Distributed and Operating Systems

Lab 1: Bazar.com: A Multi-tier Online Book Store

Student: Amna Khdair

Rawan Hassoun

In this project we use python language, and flask framework, for the database we use a JSON file.

Prepare two Ubuntu virtual machine with flask project and use visual studio code as editor.

Write the catalog server on one machine, order server on other machine, and write the front end at local device.

Code basics:

1. @app.route("/info/<id>",methods=['GET'])

Use this line to set the URL format as required in each operation.

1. With open('/home/amnakhdair/Desktop/projects/

BooksDB.json', 'r') as DBfile:

Use this code to open JSON file and create a nick name for the file, such as DBfile, in order to make it easier to handle.

1. data = DBfile.read()

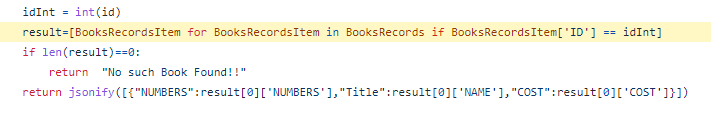
|  |
| --- |
| jsonObject = json.loads(data) |
|  |

Read data from DBfile and convert it to JSON format

1. BooksRecords = jsonObject['BOOK']

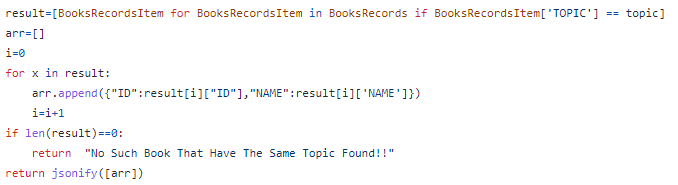
Separate the books database to many record to deal with every record alone, every record contain one book with all its properties.

1. Write the result statement as require in every question.
2. In info question:



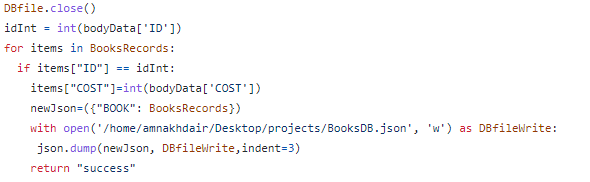
Make a for loop that loops for every book in the database, checks if its ID is the same as the enter ID, then displays the title, cost, and number of copies. The result will be just one book. Because the ID is unique.

1. In search question:



Search according to book topic, find all books that have the same entering topic, append the book name and id into array to allow convert it to JSON format then show all of them.

1. Update question:



When updating, you must close the file after reading data, find the book with the required id, then update the cost, open the file again as a write operation, and dump the updated information.

1. queryNumbers:

This operation check if the required book (assigned with its ID) is available at data base by check if numbers of book is more than zero, if it’s available decrease the number of books with the enter amount.

1. IncreaseNumbers:

The same as queryNumbers operation but here increase the books number with the enter amounts.

In order to connect two virtual machines, we must detect their IP addresses, then make the connection. Unfortunately, the connection fails even though the code is correct.

A possible improvement to the program would be to create a borrow operation at order server.