PROJECT OF DSA:

TOPIC:

E-commerce shopping cart

Code:

```
class Product:
    def __init__(self, product_id, name, price, stock):
        self.product_id = product_id
        self.name = name
        self.price = price
        self.stock = stock

    def __str__(self):
        return f"{self.name} - ${self.price} | Stock: {self.stock}"

class CartItem:
    def __init__(self, product, quantity):
        self.product = product
        self.quantity = quantity

    def total_price(self):
        return self.product.price * self.quantity

    def __str__(self):
        return f"{self.product.name} (x{self.quantity}) - ${self.total_price():.2f}"

class ShoppingCart:
    def __init__(self):
```

```
    self.items = {}

def add_item(self, product, quantity):
    if quantity > product.stock:
        print(f"❌ Not enough stock for {product.name}. Available: {product.stock}.")
        return False

    if product.product_id in self.items:
        self.items[product.product_id].quantity += quantity
    else:
        self.items[product.product_id] = CartItem(product, quantity)

    product.stock -= quantity
    return True

def display_cart(self):
    if not self.items:
        print("🛒 Your cart is empty!")
        return
    print("\n🛍️ Final Shopping Cart:")
    for item in self.items.values():
        print(f"   {item}")
    print(f"💰 Total Amount: ${self.calculate_total():.2f}")
    print("-" * 40)

def calculate_total(self):
    return sum(item.total_price() for item in self.items.values())

def checkout(self):
    if not self.items:
```

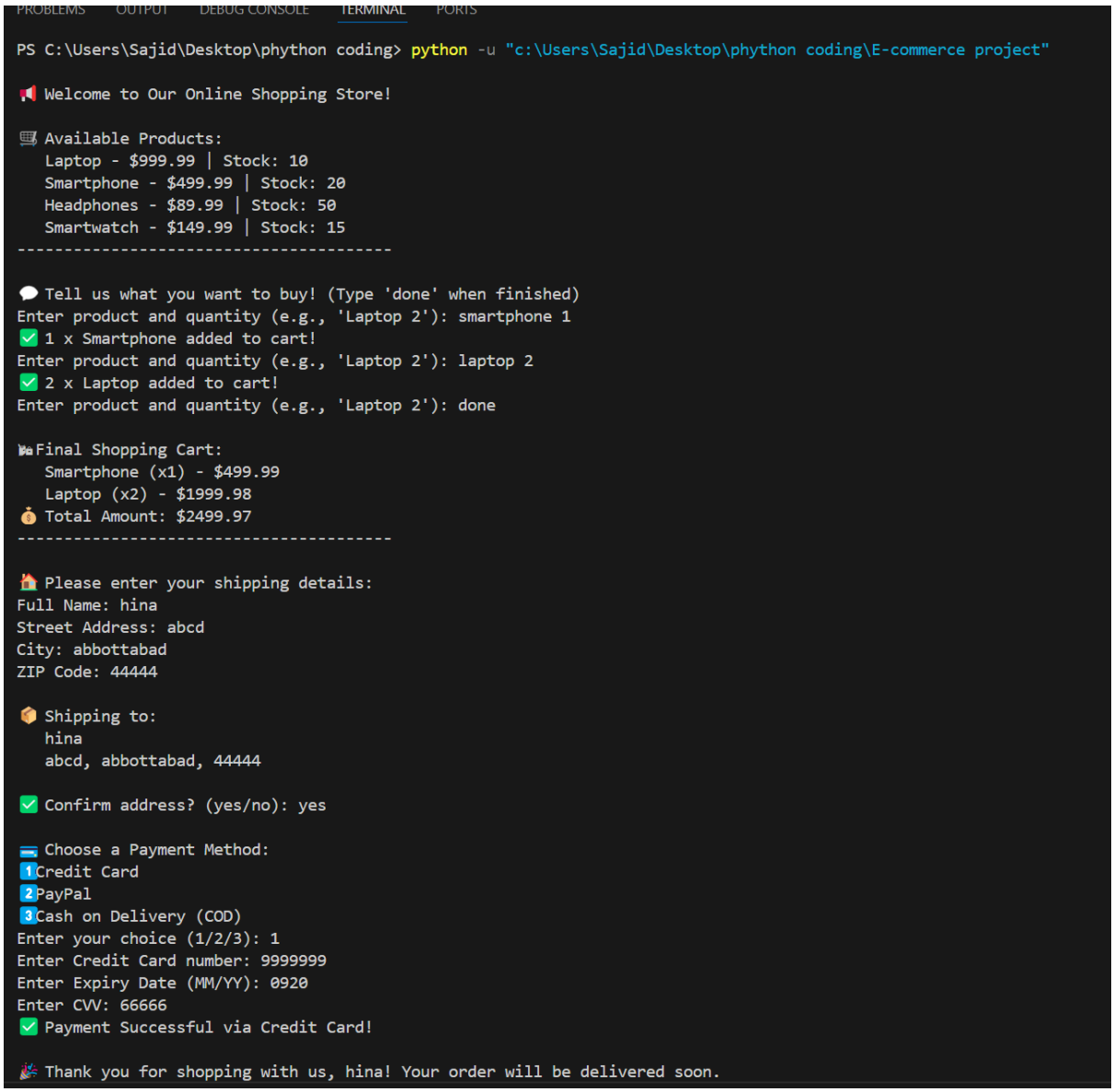
```
    print("⚠ Your cart is empty. Add items before checkout!")
    return

self.display_cart()

# Get shipping address
print("\n🏠 Please enter your shipping details:")
name = input("Full Name: ")
address = input("Street Address: ")
city = input("City: ")
zip_code = input("ZIP Code: ")

print("\n🎁 Shipping to:")
print(f"   {name}")
print(f"   {address}, {city}, {zip_code}")
confirm = input("\n✅ Confirm address? (yes/no): ").strip().lower()

if confirm != "yes":
    print("❌ Order cancelled. Please enter correct address.")
    return

print("\n💳 Choose a Payment Method:")
print("1️⃣ Credit Card")
print("2️⃣ PayPal")
print("3️⃣ Cash on Delivery (COD)")

payment_choice = input("Enter your choice (1/2/3): ")

if payment_choice == "1":
    input("Enter Credit Card number: ")
```

```
            input("Enter Expiry Date (MM/YY): ")
            input("Enter CVV: ")
            print("✅ Payment Successful via Credit Card!")
        elif payment_choice == "2":
            input("Enter your PayPal email: ")
            print("✅ Payment Successful via PayPal!")
        elif payment_choice == "3":
            print("✅ Order placed successfully! Pay in cash upon delivery.")
        else:
            print("❌ Invalid payment option!")

        print(f"\n🎉 Thank you for shopping with us, {name}! Your order will be delivered soon.\n")

def main():
    print("\n🌟 Welcome to E-Commerce Shopping Store! 🛒\n")

    # Available products
    products = [
        Product(1, "Laptop", 999.99, 10),
        Product(2, "Smartphone", 499.99, 20),
        Product(3, "Headphones", 89.99, 50),
        Product(4, "Smartwatch", 149.99, 15)
    ]

    # Display available products
    print("🛒 Available Products:")
    for product in products:
        print(f"  {product}")
    print("-" * 40)
```

```
    # Create shopping cart
    cart = ShoppingCart()

    # User adds items by simply entering product names and quantities
    print("\n🗣 Tell us what you want to buy! (Type 'done' when finished)")

    while True:
        user_input = input("Enter product and quantity (e.g., 'Laptop 2'): ").strip().lower()
        if user_input == "done":
            break

        try:
            name, quantity = user_input.rsplit(" ", 1)
            quantity = int(quantity)
            selected_product = next((p for p in products if p.name.lower() == name), None)

            if selected_product:
                added = cart.add_item(selected_product, quantity)
                if added:
                    print(f"✅ {quantity} x {selected_product.name} added to cart!")
            else:
                print("❌ Product not found. Please try again!")

        except ValueError:
            print("❌ Invalid format! Use: 'ProductName Quantity' (e.g., 'Laptop 2')")

    # Proceed to checkout automatically
    cart.checkout()
```

```
if __name__ == "__main__":
    main()
```

