Artificial Intelligence with Python

Assignment 1

1. This exercise tests out the default values of parameters. Create a program which has a main function and a subfunction called tester. The main function prompts user for an input "Write something (quit ends): " and sends this input to the subfunction as a parameter.

   Define the subfunction tester so that it has one parameter called "givenstring", which has the default value "Too short". If the user input is less than 10 characters, the program uses the default value and if 10 or more, it prints the usergiven input. If the user inputs "quit", the program is terminated. When working correctly, the program will print out something like this:

>>>
Write something (quit ends): what?
Too short
Write something (quit ends): What do you mean?
What do you mean?
Write something (quit ends): Ok thats it
Ok thats it
Write something (quit ends): I am out of here
I am out of here
Write something (quit ends): quit
>>>

The easiest way of testing the length of a string is by using the function len().

Example output:

Write something (quit ends): test

Too short

Write something (quit ends): second test

second test

Write something (quit ends): quit

The verification of program output does not account for whitespace and is not case-sensitive (the least strict comparison level)

2. In the second exercise the idea is to create a small grocery shopping list with the list datastructure. In short, create a program that allows the user to (1) add products to the list, (2) remove items and (3) print the list and quit.

If the user adds something to the list, the program asks "What will be added?: " and saves it as the last item in the list. If the user decides to remove something, the program informs the user about how many items there are on the list (There are [number] items in the list.") and prompts the user for the removed item ("Which item is deleted?: "). If the user selects 0, the first item is removed. When the user quits, the final list is printed for the user "The following items remain in the list:" followed by the remaining items one per line. If the user selects anything outside the options, including when deleting items, the program responds "Incorrect selection.". When the program works correctly it prints out the following:

```
>>>
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 1
What will be added?: Apples
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 1
What will be added?: Beer
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 1
What will be added?: Carrots
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 2
There are 3 items in the list.
Which item is deleted?: 3
Incorrect selection.
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 2
There are 3 items in the list.
Which item is deleted?: 2
```

Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 2
There are 2 items in the list.
Which item is deleted?: 0
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 4
Incorrect selection.
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 3
The following items remain in the list:
Beer
>>>

Example output:
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 1
What will be added?: Milk
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 1
What will be added?: Beer
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 2
There are 2 items in the list.
Which item is deleted?: 1
Would you like to
(1)Add or
(2)Remove items or
(3)Quit?: 3
The following items remain in the list:
Milk
The verification of program output does not account for whitespace and is not case-sensitive (the least strict comparison level)

3. Make simple Supermarket -program,
   - having 10 products with prices in a list as follows:[10,14,22,33,44,13,22,55,66,77].
   - asking product number from 1 to 10 and summing its price to totalsum and printing product number and price for every product as in example.
   - asking products until user gives '0' to quit the program (while-loop).
   - printing "Total:" and the total sum of prices.
   - asking "Payment:" from user and printing "Change:" and finally calculating and printing the amount of change (payment - totalsum) to customer.
   - You must use in this program: while, input

Example output:

Supermarket

===========

Please select product (1-10) 0 to Quit: 3

Product: 3 Price: 22

Please select product (1-10) 0 to Quit: 5

Product: 5 Price: 44

Please select product (1-10) 0 to Quit: 7

Product: 7 Price: 22

Please select product (1-10) 0 to Quit: 1

Product: 1 Price: 10

Please select product (1-10) 0 to Quit: 6

Product: 6 Price: 13

Please select product (1-10) 0 to Quit: 10

Product: 10 Price: 77

Please select product (1-10) 0 to Quit: 0

Total: 188

Payment: 200

Change: 12

The verification of program output does not account for whitespace and is not case-sensitive (the least strict comparison level)

4. In this exercise create two functions

my_split : which splits sentence given as first argument using second argument as a separator character to separate list items. Function returns a list of items.

my_join : which joins list given as first argument to a string separated with character given as second argument. Function returns a string.

In this exercise you are not allowed to use Python split and join functions

Example output:

Please enter sentence:This is a sentence

This,is,a,sentence

This

is

a

sentence

The output of the program must be exactly the same as the example output (the most strict comparison level)