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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\_product=0, numerical\_quantity\_of\_product=0):

self.product\_name = product\_name

self.dollar\_value\_of\_product = dollar\_value\_of\_product

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

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

totatl\_grocery\_cart\_cost = self.dollar\_value\_of\_product \* self.numerical\_quantity\_of\_product

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

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

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

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

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

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

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

cart.add\_product(item)

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

item.console\_log\_product\_cost()

totatl\_grocery\_cart\_cost = cart.get\_cost\_of\_cart()

print(f"\nTotal: ${totatl\_grocery\_cart\_cost}")

class GroceryCartAtStore:

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.products\_in\_shopping\_cart = []

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

self.products\_in\_shopping\_cart.append(item)

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

found = False

for item in self.products\_in\_shopping\_cart:

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

self.products\_in\_shopping\_cart.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 adjust\_item(self, product\_to\_modify: ItemToProcure):

found = False

for item in self.products\_in\_shopping\_cart:

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

if product\_to\_modify.dollar\_value\_of\_product != 0:

item.dollar\_value\_of\_product = product\_to\_modify.dollar\_value\_of\_product

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

item.numerical\_quantity\_of\_product = product\_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.products\_in\_shopping\_cart)

return total\_quantity

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

totatl\_grocery\_cart\_cost = sum(item.dollar\_value\_of\_product \* item.numerical\_quantity\_of\_product for item in self.products\_in\_shopping\_cart)

return totatl\_grocery\_cart\_cost

def total\_output(self):

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

if not self.products\_in\_shopping\_cart:

print("THERE IS NOTHING IN THE Grocery Cart, IT IS EMPTY!")

else:

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

for item in self.products\_in\_shopping\_cart:

item.console\_log\_product\_cost()

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

def print\_descriptions(self):

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

print("Item Descriptions")

for item in self.products\_in\_shopping\_cart:

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

def print\_menu(cart: GroceryCartAtStore):

menu = """

MENU

ADD - Add item to cart

REMOVE - Remove item from cart

MODIFY - Modify item quantity

IDENTIFY - Output items' descriptions

OUTPUT - Output Grocery Cart

QUIT - Quit

"""

while True:

print(menu)

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

if choice == 'QUIT':

break

elif choice == 'ADD':

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

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

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

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

cart.add\_product(new\_item)

elif choice == 'REMOVE':

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

cart.remove\_product(name)

elif choice == 'MODIFY':

name = input(f"{cart.grocery\_shoppers\_name}, what's the description of the item to modify in the existing Grocery 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.adjust\_item(modified\_item)

elif choice == 'IDENTIFY':

cart.print\_descriptions()

elif choice == 'OUTPUT':

cart.total\_output()

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 = GroceryCartAtStore(grocery\_shoppers\_name, todays\_shopping\_date)

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

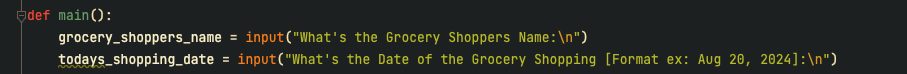
print\_menu(cart) # Proceed with the menu

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

main()

