Homework 4

Python DynamoDB + S3 Interface

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Course: SDEV 400 6980

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Program requirements:

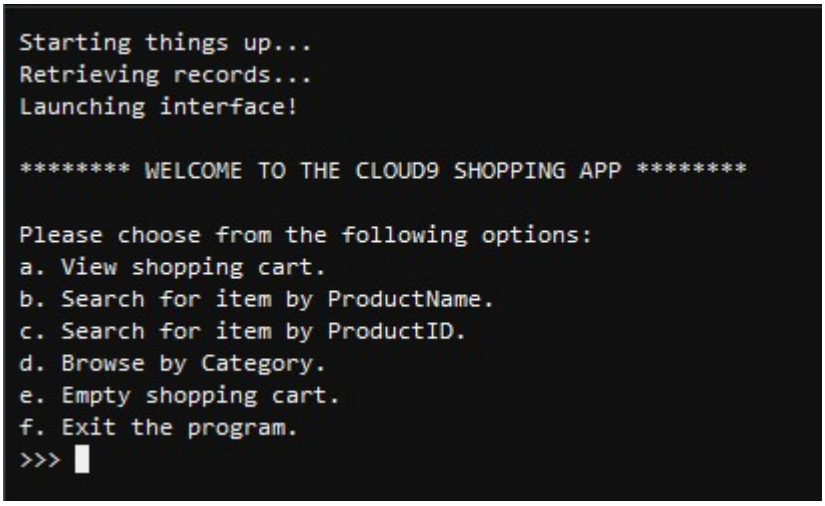
1. Uses at least one DynamoDB table.
2. Uses at least one S3 bucket.
3. Includes a Menu driven interface with at least 6 menu items.
4. Provides a user guide showing how to use the application, explains how the concept for your application was developed, and provides detailed testing for all components and functions used in your application.
5. Your menu should check for user entry errors and be prompted for input again if needed.
6. Code must be written in Python.
7. Code must be written in the Cloud9 AWS environment provided.
8. Use boto3 as the main library using the AWS service.
9. Include code comments and document with who did what.
10. Test to make sure all functions, branches and functionality works.

User Guide

This program provides a simple command-line driven interface for a user to do online shopping. The idea came from the fact that my wife does a lot of online shopping and she loves searching for items, adding them to her cart, and checking out with the items in the cart. The program lets the user shop for various household items and add individual items to a shopping cart. When the user is ready to check out, they will check out any items in their cart and those items will be added to a .txt file in S3. The user can also choose to empty the cart and delete the content in the S3 .txt file. When the application is launched, the user will see the following screen:

Figure 1

Screen capture showing main menu of program.



Note. From Cloud9 terminal.

When the user first launches the program, the program will attempt to create a table in the DynamoDB database and populate the table with records of items that can be bought. If the table already exists and the records are already present, the program will continue to the main screen without any issues.

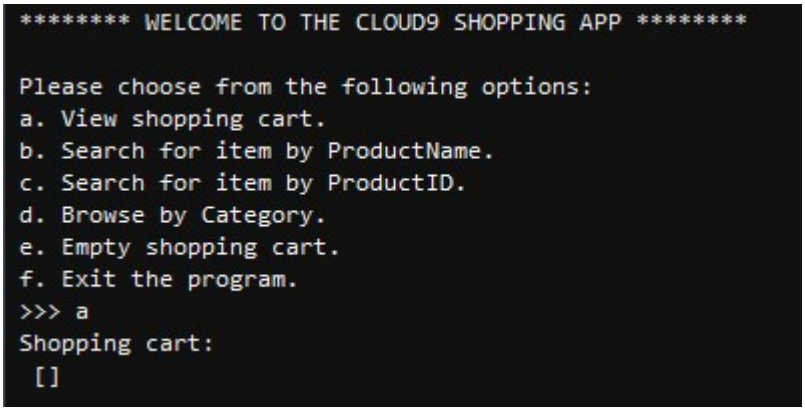
Next, the program welcomes the user to the Cloud9 Shopping App. The user will then see a menu of possible options. The user will enter the letter choice and hit 'Enter'. The available options are:

a. View shopping cart
b. Search for item by ProductName
c. Search for item by ProductID
d. Browse by Category
e. Empty shopping cart
f. Exit the program

If the user chooses to view the shopping cart, they will be presented with the shopping cart. If the cart is empty, the menu will show a set of empty brackets:

Figure 2

Screen capture showing shopping cart.

