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SUBJECT- PYTHON PROJECT
TOPIC- RESTAURANT BILL MANAGEMENT

PROJECT DESCRIPTION

Topic: Restaurant Management System
About: It is a project that enables you to manage the functioning of a restaurant or any other food related business. It creates a systematic and standardized record of the menu of the restaurant.

File Created

Menu Information:

Filename → **Menu.dat**

Used to store all the items provided by the restaurant and their respective prices.

Modules Imported

```
import pickle
import os
```

Pickle Module:
Python pickle module is used for serializing and de-serializing a Python object structure. Any object in Python can be pickled so that it can be saved on disk.

"**Pickling**" is a way to convert a python object(list, dict, etc.) into a byte stream using dump() function. This character stream contains all the information necessary to reconstruct the object in another python script.

- pickle.dump(object, file)- Writes the pickled representation of the object to the open file.

“**Unpickling**” is the inverse operation, through which a byte stream(from a binary file) is converted back into an object hierarchy using the load() function.

- pickle.load(file)- Reads the pickled representation of an object from the open file and returns the python object.

OS Module:

The OS module in python provides functions for interacting with the operating system, OS, comes under Python’s standard utility modules. This module provides a portable way of using operating system dependent functionality.

- os.rename(old, new)- Changes the name of existing file to new.
- os.remove(path)- Deletes the file whose path is specified.

Methods Created

1) showMenu: This method is used to see the contents of the menu.
2) sortMenu: This method is used to see the contents of the menu sorted by their serial numbers.
3) searchItem: This method is used to search for an Item within the menu.
4) deleteItem: This method is used to delete an Item with the menu.
5) modifyItem: This method is used to modify an Item within the menu ,i.e., to change the contents of an Item.
6) costOrder: This method is used to place an order and find the total cost of that order.

