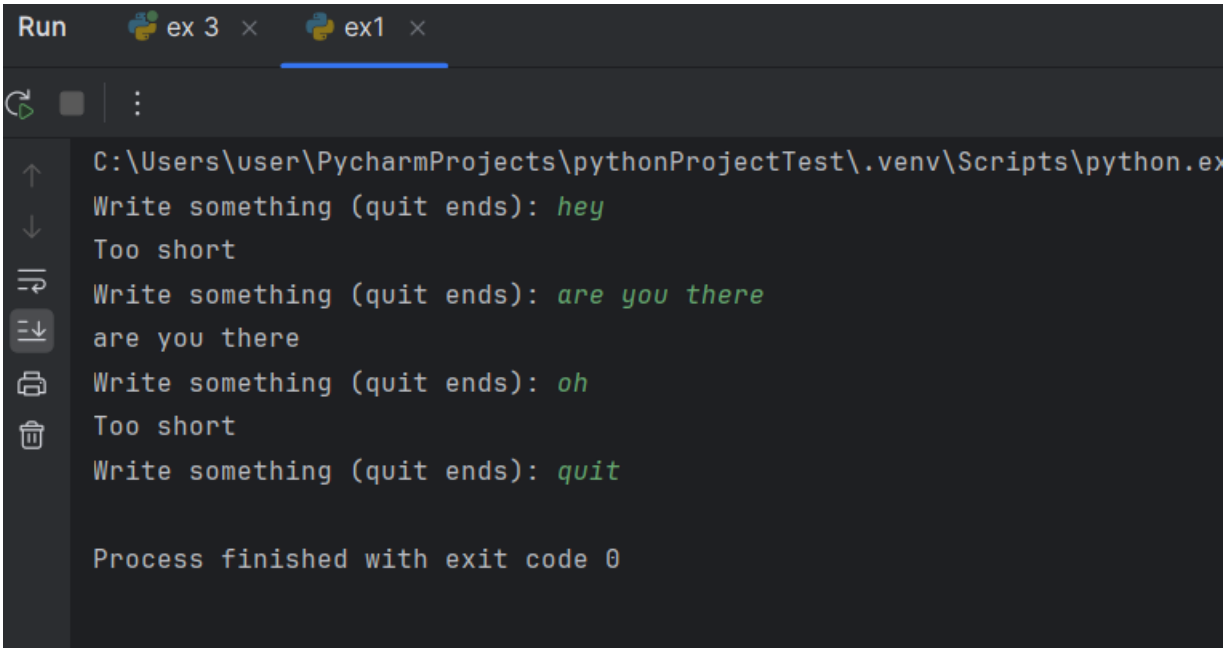
Artificial Intelligence with Python

Assignment 1

Ex. 1

Program

```
def tester(given_string="Too short"):
    if len(given_string) < 10:
        print("Too short")
    else:
        print(given_string)
def main():
    while True:
        user_input = input ("Write something (quit ends): ")
        if user_input == "quit":
            break
        tester(user_input)
if __name__ == "__main__":
    main()
```



