Module 3 : Python Assignment

1. Consider a list (list = []). You can perform the following commands:
    - insert i e: Insert integer at position .
    - print: Print the list.
    - remove e: Delete the first occurrence of integer .
    - append e: Insert integer at the end of the list.
    - sort: Sort the list.
    - pop: Pop the last element from the list.
    - reverse: Reverse the list.

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

2. Write a Calculator program in Python?
3. Write a program to concatenate, reverse and slice a string?
4. Why is Python a popular programming language?
5. What are the other Frameworks that can be used with python?
6. Full form of WSGI?

Answers:

Listoperations

```
list = []
n = 0

while(n != 100):
    print("\nOptions:")
    print("1. Insert an element in the list at a position")
    print("2. Print the list")
    print("3. Delete the first occurence of an integer")
    print("4. Append an element to the end of the list")
    print("5. Sort the list")
    print("6. Pop the element from the list")
    print("7. Reverse the list")
    print("100. To exit")
```

```
n = int(input("\nEnter your choice : "))

# exit the program
if(n == 100): exit(1)

# insert an element at a specified position
if(n == 1):
    element = int(input("Enter the element to insert : "))
    pos = int(input("Enter the position : "))

    list.insert(pos, element)
    print(element, " is inserted")

# print the list
elif(n == 2):
    print(list)
```

```
# delete a number
elif(n == 3):
    x = int(input("Enter the number to delete : "))

    if(x in list):
        list.remove(x)
        print(x, " deleted from the list")
    else:
        print(x, " is not found in the list")

# append an integer to the list
elif(n == 4):
    x = int(input("Enter the number to append : "))
    list.append(x)
    print(x, " appended to the list")

# sort the list
elif(n == 5):
    list.sort()
    print("List is sorted")

# pop an element from the list
elif(n == 6):
    list = list[0:len(list)-1]
    print(list)
```

```python
    # reverse the list
    elif(n == 7):
        list.reverse()
        print(list)
```

Output:

```
PS D:\python-main\python-main\ibm> python list.py

Options:
1. Insert an element in the list at a position
2. Print the list
3. Delete the first occurence of an integer
4. Append an element to the end of the list
5. Sort the list
6. Pop the element from the list
7. Reverse the list
100. To exit

Enter your choice : 4
Enter the number to append : 10
10  appended to the list

Options:
1. Insert an element in the list at a position
2. Print the list
3. Delete the first occurence of an integer
4. Append an element to the end of the list
5. Sort the list
6. Pop the element from the list
7. Reverse the list
100. To exit

Enter your choice : 2
[10]

Options:
1. Insert an element in the list at a position
2. Print the list
3. Delete the first occurence of an integer
4. Append an element to the end of the list
5. Sort the list
6. Pop the element from the list
7. Reverse the list
100. To exit

Enter your choice : 100
PS D:\python-main\python-main\ibm>
```

1. Calculatorprogram

```
n = 0

while(n != 5):
    print("\n***** Calculator Program *****")
    print("1. To add 2 numbers")
    print("2. To subtract 2 numbers")
    print("3. To multiply 2 numbers")
    print("4. To divide 2 numbers")
    print("5. To exit the calculator")

    n = int(input("\nEnter your option : "))
    # exit the program
    if(n == 5): exit(1)

    # to add 2 numbers
    if(n == 1):
        num1 = int(input("Enter number 1 : "))
        num2 = int(input("Enter number 2 : "))

        print("Their sum is ", num1 + num2)

    # to subtract 2 numbers
    elif(n == 2):
        num1 = int(input("Enter number 1 : "))
        num2 = int(input("Enter number 2 : "))

        print("After subtraction, the answer is ", num1 - num2)

    # to multiply 2 numbers
    elif(n == 3):
        num1 = int(input("Enter number 1 : "))
        num2 = int(input("Enter number 2 : "))

        print("Their product is ", num1 * num2)

    # to divide 2 numbers
    elif(n == 4):
        num1 = int(input("Enter number 1 : "))
        num2 = int(input("Enter number 2 : "))

        print("Their division is ", num1 / num2)
```

Output:

```
***** Calculator Program *****
1. To add 2 numbers
2. To subtract 2 numbers
3. To multiply 2 numbers
4. To divide 2 numbers
5. To exit the calculator

Enter your option : 1
Enter number 1 : 10
Enter number 2 : 20
Their sum is  30

***** Calculator Program *****
1. To add 2 numbers
2. To subtract 2 numbers
3. To multiply 2 numbers
4. To divide 2 numbers
5. To exit the calculator

Enter your option :
```

2. Stringoperations

```python
str1 = "IBM"
str2 = "Nalaiyathiran"

# string concatenation
print("\nConcatenated String : ", str1 + " " + str2)

# reversing a string
ans = str2[::-1]
print("\nReversed String : ", ans)

# splicing a string
print("\nSpliced String : ", str2[2:6])
```

Output:

```
Concatenated String :  IBM Nalaiyathiran

Reversed String :  narihtayialaN

Spliced String :  laiy
```

3. WhyisPythonapopularprogramminglanguage?
   - Beginner-Friendliness
   - Versatility
   - Awesomecommunityandresources
   - AutomationSoup

- Pythonworks withIOT
- BigcompaniesusePython
- ImageProcessing
- GraphicalAnalysis
- NaturalLanguageProcessing
- MachineLearning
- ArtificialIntelligence
- Greatlibraries andframeworks
    - Numpy
    - Matplotlib
      ○SciPy
      ○Django
      ○BeatifulSo
      up

4. Whataretheframeworksthatcanbeused withpython?
    - Flask
    - Bottle
    - Django
    - Web2py
    - AIOHTTP
    - CherryPy
    - Dash
    - Falcon

5. Fullformof WSGI?

   A **Web Server Gateway Interface** (WSGI) server implements the web server side ofthe WSGI interface for running Python web applications. Why is WSGI necessary? Atraditional web server does not understand or have any way to run Pythonapplications.