**PYTHON ASSIGNMENT NO 1**

**ROLL NO: 11**

**Code:**

class Product:

    def \_\_init\_\_(self, name, price, stock):

        """

        Initializes a new product.

        :param name: Name of the product.

        :param price: Price of the product.

        :param stock: Stock quantity of the product.

        """

*self*.name = name

*self*.price = price

*self*.stock = stock

    def update\_stock(self, quantity):

        """

        Updates the stock of the product by adding (or subtracting if negative) the quantity.

        :param quantity: The amount to change the stock by.

        """

*self*.stock += quantity

    def \_\_str\_\_(self):

        """

        Returns a string representation of the product.

        """

        return f"Product: {*self*.name}, Price: ${*self*.price:.2f}, Stock: {*self*.stock}"

def main():

    products = {}  *# Dictionary to store products with the product name as key*

    while True:

        print("\n--- Product Management Menu ---")

        print("1. Add a new product")

        print("2. Update stock of an existing product")

        print("3. Display product details")

        print("4. Exit")

        choice = input("Enter your choice (1-4): ")

        if choice == '1':

*# Add a new product*

            name = input("Enter product name: ").strip()

            try:

                price = float(input("Enter product price: "))

                stock = int(input("Enter product stock quantity: "))

            except ValueError:

                print("Invalid input for price or stock. Please try again.")

                continue

            if name in products:

                print("Product already exists. Overwriting the existing product.")

            products[name] = Product(name, price, stock)

            print("Product added successfully.")

        elif choice == '2':

*# Update stock of an existing product*

            name = input("Enter product name to update: ").strip()

            if name in products:

                try:

                    quantity = int(input("Enter quantity to add (or negative to remove): "))

                except ValueError:

                    print("Invalid input for quantity. Please try again.")

                    continue

                products[name].update\_stock(quantity)

                print("Stock updated successfully.")

            else:

                print("Product not found.")

        elif choice == '3':

*# Display product details*

            name = input("Enter product name to display: ").strip()

            if name in products:

                print(products[name])

            else:

                print("Product not found.")

        elif choice == '4':

*# Exit the program*

            print("Exiting program. Goodbye!")

            break

        else:

            print("Invalid choice. Please select an option from 1 to 4.")

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

    main()

**OUTPUT:**