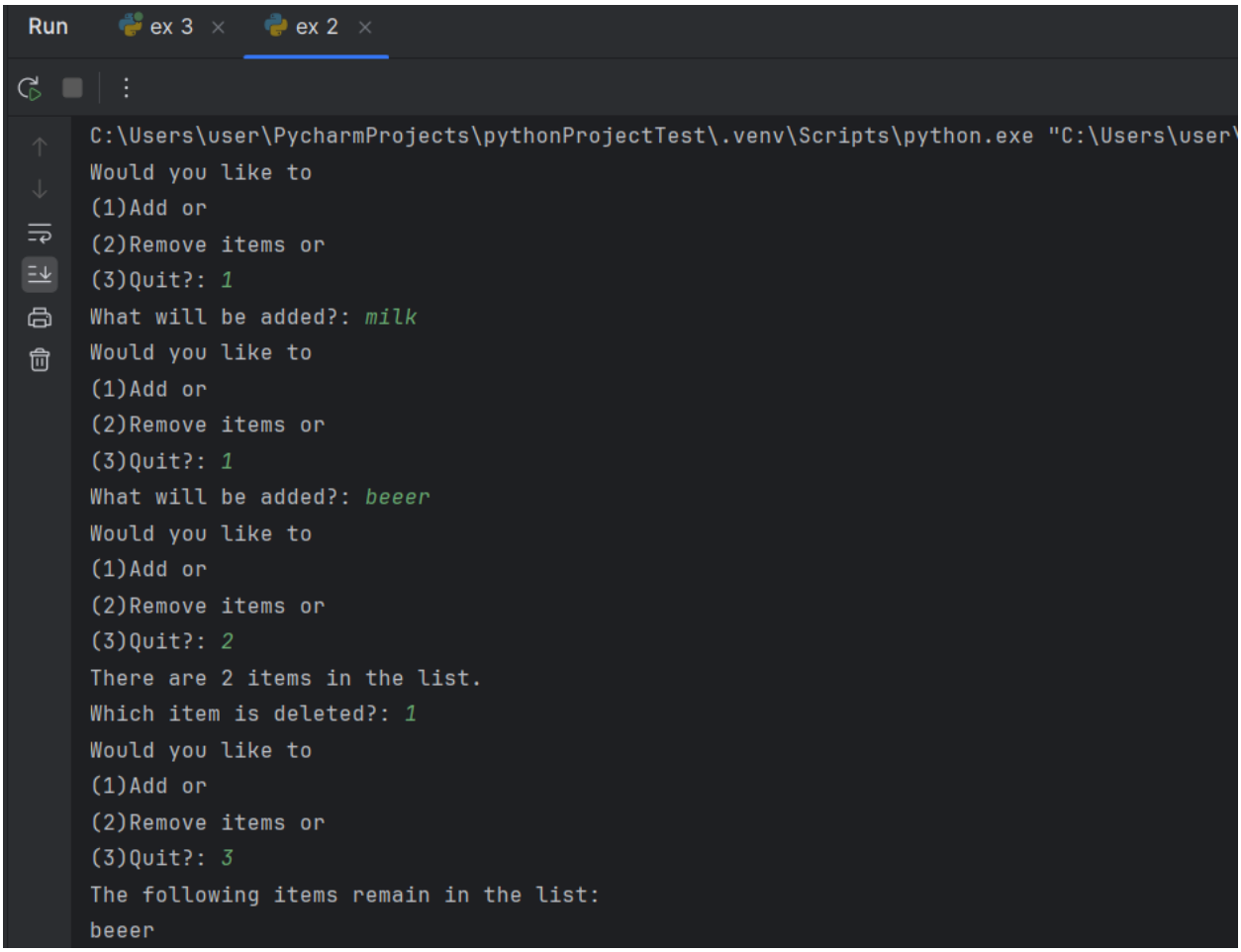
Ex. 2

Program

```
def main():
    """
    grocery shopping list.
    """
    shopping_list = []

    while True:
        choice = input("Would you like to\n(1)Add or\n(2)Remove items
or\n(3)Quit?: ")
        if choice == '1':  # Add item
            item = input("What will be added?: ")
            shopping_list.append(item)
        elif choice == '2':  # Remove item
            if len(shopping_list) == 0:
                print("The list is empty.")
            else:
                print("There are", len(shopping_list), "items in the list.")
                try:
                    remove_index = int(input("Which item is deleted?: ")) - 1
                    if 0 <= remove_index < len(shopping_list):
                        del shopping_list[remove_index]
                    else:
                        print("Incorrect selection.")
                except ValueError:
                    print("Incorrect selection.")
        elif choice == '3':  # Quit
            print("The following items remain in the list:")
            for item in shopping_list:
                print(item)
            break
        else:
            print("Incorrect selection.")
```

if __name__ == "__main__":



Ex 3:

Program

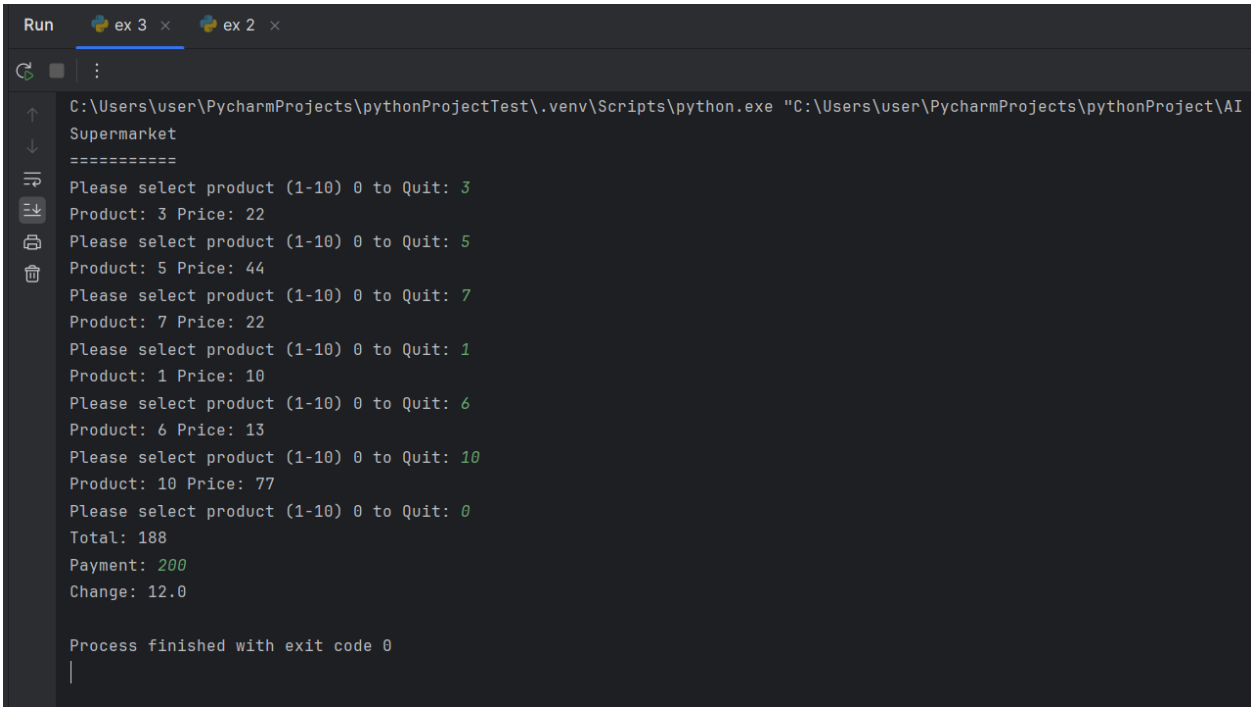
```
def supermarket():
    """
    simple supermarket checkout.
    """
    product_prices = [10, 14, 22, 33, 44, 13, 22, 55, 66, 77]
    total_sum = 0

    print("Supermarket")
    print("===========")
```

```
    while True:
        try:
            product_number = int(input("Please select product (1-10) 0 to Quit: "))
            if product_number == 0:
                break
            if 1 <= product_number <= 10:
                price = product_prices[product_number - 1]  # Adjust for zero-based
indexing
                print(f"Product: {product_number} Price: {price}")
                total_sum += price
            else:
                print("Invalid product number.")
        except ValueError:
            print("Invalid input. Please enter a number.")

    print(f"Total: {total_sum}")
    while True:
        try:
            payment = float(input("Payment: "))
            if payment >= total_sum:
                change = payment - total_sum
                print(f"Change: {change}")
                break
            else:
                print("Insufficient payment. Please enter a sufficient amount.")
        except ValueError:
            print("Invalid input. Please enter a valid number.")

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



Ex 4

Program

```
def print_with_commas(sentence):
    for i in range(len(sentence)):
        if sentence[i] == " ":
            print(",", end="")
        else:
            print(sentence[i], end="")
    print()

def print_words_on_new_lines(sentence):
    current_word = ""
    for char in sentence:
        if char == " ":
            print(current_word)
            current_word = ""
```

```
        else:
            current_word += char
    print(current_word)

sentence = input("Please enter sentence:")
print_with_commas(sentence)
print_words_on_new_lines(sentence)
```