requests confirmation from the user. In case multiple copies of a book are identified, the user is prompted to specify the number of copies they intend to archive.

```
Enter the choice: 4
You want to archive the book by (ISBN-13 or ISBN-10)?ISBN-10
f Enter the value of ISBN-109780133923605
are you sure (Y/N)Y

1. Adding new books to the library collection
2. Searching for books within the library collection
3. Editing the information of existing books
4. Archiving books
5. Removing books from the LMS
6. Generating reports about the books available in the LMS
7. Exit

Enter the choice:
```

*Figure 6: Archiving books*



## F. Removing books from the LMS:

If the user selects option 5, they will be prompted to enter the number of the book they wish to delete. Subsequently, the user will be asked to confirm their intention to proceed with the deletion process. The book will only be deleted if it is found in the archive file.

```
Enter the choice: 5
You want to delete the book by (ISBN-13 or ISBN-10)?ISBN-10
f Enter the value of ISBN-109780133923605
Are you sure you want to delete it (Y/N)N

1. Adding new books to the library collection
2. Searching for books within the library collection
3. Editing the information of existing books
4. Archiving books
5. Removing books from the LMS
6. Generating reports about the books available in the LMS
7. Exit

Enter the choice:
```

*Figure 7:Removing books*

## G. reports about the books:

Option 6 in the LMS generates reports regarding the available books. The following information will be displayed on the screen:

1. The total number of books in the Learning Management System.
2. The count of unique books offered in the LMS.
3. The number of books archived in the LMS.
4. The count of books in the LMS that are newer than a specified year.
5. The distribution of books based on the publishers.
6. The distribution of books based on the publication year.

```
Enter the choice: 6
number of books are in the LMS 4
number of different books are offered in the LMS 4
number of books archived in the LMS 1
Please provide the desired year, and I will inform you of the number of books published thereafter.2010
Publisher: CL-Engineering
Title: Microprocessor Systems Design: 68000 Family Hardware, Software, and Interfacing, ISBN-10: 9780534948221, ISBN-13: 978-0534948221

Publisher: Packt Publishing;
Title: Modern Computer Architecture and Organization: Learn x86, ARM, and RISC-V architectures and the design of smartphones, PCs, and cloud servers, ISBN-10: 1803234512, ISBN-13: 978-1803234512

Publisher: Pearsonon
Title: C Programming Language, ISBN-10: 0131103628, ISBN-13: 978-013110362

Publisher: Pearsonn
Title: Introductory Circuit Analysis, ISBN-10: 9780133923605, ISBN-13: 978-0133923605

Year: 2018
Title: Modern Computer Architecture and Organization: Learn x86, ARM, and RISC-V architectures and the design of smartphones, PCs, and cloud servers, ISBN-10: 1803234512, ISBN-13: 978-1803234512

Year: 1988
Title: C Programming Language, ISBN-10: 0131103628, ISBN-13: 978-013110362
```

Activate Windows

*Figure 8:reports*

## H.Exit:

Upon selecting the exit option, all book updates, including newly added books and archived books, are stored in a file. The regular books are saved in the main library file, while the archived books are stored separately in the archive file.