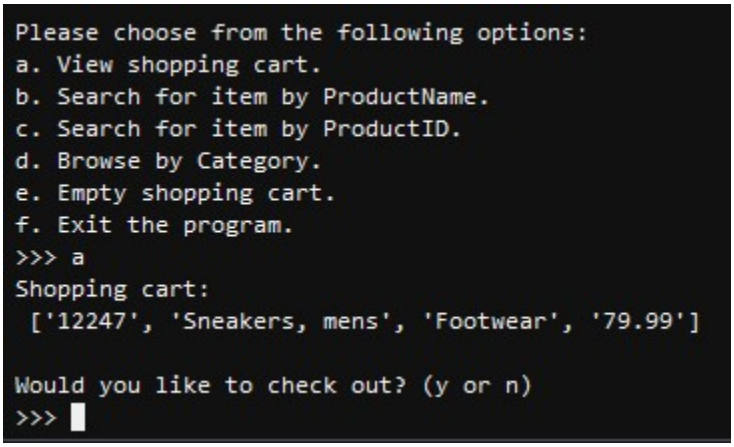


Note. From Cloud9 terminal.

If there are items in the cart, the items will be shown, and the user will be asked if they want to check out:

Figure 3

Screen capture showing shopping cart.



Note. From Cloud9 terminal.

If the user decides to check out, the items will be written to the shopping_cart.txt file sitting in the S3 bucket shopping-cart-bucket.

Figure 4

Screen capture showing shopping cart.

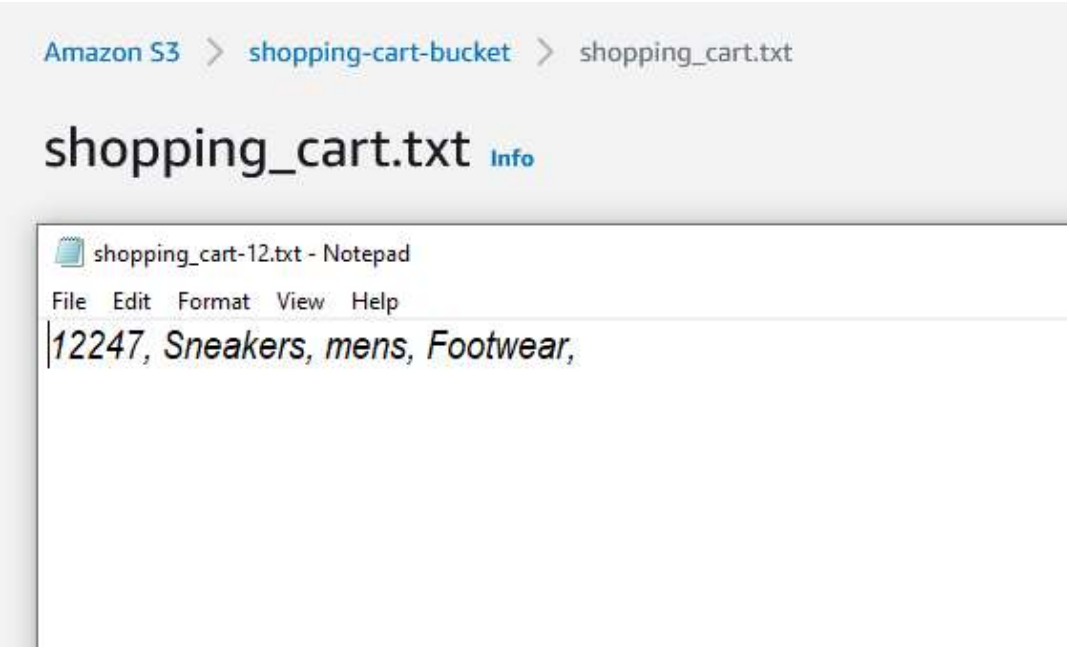
```
>>> a
Shopping cart:
 ['12247', 'Sneakers, mens', 'Footwear', '79.99']

Would you like to check out? (y or n)
>>> y
Items checked out:
12247, Sneakers, mens, Footwear,
```

