Name – Megha Godwal
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Python Project 2 – My Buddy's Business Software
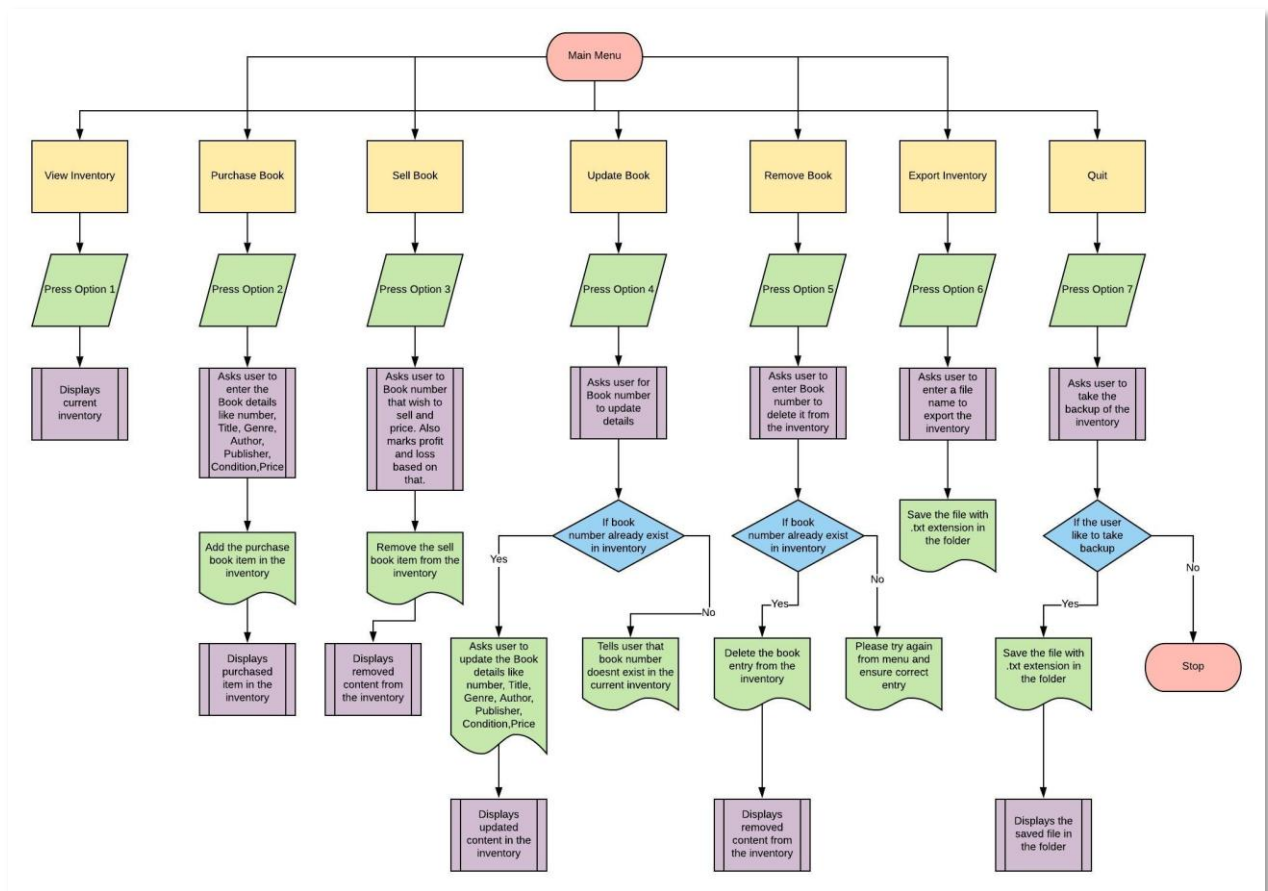
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Prerequisites :

To be able to use this software, make sure you have Python 3 and PyCharm already installed on your local computer or server.
You should also be familiar with the following Python programming concepts:

- Importing Modules
- Classes
- Functions
- Variables
- While loops
- Conditional Statements

With a programming environment set up and familiarity with Python Programming, you are ready to begin working with the software.

