

Assignment -1
Python Programming

Assignment Date	12 September 2022
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Maximum Marks	2 Marks

Question-1:

Consider a list (list = []). You can perform the following commands:

1. insert i e: Insert integer e at position i.
2. print: Print the list.
3. remove e: Delete the first occurrence of integer e.
4. append e: Insert integer e at the end of the list.
5. sort: Sort the list.
6. pop: Pop the last element from the list.
7. reverse: Reverse the list.

Initialize your list and read in the value of n followed by n lines of commands where each command will be of the 7 types listed above. Iterate through each command in order and perform the corresponding operation on your list.

Solution:

```
list=[1,3,1,5,2,4,1]
list.insert(5,6)
print('inserted list',list)
list.remove(1)
print('removed list',list)
list.append(7)
print('appended list',list)
list.sort()
print('sorted list',list)
list.pop()
print('popped list',list)
list.reverse()
print('reversed list',list)
```

The screenshot shows two windows from the IDLE Python IDE. The left window, titled 'listoperations.py', contains a Python script that performs various list operations on a list [1, 3, 1, 5, 2, 4, 1]. The right window, titled 'IDLE Shell 3.9.6', shows the output of the script after it has been executed. The output displays the state of the list after each operation: insertion, removal, appending, sorting, popping, reversing, and finally reversing again.

```
listoperations.py - C:/Users/sivan/Downlo...
File Edit Format Run Options Window Help
list=[1,3,1,5,2,4,1]
list.insert(5,6)
print('inserted list',list)
list.remove(1)
print('removed list',list)
list.append(7)
print('appended list',list)
list.sort()
print('sorted list',list)
list.pop()
print('popped list',list)
list.reverse()
print('reversed list',list)
Ln: 14 Col: 0

IDLE Shell 3.9.6
File Edit Shell Debug Options Window Help
Python 3.9.6 (tags/v3.9.6:db3ff76, Jun 28 2021, 15:26:21) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/sivan/Downloads/listop
erations.py =====
inserted list [1, 3, 1, 5, 2, 6, 4, 1]
removed list [3, 1, 5, 2, 6, 4, 1]
appended list [3, 1, 5, 2, 6, 4, 1, 7]
sorted list [1, 1, 2, 3, 4, 5, 6, 7]
popped list [1, 1, 2, 3, 4, 5, 6]
reversed list [6, 5, 4, 3, 2, 1, 1]
>>>
Ln: 11 Col: 4
```

Question-2:

Write a calculator program in python

Solution:

```
def add(x,y):
    return x+y
def subtract(x,y):
    return x-y
def multiply(x,y):
    return x*y
def divide(x,y):
    return x/y
print("Select operation")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")
While True:
    choice = input("Enter choice(1/2/3/4):")
    if choice in ( ' 1 ' , ' 2 ' , ' 3 ' , ' 4 ' ):
        num1 = float(input("Enter first number"))
        num2 = float(input("Enter second number"))
        if choice == ' 1 ':
            print(num1 , ' + ' , num2 , ' = ' , add(num1, num2))
        elif choice == ' 2 ':
            print(num1 , ' - ' , num2 , ' = ' , subtract(num1, num2))
        elif choice == ' 3 ':
            print(num1 , ' * ' , num2 , ' = ' , multiply(num1, num2))
        elif choice == ' 4 ':
            print(num1 , ' / ' , num2 , ' = ' , divide(num1, num2))
        next_calculation = input("Let's do next calculation?(yes/no):")
        if next_calculation == " no ":
            break
```

```
else:  
print(" Invalid Input ")
```

The screenshot shows a Python IDE with two windows. The left window, titled 'calculator.py - C:/Users/sivan/Downloads/calculator.py (3.9.6)', contains the following code:

```
File Edit Format Run Options Window Help  
def add(x, y):  
    return x + y  
def subtract(x, y):  
    return x - y  
def multiply(x, y):  
    return x * y  
def divide(x, y):  
    return x / y  
print("Select operation")  
print("1.Add")  
print("2.Subtract")  
print("3.Multiply")  
print("4.Divide")  
while True:  
    choice = input("Enter choice(1/2/3/4): ")  
    if choice in ('1','2','3','4'):  
        num1 = float(input("Enter first number: "))  
        num2 = float(input("Enter second number:"))  
        if choice == '1':  
            print(num1,"+", num2,"=",add(num1, num2))  
        elif choice == '2':  
            print(num1, "-", num2, "=", subtract(num1, num2))  
        elif choice == '3':  
            print(num1,"*", num2, "=",multiply(num1, num2))  
        elif choice == '4':  
            print(num1, "/",num2, "=", divide(num1, num2))  
        next_calculation = input("Lets do next calculation? (yes/no): ")  
        if next_calculation == "no":  
            break  
    else:  
        print("Invalid Input")
```