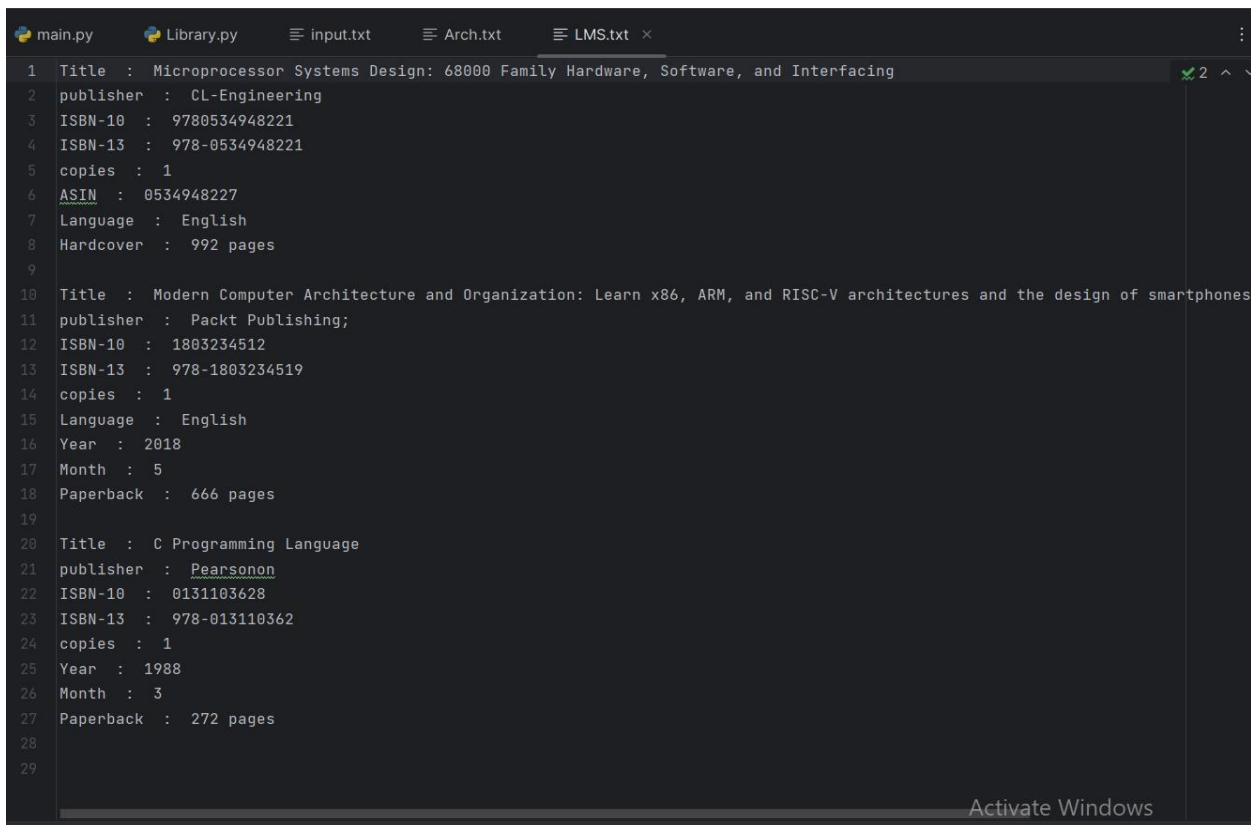
```
Item Weight: 3.34 pounds

1. Adding new books to the library collection
2. Searching for books within the library collection
3. Editing the information of existing books
4. Archiving books
5. Removing books from the LMS
6. Generating reports about the books available in the LMS
7. Exit

Enter the choice: 7

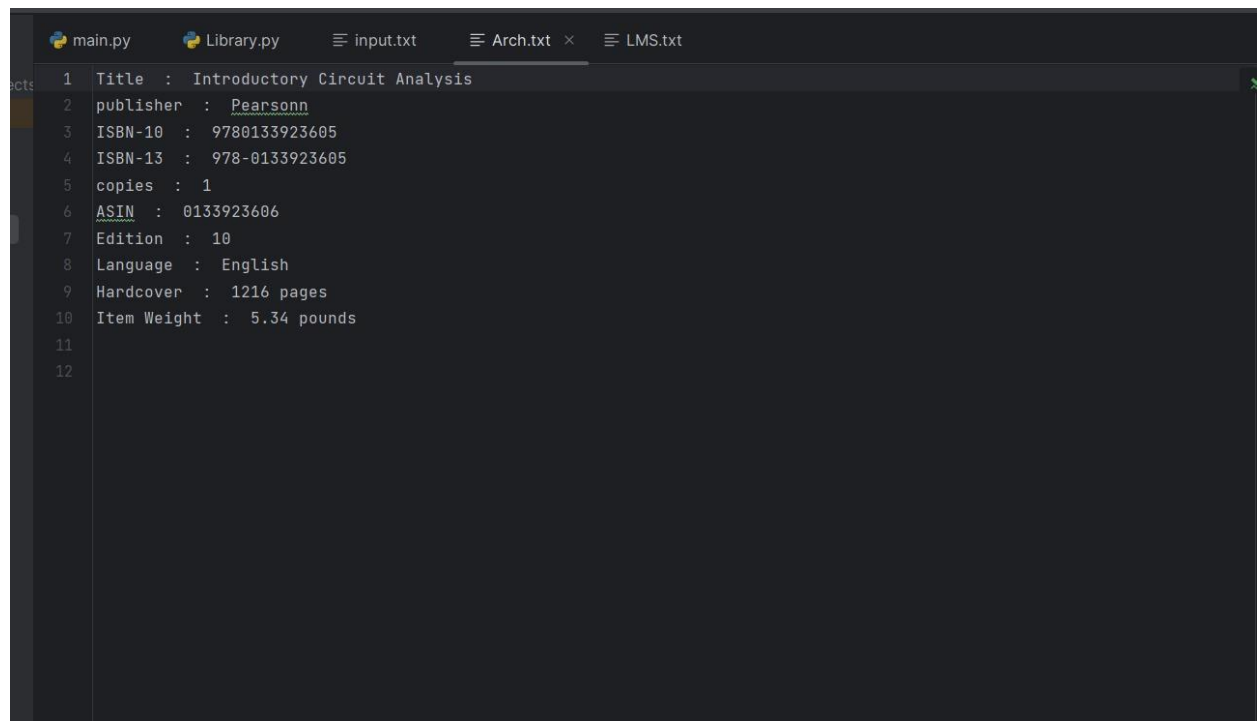
Process finished with exit code 0
```