Flowchart :

Importing Libraries :

And have imported few built-in libraries like

- Time
- Sys

To run this software make sure you install and import the third-party library

- Random

Initializing of the software :

I have created a software for Book Inventory for which a user can view all the database, purchase an item, sell an item, update the existing inventory, remove any item from the inventory and also can export file of the inventory and save it on the system.
To achieve this, I have created two classes one is Books and other one is Inventory. In books class, it has constructor, creator, display and formatting logic built in. I have initialized attributes for the book like number, title of the book, genre, author, purchase price, retail price and condition of the book. Also, have defined a function from_input(cls) where I am taking all these attributes input from the user while adding any book in the inventory.
I have setup return function to pipe data elsewhere (such as file), so have created dictionary as it workes better for making a string to output to file.

The other class is an Inventory class which keep tracks of array and facilitates purchasing, selling, deletion, updating, displaying and exporting of Book items. And defined all these menu functions in that class like, displaying the entire inventory, purchasing any item from the inventory, removing any item, selling any item etc like shown below.

```
Welcome to Tim's Book Store

:::[MAIN MENU]:::

1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option:
```

Testing of Core Features :

The core features of the software are :
- View inventory
- Purchase Book
- Sell Book
- Update Book Details
- Remove Book Entry
- Export Inventory
- Quit

Below I have explained each of these function with the testing screenshots and explained what these functions represent and how they work.

View Inventory :

This is the very first option in the Main Menu. Once the user presses 1 the book inventory will show up like shown below as it displays all the contents in the database inventory. I have created inventory as list and add_item function helps it to append the contents in the inventory list.

```
Please choose an option: 1

CURRENT BOOK INVENTORY CONTENTS:


    Number:         | 1
    Title:          | To Kill A Mocking Bird
    Genre:          | Thriller
    Author:         | Henry Lee
    Condition:      | Old
    Price:          | 12
    Retail Price:   | 14


    Number:         | 2
    Title:          | The Great Gatsby
    Genre:          | Fiction
    Author:         | F. Scott Fitzgerald
    Condition:      | Fair
    Price:          | 30
    Retail Price:   | 35


    Number:         | 3
    Title:          | Jane Eyre
    Genre:          | Romance
    Author:         | Charlotte Bronte
    Condition:      | Good
    Price:          | 29
    Retail Price:   | 32
```

Purchase Book :

This function helps user to add all the attributes of the book in order to save a book in the inventory. Like shown below, by pressing the option 2(purchase book), you will be directed to few details regarding the book like the ID, Title, Genre, Author, Condition, Purchase Price and Retail Price of the book.

```
1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 2

ADD NEW BOOK TO INVENTORY:

Please enter book Id: 6
Please enter Title: Little Women
Please enter Genre: Novel
Please enter Author: Louisa May Alcott
Please enter Purchase Price: 5
Please enter Retail Price: 7

CONDITION: Please choose book condition from the list: [1-8]

::: OPTIONS :::   1 = Poor, 2 = Fair, 3 = Bad, 4 = Good, 5 = Like New, 6 = New   :::   4

BOOK ADDITION SUCCESSFUL. Item can now be found in inventory listing.
```

After entering the purchase item attributes, it will be shown in the view inventory option by choosing the option 1 of the main menu like shown below:

```
Number:         | 5
Title:          | Harry Potter And The Sorcerer'S Stone
Genre:          | Fantasy Fiction
Author:         | J.K. Rowling
Condition:      | Good
Price:          | 45
Retail Price:   | 50


Number:         | 6
Title:          | Little Women
Genre:          | Novel
Author:         | Louisa May Alcott
Condition:      | Poor
Price:          | 5
Retail Price:   | 7
```

