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Course: CSC 500 – Principles of Programming

Module: 6 – Portfolio Assignment

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Python3 Code ~

# COPY THIS LINE OF CODE - BEGINNING

class ItemToProcure:

def \_\_init\_\_(self, product\_name="none", dollar\_value\_of\_item=0, numerical\_quantity\_of\_product=0):

self.product\_name = product\_name

self.dollar\_value\_of\_item = dollar\_value\_of\_item

self.numerical\_quantity\_of\_product = numerical\_quantity\_of\_product

def console\_log\_item\_cost(self):

total\_cost = self.dollar\_value\_of\_item \* self.numerical\_quantity\_of\_product

print(f"{self.product\_name} {self.numerical\_quantity\_of\_product} @ ${self.dollar\_value\_of\_item} = ${total\_cost}")

def initial\_item\_to\_cart(cart):

print("Enter the details of the first item:")

item\_name = input("Whats the name of the item:\n")

item\_dollar\_value = float(input(f"Whats the dollar value of the {item\_name}:\n"))

item\_quantity = int(input(f"Whats the quantity of the {item\_name}:\n"))

item = ItemToProcure(item\_name, item\_dollar\_value, item\_quantity)

cart.add\_item(item)

print("\nHERE IS THE TOTAL COST OF THE ITEM")

item.console\_log\_item\_cost()

total\_cost = cart.get\_cost\_of\_cart()

print(f"\nTotal: ${total\_cost}")

class ShoppingCart:

def \_\_init\_\_(self, grocery\_shoppers\_name="none", todays\_shopping\_date="January 1, 2020"):

self.grocery\_shoppers\_name = grocery\_shoppers\_name

self.todays\_shopping\_date = todays\_shopping\_date

self.cart\_items = []

def add\_item(self, item: ItemToProcure):

self.cart\_items.append(item)

def remove\_item(self, product\_name: str):

found = False

for item in self.cart\_items:

if item.product\_name == product\_name:

self.cart\_items.remove(item)

found = True

break

if not found:

print("The Item to be Removed, wasn't found in the cart, So nothing was REMOVED.")

def modify\_item(self, item\_to\_modify: ItemToProcure):

found = False

for item in self.cart\_items:

if item.product\_name == item\_to\_modify.product\_name:

if item\_to\_modify.dollar\_value\_of\_item != 0:

item.dollar\_value\_of\_item = item\_to\_modify.dollar\_value\_of\_item

if item\_to\_modify.numerical\_quantity\_of\_product != 0:

item.numerical\_quantity\_of\_product = item\_to\_modify.numerical\_quantity\_of\_product

found = True

break

if not found:

print("The Item to be Modified, wasn't found in the cart, So nothing was MODIFIED.")

def get\_num\_items\_in\_cart(self) -> int:

total\_quantity = sum(item.numerical\_quantity\_of\_product for item in self.cart\_items)

return total\_quantity

def get\_cost\_of\_cart(self) -> float:

total\_cost = sum(item.dollar\_value\_of\_item \* item.numerical\_quantity\_of\_product for item in self.cart\_items)

return total\_cost

def print\_total(self):

print(f"{self.grocery\_shoppers\_name}'s Shopping Cart - {self.todays\_shopping\_date}")

if not self.cart\_items:

print("THERE IS NOTHING IN THE SHOPPING CART, IT IS EMPTY!")

else:

print(f"Total Number of Items in the Shopping Cart: {self.get\_num\_items\_in\_cart()}")

for item in self.cart\_items:

item.console\_log\_item\_cost()

print(f"\nTotal Cost of the Cart: ${self.get\_cost\_of\_cart()}")

def print\_descriptions(self):

print(f"{self.grocery\_shoppers\_name}'s Shopping Cart - {self.todays\_shopping\_date}")

print("Item Descriptions")

for item in self.cart\_items:

print(f"{item.product\_name}: {item.dollar\_value\_of\_item}")

def print\_menu(cart: ShoppingCart):

menu = """

MENU

ADD - Add item to cart

REMOVE - Remove item from cart

MODIFY - Modify item quantity

IDENTIFY - Output items' descriptions

OUTPUT - Output shopping cart

QUIT - Quit

"""

while True:

print(menu)

choice = input(f"{cart.grocery\_shoppers\_name}, choose an option to edit your shopping cart:\n")

if choice == 'QUIT':

break

elif choice == 'ADD':

name = input(f"{cart.grocery\_shoppers\_name}, what's the name of the item to add to the existing shopping cart:\n")

price = float(input(f"{cart.grocery\_shoppers\_name}, what's the price of the {name} being added to the existing shopping cart:\n"))

quantity = int(input(f"{cart.grocery\_shoppers\_name}, what's the quantity of the {name} being added to the existing shopping cart:\n"))

new\_item = ItemToProcure(name, price, quantity)

cart.add\_item(new\_item)

elif choice == 'REMOVE':

name = input(f"{cart.grocery\_shoppers\_name}, what's the name of the item to remove from the existing shopping cart:\n")

cart.remove\_item(name)

elif choice == 'MODIFY':

name = input(f"{cart.grocery\_shoppers\_name}, what's the name of the item to modify in the existing shopping cart:\n")

price = float(input(f"{cart.grocery\_shoppers\_name}, what's the new price of {name} (or 0 to leave unchanged):\n"))

quantity = int(input(f"{cart.grocery\_shoppers\_name}, what's the new quantity of {name} (or 0 to leave unchanged):\n"))

modified\_item = ItemToProcure(name, price, quantity)