THE PROGRAM

```
import pickle
import os
```

```
def showMenu():
    f = open('Menu. dat', 'rb')
    try:
        while True:
            l = pickle.load(f)
            print(1)
    except EOFError:
        pass
    finally:
        f.close()
```

```
def searchItem():
    sortMenu()
    n = input('Enter the name of the item: ')
    f = open('Menu.dat', "rb")
    c = 0
    try:
        while True:
            l = pickle.load(f)
            if n.lower() == l[1].lower():
                print('The details of the item is', 1)
                c += 1
                break
    except EOFError:
        if c == 0:
            print("Sorry the searched item does not exist")
    finally:
        f.close()
```

```
def sortMenu():
    f = open('Menu. dat', 'rb')
    lt = []
    atl = []
    s = 0
    c = 0
    try:
        while True:
            l = pickle.load(f)
            s += 1
            lt += 1
    except EOFError:
        pass
    finally:
        pass
    for i in range(0, len(lt) - 1, 3):
        k = len(lt)  # a random Large number if k>It[i]:
        if k > lt[i]:
            k = lt[i]
            atl.append(k)
    else:
        atl.sort()
    for h in range(s):
        for j in range(0, len(lt) - 1, 3):
            if atl[c] == lt[j]:
                tlk = []
                for m in range(3):
                    tlk.append(lt[j + m])
                else:
                    print(tlk)
                    c += 1
                    break
```

```
def addItem():
    f = open('Menu.dat', 'ab')
    while True:
        fno = int(input("Enter food serial no.: "))
        fname = input("Enter food name: ")
        fprice = int(input("Enter price of food: "))
        k = input("Add More?,y/n: ")

        l0 = [fno, fname, fprice]
        pickle.dump(l0, f)
        if k.lower() == 'n':
            break
    f.close()
    sortMenu()
```

```
def deleteItem():
    f = open('Menu.dat', 'rb')
    f1 = open('Temp. dat', 'wb')
    k = input('Enter food name: ')
    try:
        while True:
            l = pickle.load(f)
            if l[1].lower() != k.lower():
                pickle.dump(1, f1)
    except EOFError:
        pass
    finally:
        f.close()
        f1.close()
    os.remove('Menu.dat')
    os.rename('Temp.dat', 'Menu. dat')
    sortMenu()
```

```
def costOrder():
    L = []
    while True:
        sortMenu()
        pds = int(input("Enter the serial number of the products you would like to order?"))
        L.append(pds)
        k = input("Would you like to order more? y/n")
        if k.lower() == 'n':
            break
        Cst = 0
        f = open('Menu.dat', 'rb')
        try:
            while True:
                l = pickle.load(f)
                if l[0] in L:
                    Cst += l[2]
        except EOFError:
            pass
        finally:
            print('The total cost of your order is', Cst)
            f.close()
```

```
def modifyItem():
    sortMenu()
    n = int(input('Enter the serial no. of the item to be changed: '))
    n1 = int(input('Enter new serial no.: '))
    nm1 = input('Enter new name: ')
    p1 = int(input('Enter new price: '))
    l1 = [n1, nm1, p1]
    f = open('Menu.dat', 'rb')
    f1 = open('Temp. dat', 'wb')
    try:
        while True:
            l = pickle.load(f)
            if n == l[0]:
                l = l1
                pickle.dump(l, f1)
    except EOFError:
        pass
    finally:
        f.close()
        f1.close()
    os.remove('Menu.dat')
    os.rename('Temp. dat', 'Menu.dat')
    sortMenu()
```

```
def costOrder():
    L = []
    while True:
        sortMenu()
        pds = int(input("Enter the serial number of the products you would like to order?"))
        L.append(pds)
        k = input("Would you like to order more? y/n")
        if k.lower() == 'n':
            break
        Cst = 0
        f = open('Menu.dat', 'rb')
        try:
            while True:
                l = pickle.load(f)
                if l[0] in L:
                    Cst += l[2]
        except EOFError:
            pass
        finally:
            print('The total cost of your order is', Cst)
            f.close()
```

```
while True:
    n = int(input('Enter 0 to see the Menu (unsorted) \
    Enter 1 to see the Menu(sorted) \
    Enter 2 to search for an item \
    Enter 3 to place an order \
    Enter 4 to add an item \
    Enter 5 to remove an item \
    Enter 6 to modify an item: '))
    if n == 0:
        showMenu()
    elif n == 1:
        sortMenu()
    elif n == 2:
        searchItem()
    elif n == 3:
        costOrder()
    elif n == 4:
        addItem()
    elif n == 5:
        deleteItem()
    elif n == 6:
        modifyItem()
    else:
        print('Please only enter the specified no.s')
    k = input('Make more changes?, y or n:')
    if k.lower() == 'n':
        break
```

OUTPUTS

1) To see the Menu(unsorted):

```
Enter 0 to see the Menu(unsorted)              Enter 1 to see the Menu(sorted)              Enter 2 to search for an item
Enter 3 to place an order              Enter 4 to add an item              Enter 5 to remove an item              Ente
r 6 to modify an item: 0
[1, 'Burger', 89]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[2, 'Pizza', 399]
[5, 'Ice Cream', 59]
Make more changes?, y or n:n
```

2) To see the Menu(sorted):

```
Enter 0 to see the Menu(unsorted)              Enter 1 to see the Menu(sorted)              Enter 2 to search for an item
Enter 3 to place an order              Enter 4 to add an item              Enter 5 to remove an item              Ente
r 6 to modify an item: 1
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
Make more changes?, y or n:n
```

3) To search for an item within the Menu:

```
Enter 0 to see the Menu(unsorted)              Enter 1 to see the Menu(sorted)              Enter 2 to search for an item
Enter 3 to place an order              Enter 4 to add an item              Enter 5 to remove an item              Ente
r 6 to modify an item: 2
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
Enter the name of the item: PIZZA
The details of the item is [2, 'Pizza', 399]
Make more changes?, y or n:n
```