Sell Book :

This function helps the user to sell a book from the inventory by asking the book number and price you wish to sell the book for the profit or loss can be calculated like shown below. If the selling is price is higher than the purchasing price it will show user the how much profit they got.

```
:::[MAIN MENU]:::

1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 3

SELL A BOOK
Please enter the Book number you wish to sell: 1
Please enter the price : 13
Your profit is:
1
```

The function also calculates if the selling price is less than the purchasing price of the book, it will displays the loss you have incurred like shown below:

```
:::[MAIN MENU]:::

1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 3

SELL A BOOK
Please enter the Book number you wish to sell: 1
Please enter the price : 7
Your loss is :
-5
```

Update Book Details :

This function helps user to update any book details in the current inventory. The function will first ask what book number you want to update and then check if the mentioned book number exits in the current inventory or not, if it does, it will again ask you the book number and the all the other attributes you wish to update to for that book. If the input book number doesn't exist in the current inventory it will tell you the book number does not found in the inventory and you have to type correctly.

```
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 4

UPDATE A BOOK
Please enter the book number you wish to update details for: 2

Book 2 was found in list. Enter new attributes:

Please enter book Id: 2
Please enter Title: Little Women
Please enter Genre: Novel
Please enter Author: Louisa May Alcott
Please enter Purchase Price: 5
Please enter Retail Price: 7

CONDITION: Please choose book condition from the list: [1-8]

::: OPTIONS :::   1 = Poor, 2 = Fair, 3 = Bad, 4 = Good, 5 = Like New, 6 = New   :::    4

Book 2 was successfully updated.
```

```
CURRENT BOOK INVENTORY CONTENTS:


    Number:        | 1
    Title:         | To Kill A Mocking Bird
    Genre:         | Thriller
    Author:        | Henry Lee
    Condition:     | Old
    Price:         | 12
    Retail Price:  | 14


    Number:        | 2
    Title:         | Little Women
    Genre:         | Novel
    Author:        | Louisa May Alcott
    Condition:     | Poor
    Price:         | 5
    Retail Price:  | 7


    Number:        | 3
    Title:         | Jane Eyre
    Genre:         | Romance
    Author:        | Charlotte Bronte
    Condition:     | Good
    Price:         | 29
    Retail Price:  | 32
```

If the user enters book number which doesn't present in the current book inventory it will displays as shown below:

```
Welcome to Tim's Book Store

:::[MAIN MENU]:::

1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 4

UPDATE A BOOK
Please enter the book number you wish to update details for: 7

Book of " 7 "not found. Please choose desired option again from menu and ensure correct entry.
```

Remove Book Entry :

This function helps user to remove any entry from the current inventory. It will ask user to enter the book number they want to delete to, if the user type incorrect book number that does not exist in the inventory it will show a message to type a correct number. Once correct book number is typed and entered the respective book will be popped out of the inventory.

```
:::[MAIN MENU]:::

1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 5

REMOVE A BOOK

Please enter the Book number you wish to delete: 3

Book with number of 3 was removed from inventory.
```

```
CURRENT BOOK INVENTORY CONTENTS:


    Number:        | 1
    Title:         | To Kill A Mocking Bird
    Genre:         | Thriller
    Author:        | Henry Lee
    Condition:     | Old
    Price:         | 12
    Retail Price:  | 14


    Number:        | 2
    Title:         | The Great Gatsby
    Genre:         | Fiction
    Author:        | F. Scott Fitzgerald
    Condition:     | Fair
    Price:         | 30
    Retail Price:  | 35


    Number:        | 4
    Title:         | The Da Vinci Code
    Genre:         | Mystery
    Author:        | Dan Brown
    Condition:     | Like New
    Price:         | 34
    Retail Price:  | 40


    Number:        | 5
    Title:         | Harry Potter And The Sorcerer'S Stone
    Genre:         | Fantasy Fiction
    Author:        | J.K. Rowling
    Condition:     | Good
```