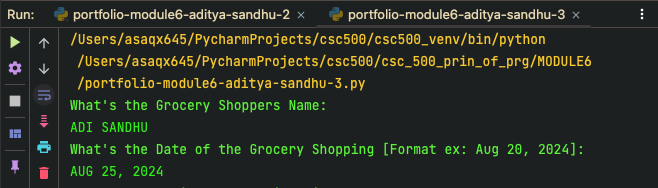
# COPY THIS LINE OF CODE - ENDING

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

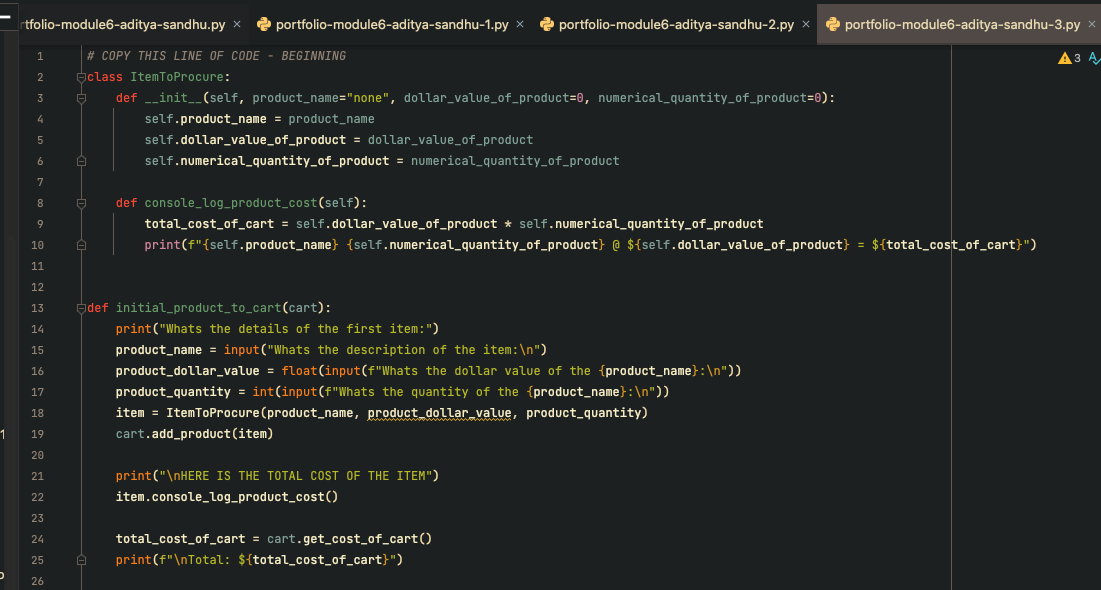


Asking for the Grocery Shoppers Name and the format of the data when the shopping is occurring

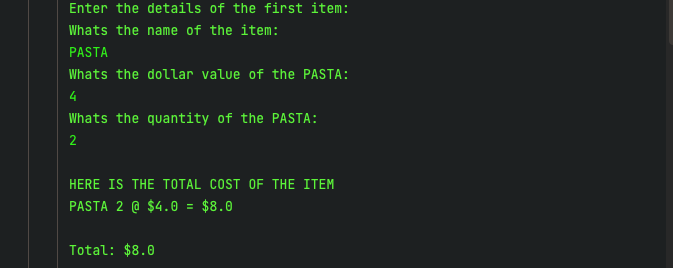
“Screenshot 2”, “Output of the Name and Date Input from Shopper”



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



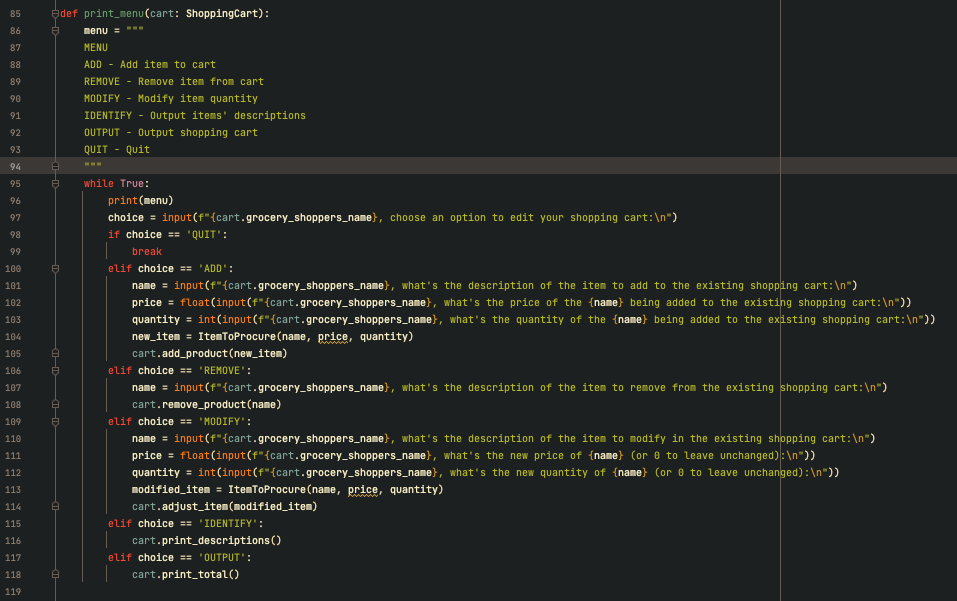
“Screenshot 4”, “Output on the Concole of the Class ItemToProcure”



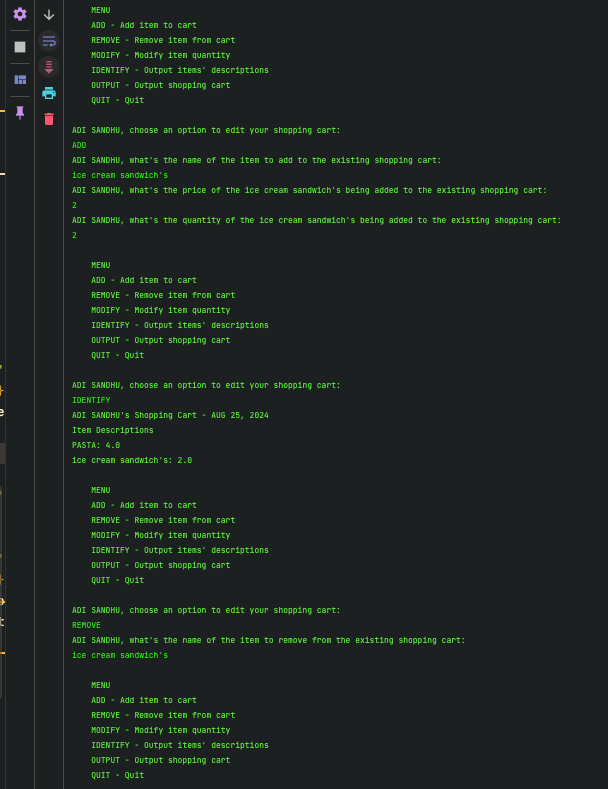
“Screenshot 5”, “The ShoppingCart Class, that has the add item, remove item, modify item, get num of items in shopping cart, cost of cart, print tota and print description functions that are passed to print menu function to display ”