OUTPUT:



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Sajid\Desktop\phython coding> python -u "c:\Users\Sajid\Desktop\phython coding\E-commerce project"

📢 Welcome to Our Online Shopping Store!

🛒 Available Products:
   Laptop - $999.99 | Stock: 10
   Smartphone - $499.99 | Stock: 20
   Headphones - $89.99 | Stock: 50
   Smartwatch - $149.99 | Stock: 15
----------------------------------------

💬 Tell us what you want to buy! (Type 'done' when finished)
Enter product and quantity (e.g., 'Laptop 2'): smartphone 1
✅ 1 x Smartphone added to cart!
Enter product and quantity (e.g., 'Laptop 2'): laptop 2
✅ 2 x Laptop added to cart!
Enter product and quantity (e.g., 'Laptop 2'): done

🛍️ Final Shopping Cart:
   Smartphone (x1) - $499.99
   Laptop (x2) - $1999.98
💰 Total Amount: $2499.97
----------------------------------------

🏠 Please enter your shipping details:
Full Name: hina
Street Address: abcd
City: abbottabad
ZIP Code: 44444

📦 Shipping to:
   hina
   abcd, abbottabad, 44444

✅ Confirm address? (yes/no): yes

💳 Choose a Payment Method:
1️⃣ Credit Card
2️⃣ PayPal
3️⃣ Cash on Delivery (COD)
Enter your choice (1/2/3): 1
Enter Credit Card number: 9999999
Enter Expiry Date (MM/YY): 0920
Enter CVV: 66666
✅ Payment Successful via Credit Card!

🎉 Thank you for shopping with us, hina! Your order will be delivered soon.
```