If the entered book number doesn't exist, it will tell you that book not found and try again with correct book number.

```
Welcome to Tim's Book Store

:::[MAIN MENU]:::

1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 5

REMOVE A BOOK

Please enter the Book number you wish to delete: 7

Book not found. Please try again from menu and ensure correct entry.
```

Export Inventory :

This function helps user to export the inventory in the .txt format. I have setup a return function in Book class to pipe data in a file and have used dictionary format to support that.
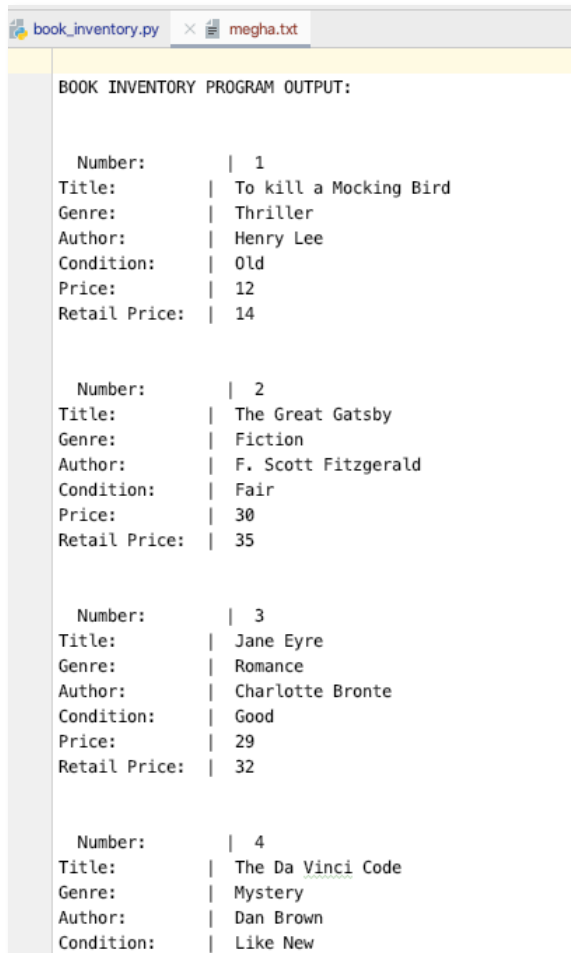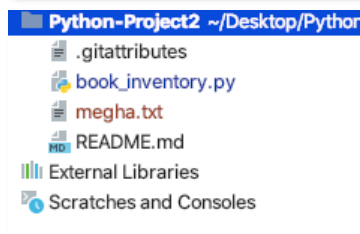
```
:::[MAIN MENU]:::

1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 6

Enter name to save file (extension will be added automatically): megha

INVENTORY EXPORT SUCCESSFUL. File was saved as 'megha.txt'. [ENTER]
```

```
Python-Project2 ~/Desktop/Python
    .gitattributes
    book_inventory.py
    megha.txt
    README.md
Illi External Libraries
Scratches and Consoles
```

```
book_inventory.py   ×  megha.txt

    BOOK INVENTORY PROGRAM OUTPUT:


    Number:         |  1
    Title:          |  To kill a Mocking Bird
    Genre:          |  Thriller
    Author:         |  Henry Lee
    Condition:      |  Old
    Price:          |  12
    Retail Price:   |  14


    Number:         |  2
    Title:          |  The Great Gatsby
    Genre:          |  Fiction
    Author:         |  F. Scott Fitzgerald
    Condition:      |  Fair
    Price:          |  30
    Retail Price:   |  35


    Number:         |  3
    Title:          |  Jane Eyre
    Genre:          |  Romance
    Author:         |  Charlotte Bronte
    Condition:      |  Good
    Price:          |  29
    Retail Price:   |  32


    Number:         |  4
    Title:          |  The Da Vinci Code
    Genre:          |  Mystery
    Author:         |  Dan Brown
    Condition:      |  Like New
```