Note. From Cloud9 terminal.

The shopping_cart.txt file has been updated in S3:

Figure 5

Screen capture showing S3 object updated.

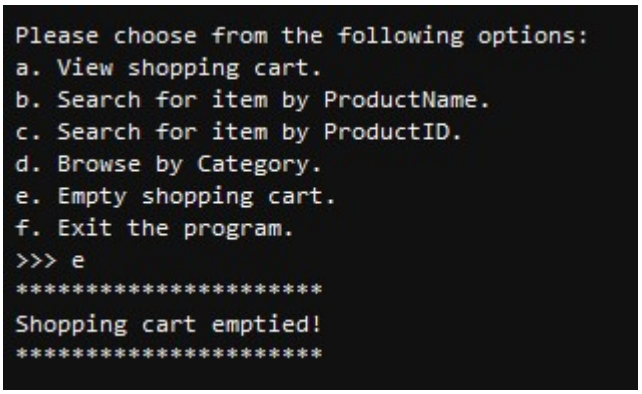


Note. From S3 window.

Now the user can choose to empty the shopping cart. If they do this, the contents of the shopping_cart.txt file will also be erased.

Figure 6

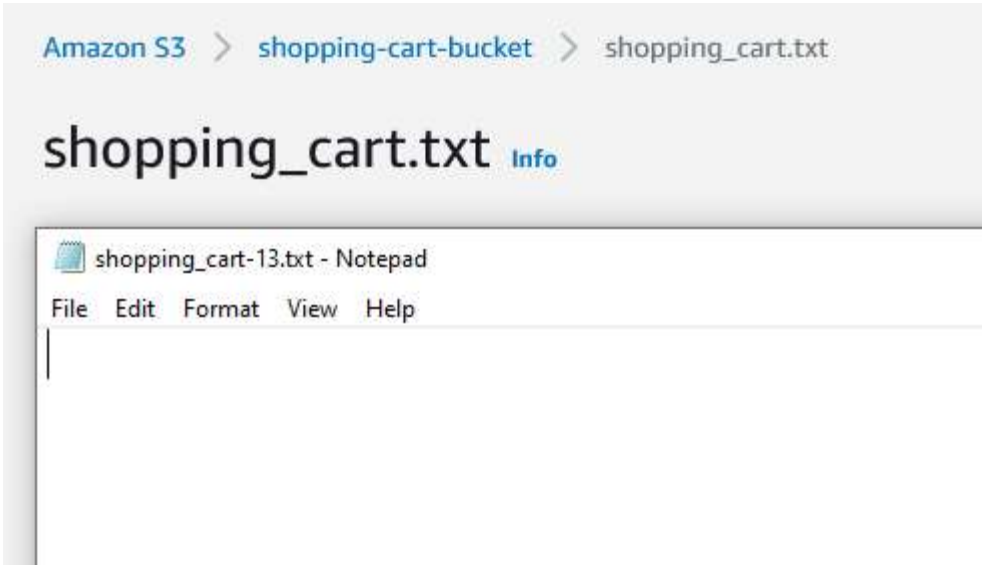
Screen capture showing shopping cart emptied.



Note. From Cloud9 terminal.