4) To place an order:

```
Enter 0 to see the Menu(unsorted)                Enter 1 to see the Menu(sorted)                Enter 2 to search for an item
Enter 3 to place an order                Enter 4 to add an item                Enter 5 to remove an item                Ente
r 6 to modify an item: 3
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
Enter the serial number of the products you would like to order?2
Would you like to order more? y/ny
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
Enter the serial number of the products you would like to order?5
Would you like to order more? y/nn
The total cost of your order is 458
Make more changes?, y or n:n
```

5) To add an item and its details in the Menu:

```
Enter 0 to see the Menu(unsorted)                Enter 1 to see the Menu(sorted)                Enter 2 to search for an item
Enter 3 to place an order                Enter 4 to add an item                Enter 5 to remove an item                Ente
r 6 to modify an item: 4
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
Enter food serial no.: 6
Enter food name: Pasta
Enter price of food: 79
Add More?,y/n: y
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
Enter food serial no.: 7
Enter food name: Fried Rice
Enter price of food: 149
Add More?,y/n: n
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
[6, 'Pasta', 79]
[7, 'Fried Rice', 149]
Make more changes?, y or n:n
```

6) To remove an item from the Menu:

```
Enter 0 to see the Menu(unsorted)                Enter 1 to see the Menu(sorted)                Enter 2 to search for an item
Enter 3 to place an order                Enter 4 to add an item                Enter 5 to remove an item                Ente
r 6 to modify an item: 5
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
[6, 'Pasta', 79]
[7, 'Fried Rice', 149]
Enter food name: Pasta
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
[7, 'Fried Rice', 149]
Make more changes?, y or n:n
```

7) To change the details of an item from the Menu:

```
Enter 0 to see the Menu(unsorted)                Enter 1 to see the Menu(sorted)                Enter 2 to search for an item
Enter 3 to place an order                Enter 4 to add an item                Enter 5 to remove an item                Ente
r 6 to modify an item: 6
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
[7, 'Fried Rice', 149]
Enter the serial no. of the item to be changed: 7
Enter new serial no.: 6
Enter new name: Fried Rice
Enter new price: 159
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
[6, 'Fried Rice', 159]
Make more changes?, y or n:n
```

8) To search for an item from the Menu and then order it:

```
Enter 0 to see the Menu(unsorted)               Enter 1 to see the Menu(sorted)               Enter 2 to search for an item
Enter 3 to place an order               Enter 4 to add an item               Enter 5 to remove an item               Ente
r 6 to modify an item: 2
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
[6, 'Fried Rice', 159]
Enter the name of the item: Fried rice
The details of the item is [6, 'Fried Rice', 159]
Make more changes?, y or n:y
Enter 0 to see the Menu(unsorted)               Enter 1 to see the Menu(sorted)               Enter 2 to search for an item
Enter 3 to place an order               Enter 4 to add an item               Enter 5 to remove an item               Ente
r 6 to modify an item: 3
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
[6, 'Fried Rice', 159]
Enter the serial number of the products you would like to order?6
Would you like to order more? y/nn
The total cost of your order is 159
Make more changes?, y or n:n
```

9) To see both the sorted and unsortedMenu:

```
Enter 0 to see the Menu(unsorted)               Enter 1 to see the Menu(sorted)               Enter 2 to search for an item
Enter 3 to place an order               Enter 4 to add an item               Enter 5 to remove an item               Ente
r 6 to modify an item: 0
[1, 'Burger', 89]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[2, 'Pizza', 399]
[5, 'Ice Cream', 59]
[6, 'Fried Rice', 159]
Make more changes?, y or n:y
Enter 0 to see the Menu(unsorted)               Enter 1 to see the Menu(sorted)               Enter 2 to search for an item
Enter 3 to place an order               Enter 4 to add an item               Enter 5 to remove an item               Ente
r 6 to modify an item: 1
[1, 'Burger', 89]
[2, 'Pizza', 399]
[3, 'Lemonade', 29]
[4, 'French Fries', 89]
[5, 'Ice Cream', 59]
[6, 'Fried Rice', 159]
Make more changes?, y or n:n
```