The right window, titled 'IDLE Shell 3.9.6', shows the program's execution:

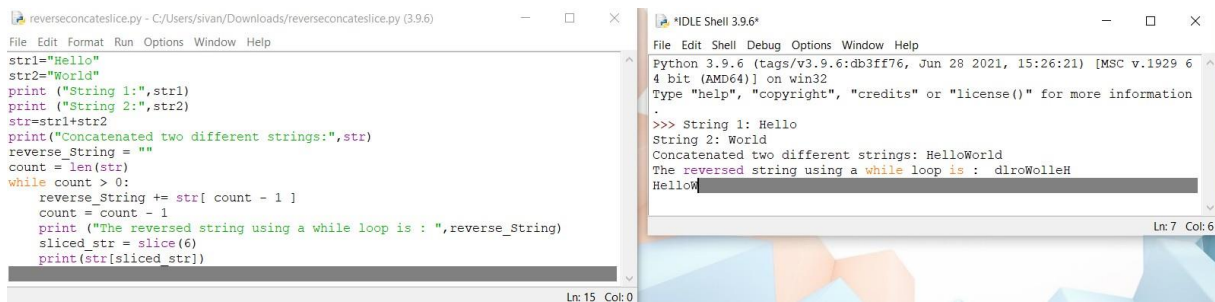
```
File Edit Shell Debug Options Window Help  
Python 3.9.6 (tags/v3.9.6:db3ff76, Jun 28 2021, 15:  
26:21) [MSC v.1929 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()"   
>>>  
===== RESTART: C:/Users/sivan/Downloads/  
calculator.py =====  
Select operation  
1.Add  
2.Subtract  
3.Multiply  
4.Divide  
Enter choice(1/2/3/4): 1  
Enter first number: 10  
Enter second number:23  
10.0 + 23.0 = 33.0  
Lets do next calculation? (yes/no): no  
>>>
```

Question-3:

Write a program to concatenate , reverse and slice a string in python

Solution:

```
str1 = "Hello"  
str2 = "World"  
print("String 1:",str1)  
print("String 2:",str2)  
str = str1+str2  
print("Concatenated two different strings:",str)  
reverse_String = ""  
count = len(str)  
while count > 0:  
    reverse_String += str[ count - 1 ]  
    count = count - 1  
print ("The reversed string using a while loop is : ",reverse_String)  
sliced_str = slice(6)  
print(str[sliced_str])
```

The image shows two windows from a Python IDE. The left window, titled 'reverseconcatenateslice.py - C:/Users/sivan/Downloads/reverseconcatenateslice.py (3.9.6)', contains the following Python code:

```
str1="Hello"
str2="World"
print ("String 1:",str1)
print ("String 2:",str2)
str=str1+str2
print("Concatenated two different strings:",str)
reverse_String = ""
count = len(str)
while count > 0:
    reverse_String += str[ count - 1 ]
    count = count - 1
print ("The reversed string using a while loop is : ",reverse_String)
sliced_str = slice(6)
print(str[sliced_str])
```

The right window, titled 'IDLE Shell 3.9.6*', shows the output of the script:

```
Python 3.9.6 (tags/v3.9.6:db3ff76, Jun 28 2021, 15:26:21) [MSC v.1929 6
4 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information
.>>> String 1: Hello
String 2: World
Concatenated two different strings: HelloWorld
The reversed string using a while loop is : dlroWolleH
HelloW
```

Question-4:

Why python is popular programming language

Python has a simple syntax and in form of natural english language which helps lot of people to get a hold of what is coding in their first experience. it is highly flexible, reliable and fast to code.

Question-5:

What are the other frameworks that can be used with python?

Bottle, Flask, Django, Web2py, AIOHTTP, CherryPy, Dash Falcon

Question-6:

Full Form of WSGI

WSGI stands for Web Server Gateway Interface