Figure 7

Screen capture showing S3 object updated.

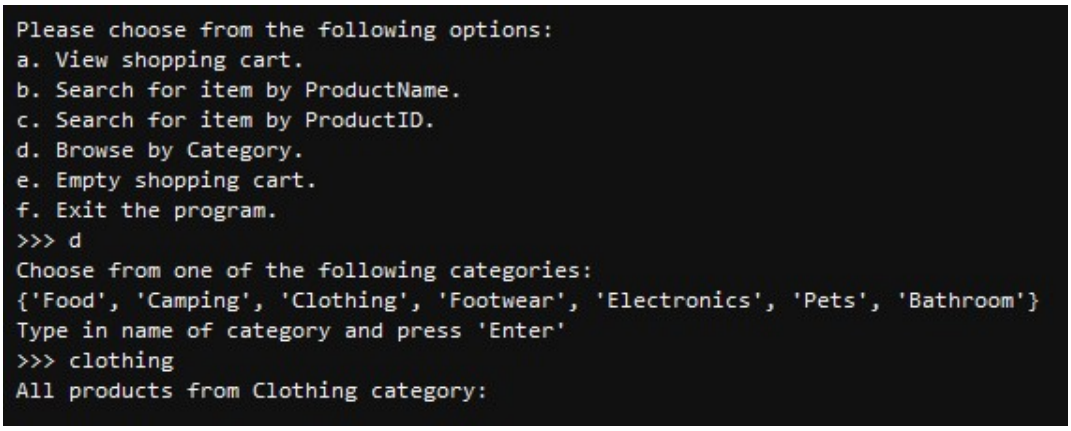


Note. From S3 window.

Additionally, the user can choose to browse available products by Category by choosing option D. They can then choose a Category by typing in the Category name and hitting ‘Enter’:

Figure 8

Screen capture showing Categories.

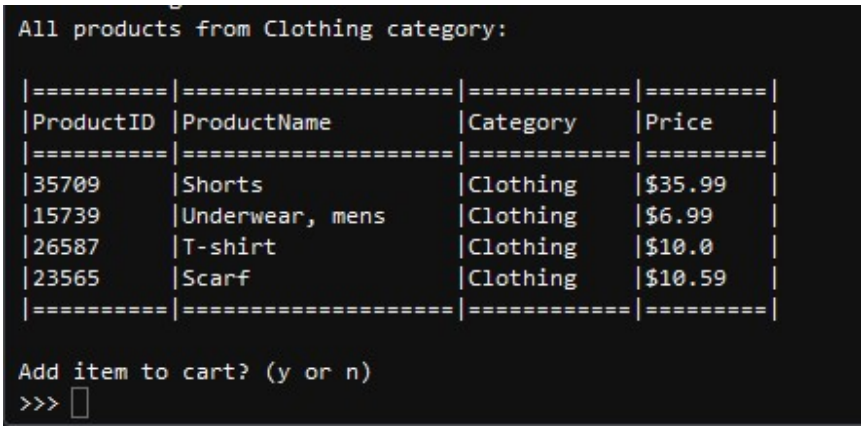


Note. From Cloud9 terminal.

The menu will then show all available products from that Category. The user has the option of adding an item to their cart:

Figure 9

Screen capture showing products from Category Clothing.