Figure 9:Exit

The image shows a code editor window with multiple tabs: 'main.py', 'Library.py', 'input.txt', 'Arch.txt', and 'LMS.txt'. The 'LMS.txt' tab is active, displaying a list of book records. Each record is a multi-line string containing book details. The records are numbered 1 through 29 in the editor's line numbers. The first record (line 1) is for 'Microprocessor Systems Design: 68000 Family Hardware, Software, and Interfacing'. The second record (line 10) is for 'Modern Computer Architecture and Organization: Learn x86, ARM, and RISC-V architectures and the design of smartphones'. The third record (line 20) is for 'C Programming Language'. The editor has a dark theme and a scrollbar on the right. An 'Activate Windows' watermark is visible in the bottom right corner.

```
1 Title : Microprocessor Systems Design: 68000 Family Hardware, Software, and Interfacing
2 publisher : CL-Engineering
3 ISBN-10 : 9780534948221
4 ISBN-13 : 978-0534948221
5 copies : 1
6 ASIN : 0534948227
7 Language : English
8 Hardcover : 992 pages
9
10 Title : Modern Computer Architecture and Organization: Learn x86, ARM, and RISC-V architectures and the design of smartphones
11 publisher : Packt Publishing;
12 ISBN-10 : 1803234512
13 ISBN-13 : 978-1803234519
14 copies : 1
15 Language : English
16 Year : 2018
17 Month : 5
18 Paperback : 666 pages
19
20 Title : C Programming Language
21 publisher : Pearsonon
22 ISBN-10 : 0131103628
23 ISBN-13 : 978-013110362
24 copies : 1
25 Year : 1988
26 Month : 3
27 Paperback : 272 pages
28
29
```

Figure 10:LMS File



```
1 Title : Introductory Circuit Analysis
2 publisher : Pearsonn
3 ISBN-10 : 9780133923605
4 ISBN-13 : 978-0133923605
5 copies : 1
6 ASIN : 0133923606
7 Edition : 10
8 Language : English
9 Hardcover : 1216 pages
10 Item Weight : 5.34 pounds
11
12
```

*Figure 11:acch File*