cart.modify\_item(modified\_item)

elif choice == 'IDENTIFY':

cart.print\_descriptions()

elif choice == 'OUTPUT':

cart.print\_total()

def main():

grocery\_shoppers\_name = input("What's the Grocery Shoppers Name:\n")

todays\_shopping\_date = input("What's the Date of the Grocery Shopping [Format ex: Aug 20, 2024]:\n")

cart = ShoppingCart(grocery\_shoppers\_name, todays\_shopping\_date)

initial\_item\_to\_cart(cart) # Only one item is initially added

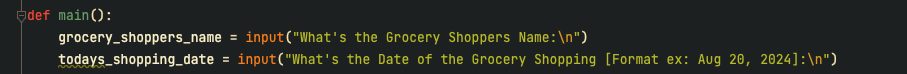
print\_menu(cart) # Proceed with the menu

if \_\_name\_\_ == "\_\_main\_\_":

main()

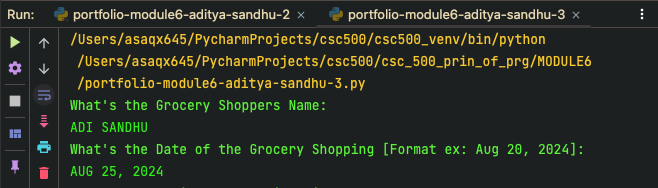
# COPY THIS LINE OF CODE – ENDING

"Screenshot 1," "Main Function Line one and two execution, Input Prompt from user”

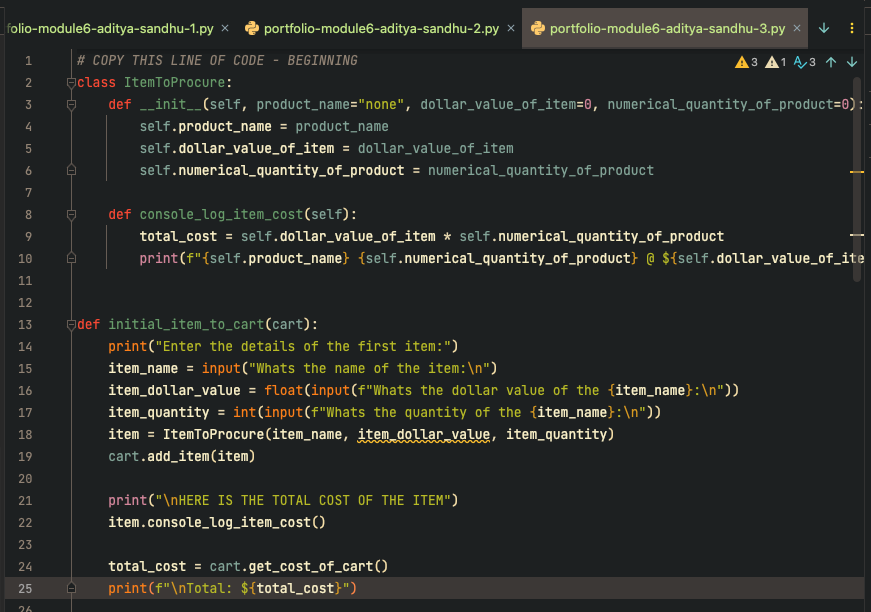


Asking for the Grocery Shoppers Name and the format of the data when the shopping is occurring

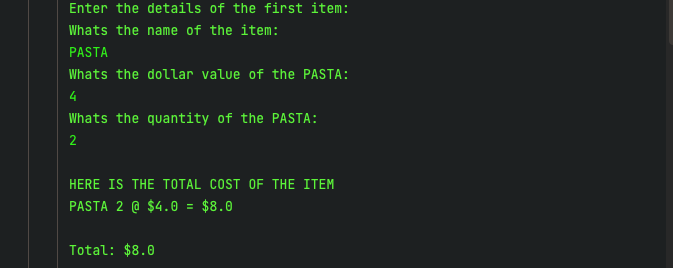
“Screenshot 2”, “Output of the Name and Date Input from Shopper”



“Screenshot 3”, “The ItemToProcure Function and its Cart Creation Logic”



“Screenshot 4”, “Output on the Concole of the Class ItemToProcure”





“Screenshot 5”, “The Class ShoppingCart, that is subsequently passed to print\_menu function”

GITHUB LINK - <https://github.com/65AR645ASAN/csc_500_prin_of_prg/blob/main/MODULE5/critical-thinking-assignment-module5-aditya-sandhu.docx>

**APA citations**

1. GeeksforGeeks. (n.d.). \*Python if...else\*. GeeksforGeeks. Retrieved August 16, 2024, from [https://www.geeksforgeeks.org/python-if-else/](https://www.geeksforgeeks.org/python-if-else/)

2. Corey Schafer. (2018, January 19). \*Python Tutorial: If \_\_name\_\_ == '\_\_main\_\_'\*. [Video]. YouTube. [https://www.youtube.com/watch?v=lQzurQm\_YKU](https://www.youtube.com/watch?v=lQzurQm\_YKU)

3. DataCamp. (n.d.). \*How to use elif statements in Python\*. DataCamp. Retrieved August 16, 2024, from [https://www.datacamp.com/tutorial/elif-statements-python](https://www.datacamp.com/tutorial/elif-statements-python)

4. w3resource. (n.d.). \*Python if...else statements\*. w3resource. Retrieved August 16, 2024, from [https://www.w3resource.com/python/python-if-else-statements.php#if-statement](https://www.w3resource.com/python/python-if-else-statements.php#if-statement)