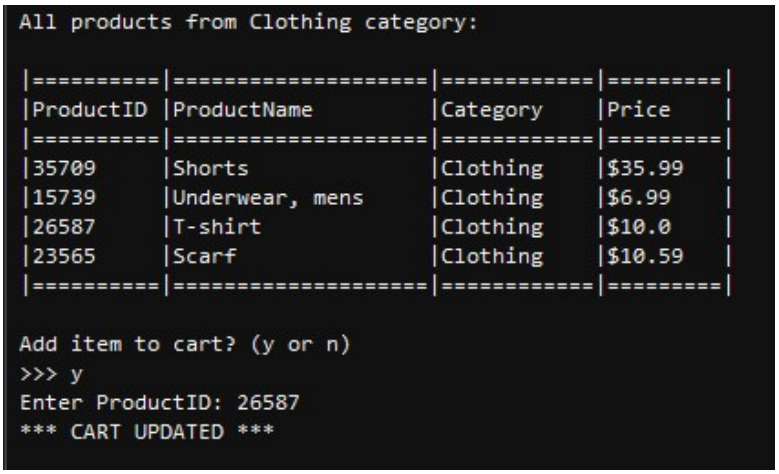


Note. From Cloud9 terminal.

If the user wants to add an item to their cart, they will be asked to enter the ProductID:

Figure 10

Screen capture showing product being added to cart.

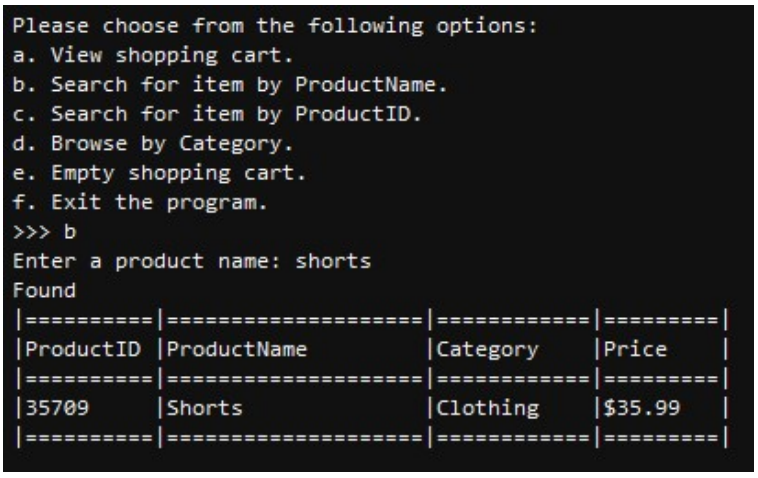


Note. From Cloud9 terminal.

Additionally, the user can search for a particular item by its ProductName or ProductID. To search by ProductName, the user enters B on the main menu and types in the ProductName:

Figure 11

Screen capture showing search by ProductName.

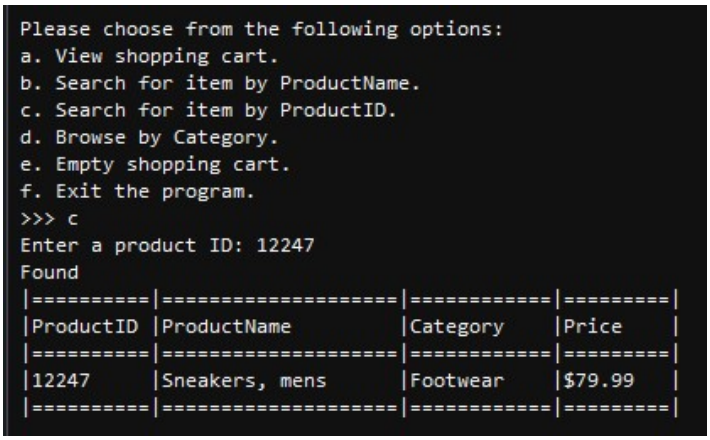


Note. From Cloud9 terminal.

To search by ProductID, the user enters C on the main menu and types in the ProductID:

Figure 12

Screen capture showing search by ProductID.