Quit :

This function let you quit from the software. It first check with the user if they want any backup of their data unless it will be lost. As user enters to "yes", it will save the inventory in the form of file with .txt extension using return function under book class.
The following is shown below:

```
:::[MAIN MENU]:::

1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 7

ARE YOU SURE? All data will be lost. Backup? (Y/N): y

Enter name to save file (extension will be added automatically): save

INVENTORY EXPORT SUCCESSFUL. File was saved as 'save.txt'. [ENTER]

PROGRAM UNDERGOING TERMINATION.


Process finished with exit code 0
```
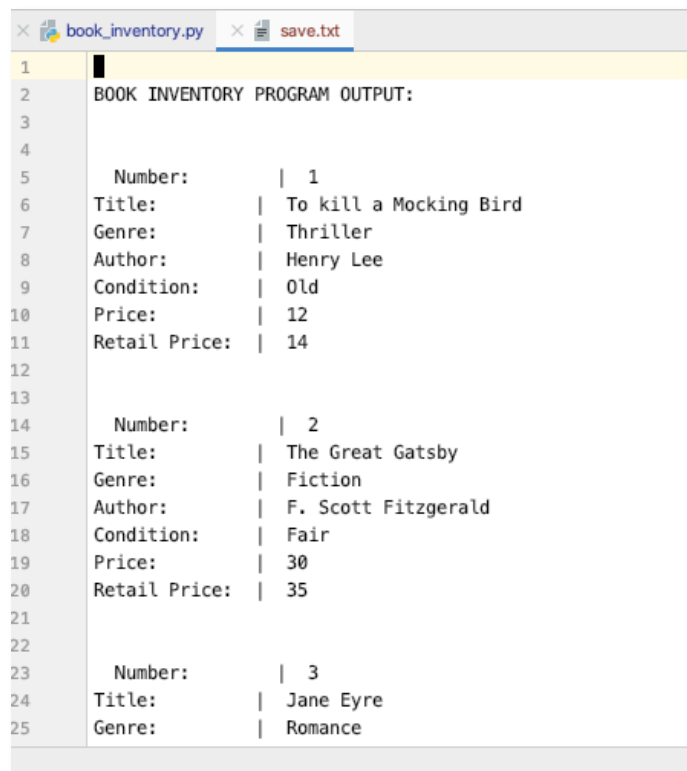
```
×  book_inventory.py    ×  save.txt
1
2      BOOK INVENTORY PROGRAM OUTPUT:
3
4
5        Number:        |  1
6      Title:           |  To kill a Mocking Bird
7      Genre:           |  Thriller
8      Author:          |  Henry Lee
9      Condition:       |  Old
10     Price:           |  12
11     Retail Price:    |  14
12
13
14       Number:        |  2
15     Title:           |  The Great Gatsby
16     Genre:           |  Fiction
17     Author:          |  F. Scott Fitzgerald
18     Condition:       |  Fair
19     Price:           |  30
20     Retail Price:    |  35
21
22
23       Number:        |  3
24     Title:           |  Jane Eyre
25     Genre:           |  Romance
```

If user doesn't want to take back up of the inventory it will just let the user quit from the software without any saving the file like shown below.

```
:::[MAIN MENU]:::

1. View Inventory
2. Purchase Book
3. Sell Book
4. Update Book Details
5. Remove Book Entry
6. Export Inventory
7. Quit

Please choose an option: 7

ARE YOU SURE? All data will be lost. Backup? (Y/N): n

PROGRAM UNDERGOING TERMINATION.


Process finished with exit code 0
```

Code Improvements and Next steps :

While the program above is fully functional, there are some things I can do to improve the code. In my next version I would like to add these following:

1. I would like to add sales assistance in the program to make the software more relatable.
2. I would like to add login and logout details when any of the employee would want to access the database.
3. I would also like to improve it by making it GUI.