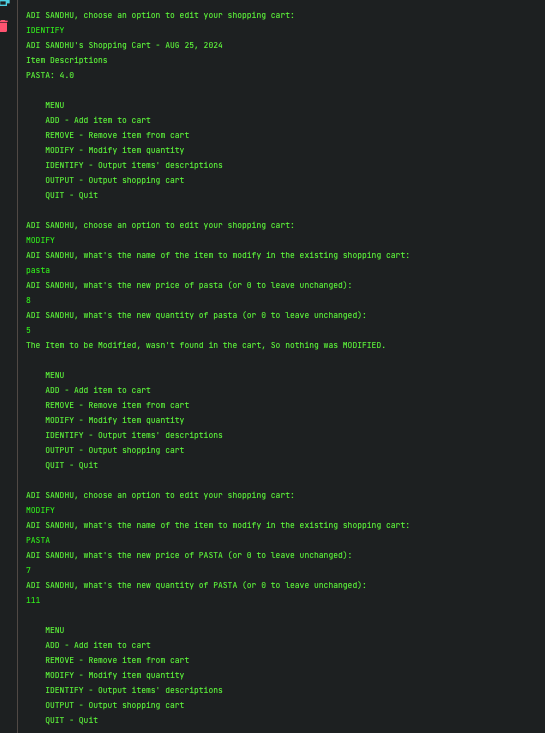
“Screenshot 6”, “The print\_menu function with the menu, and the ‘if, elif control flow that calls the add\_product function, remove\_product, modify\_product, print\_descriptions ,and print\_total function’s’ from the ShoppingCart Class”



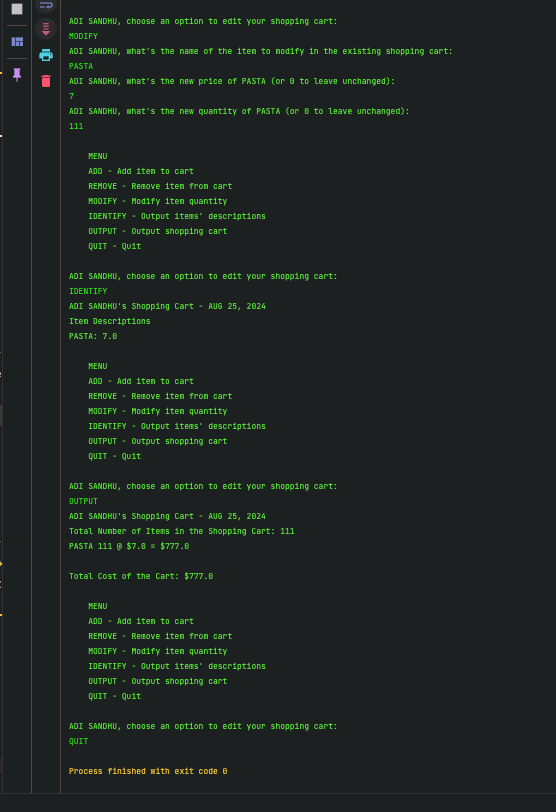
“Screenshot 7”, ”After PASTA Being Added, Menu Displayed, ADD Option Selected via Input, ‘ice cream sandwich’s added, at price 2 and quantity 2, then MENU Displayed again, and IDENTIFY Selected, and CART Displayed with Item Description Function Called. The Menu Displayed again. Next REMOVE Prompt passed to the program, and ice cream sandwich’s removed”



“Screenshot 8”, ”After ice cream sandwich’s are removed, IDENTIFY is passed as an INPUT, to MENU, and the shopping cart is displayed with ice cream sandwich’s no longer part of the cart. Then MENU Displayed again, and MODIFY is Selected, and ‘PASTA’, but in the lower case is passed, and the adjustment is not made, again MODIFY is passed again, with price and quantity 7 and 111 respectively and the adjustment is accepted. MENU is displayed again.”



“Screenshot 9”, ”After the MODIFY function executed, the MENU is dispayed again,and IDENTIFY reveals that the PASTA is at QUANTITY 7, the price was modified to 111 and isn’t displayed, the MENU Displays again, and OUTPUT Selection revels the new Price of PASTA and the totat cost of the cart, then QUIT exits the program”



GITHUB LINK - <https://github.com/65AR645ASAN/csc_500_prin_of_prg/blob/main/MODULE6/portfolio-assignment-module6-aditya-sandhu.docx>

**APA citations:**

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**Sikka, S. (2024, January 24). Python Type Hinting: How To Get Started and Why You Should Use It. Dagster. Retrieved August 25, 2024, from** [**https://dagster.io/blog/python-type-hinting**](https://dagster.io/blog/python-type-hinting)