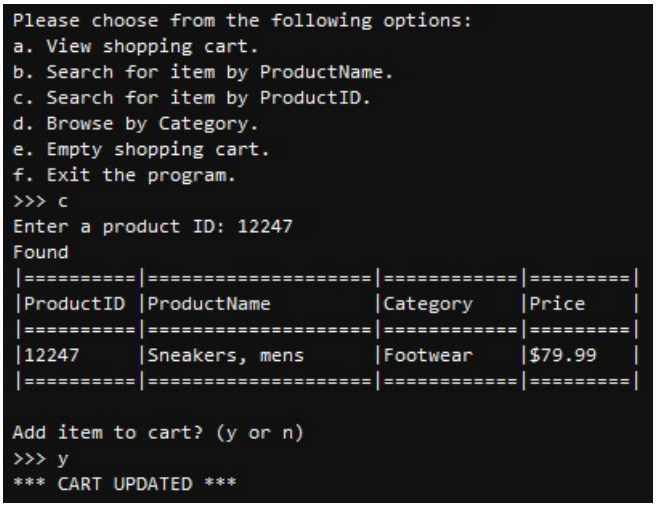


Note. From Cloud9 terminal.

Whether searching by ProductName or ProductID, the user will be asked if they want to add the item to their cart:

Figure 13

Screen capture showing product being added to cart.

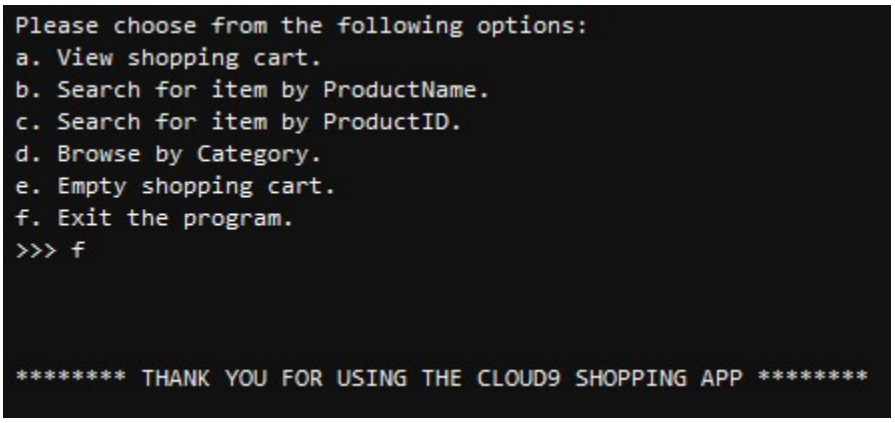


Note. From Cloud9 terminal.

The user can choose to exit the program with option F:

Figure 14

Screen capture showing the program being exited.

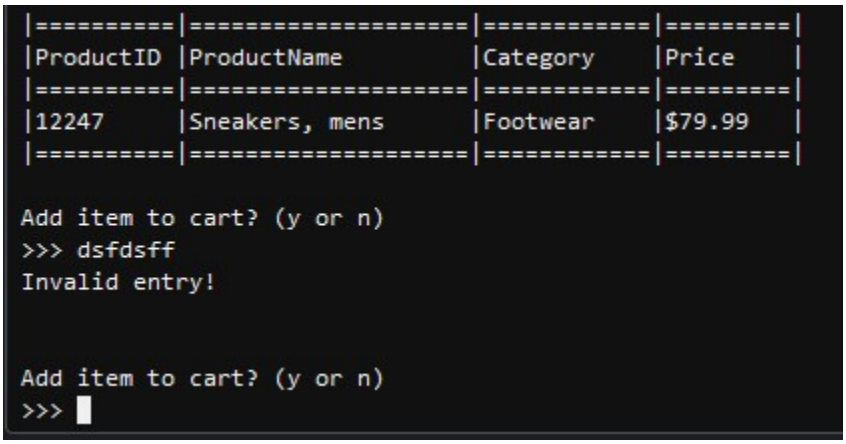


Note. From Cloud9 terminal.

If the user enters any invalid input at any time, the program will let the user know, for example, if the program asks if the user wants to add an item to the cart and the user enters something other than ‘y’ or ‘n’:

Figure 15

Screen capture showing product being added to cart.



Note. From Cloud9 terminal.