2019115062
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Information Technology

IBM Nalaiya Thiran Technical Training

Cloud Application Development

B7 - 1A3E

Assignment-1

1. Perform various commands on list in Python:
   - Initializing the list

```
In [1]: list_practise=[10,20,30,40]

        #initial list
```

   - Inserting element at random position

```
In [2]: #inserting element at position 2:

        list_practise.insert(2,50)
        print(list_practise)
```

```
[10, 20, 50, 30, 40]
```

   - Remove first occurrence of an element:

```
In [3]: #appending duplicate values

        list_practise.append(20)
        list_practise.append(30)
```

```
In [4]: #removing the first occurence an element
        list_practise.remove(20)
        print(list_practise)
```

```
[10, 50, 30, 40, 20, 30]
```

// Here the first occurrence of the element 20 is removed.

   - Appending an element:

```
In [5]: #appending an element

        list_practise.append(90)
        print(list_practise)
```

```
[10, 50, 30, 40, 20, 30, 90]
```

- Sorting the list:

```
In [6]: #sorting the list

        list_practise.sort()
        print(list_practise)
```

```
[10, 20, 30, 30, 40, 50, 90]
```

- Pop the last element from list:

```
In [7]: #pop the last element from list

        list_practise.pop(-1)
        print(list_practise)
```

```
[10, 20, 30, 30, 40, 50]
```

- Reverse the list:

```
In [8]: #reverse the list

        list_practise.reverse()
        print(list_practise)
```

```
[50, 40, 30, 30, 20, 10]
```

2. Simple Calculator program:

➔ Calculator program is a program in python that performs basic operations like addition, subtraction, multiplication, division, modulo.

➔ Code:

```
# Program make a simple calculator

# This function adds two numbers
```

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```
def add(x, y):
    return x + y
# This function subtracts two numbers
def subtract(x, y):
    return x - y

# This function multiplies two numbers
def multiply(x, y):
    return x * y

# This function divides two numbers
def divide(x, y):
    return x / y

def exponent(x,y):
    return x**y

def modulo(x,y):
    return x%y

print("Select operation: \n")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")
print("5.Exponent")
print("6.Modulo")

while True:
    # take input from the user
    print("\n")
    choice = input("Enter choice (1-6): ")
    print("\n")
    # check if choice is one of the four options
```

```
if choice in ('1', '2', '3', '4','5','6'):
    num1 = float(input("Enter first number: "))
    num2 = float(input("Enter second number: "))

    if choice == '1':
        print("\n",num1, "+", num2, "=", add(num1, num2))

    elif choice == '2':
        print("\n",num1, "-", num2, "=", subtract(num1, num2))

    elif choice == '3':
        print("\n",num1, "*", num2, "=", multiply(num1, num2))

    elif choice == '4':
        print("\n",num1, "/", num2, "=", divide(num1, num2))
    elif choice == '5':
        print("\n",num1, "^", num2, "=", exponent(num1, num2))
    elif choice == '6':
        print("\n",num1, "%", num2, "=", modulo(num1, num2))

    # check if user wants another calculation
    # break the while loop if answer is no
    next_calculation = input("Do you want to continue? (Yes or No)")
    if next_calculation == "No":
        print("\nThank you")
        break

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

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In [2]:
```
# Program make a simple calculator

# This function adds two numbers
def add(x, y):
    return x + y

# This function subtracts two numbers
def subtract(x, y):
    return x - y

# This function multiplies two numbers
def multiply(x, y):
    return x * y

# This function divides two numbers
def divide(x, y):
    return x / y

def exponent(x,y):
    return x**y

def modulo(x,y):
    return x%y
```

```
print("Select operation: \n")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")
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print("6.Modulo")

while True:
    # take input from the user
    print("\n")
    choice = input("Enter choice (1-6): ")
    print("\n")
    # check if choice is one of the four options
    if choice in ('1', '2', '3', '4','5','6'):
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: "))

        if choice == '1':
            print("\n",num1, "+", num2, "=", add(num1, num2))

        elif choice == '2':
            print("\n",num1, "-", num2, "=", subtract(num1, num2))

        elif choice == '3':
            print("\n",num1, "*", num2, "=", multiply(num1, num2))
```

```
        elif choice == '4':
            print("\n",num1, "/", num2, "=", divide(num1, num2))
        elif choice == '5':
            print("\n",num1, "^", num2, "=", exponent(num1, num2))
        elif choice == '6':
            print("\n",num1, "%", num2, "=", modulo(num1, num2))

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

➔ Output:

```
Select operation:

1.Add
2.Subtract
3.Multiply
4.Divide
5.Exponent
6.Modulo


Enter choice (1-6): 1


Enter first number: 25
Enter second number: 5

 25.0 + 5.0 = 30.0
Do you want to continue? (Yes or No)Yes


Enter choice (1-6): 2


Enter first number: 30
Enter second number: 29

 30.0 - 29.0 = 1.0
Do you want to continue? (Yes or No)Yes
```

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```
Enter choice (1-6): 3


Enter first number: 54
Enter second number: 98

 54.0 * 98.0 = 5292.0
Do you want to continue? (Yes or No)Yes


Enter choice (1-6): 5


Enter first number: 2
Enter second number: 3

 2.0 ^ 3.0 = 8.0
Do you want to continue? (Yes or No)Yes




  Enter choice (1-6): 4


  Enter first number: 56
  Enter second number: 7

   56.0 / 7.0 = 8.0
  Do you want to continue? (Yes or No)Yes


Enter choice (1-6): 6


Enter first number: 97
Enter second number: 4

 97.0 % 4.0 = 1.0
Do you want to continue? (Yes or No)No

Thank you
```

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3. To concatenate and perform slicing operations on strings

To concatenate, reverse and slice a string:

In [1]:
```
string1="Nithin"
string2="Good Morning"
final=string1+string2
print("Concatenated strings : ",string1+string2)
print("Reverse of String 1 : ",string1[::-1])
print("Reverse of String 2 : ",string2[::-1])
print("Reverse of concatenated strings : ",final[::-1])
print("Slicing Operations done on strings : ")
print(string1[2::1])
print(string2[::2])
print(final[1:5])
```

```
Concatenated strings :  NithinGood Morning
Reverse of String 1 :  nihtiN
Reverse of String 2 :  gninroM dooG
Reverse of concatenated strings :  gninroM dooGnihtiN
Slicing Operations done on strings :
thin
Go onn
ithi
```

4. Python is a highly versatile, platform-independent and robust language. It uses a simplified syntax with an emphasis on natural language, for a much easier learning curve for beginners. It is free to use and is supported by an extremely large ecosystem of libraries and packages. It is not complicated and is easy to understand. It supports various frameworks like Django, Flask and Dash. It is also a preferred language for web development with various tools and modules supporting automation too. It is a dynamically typed language and is more productive with various support towards data science and Machine Language. Thus, Python serves to be a popular programming language.

5. Frameworks that can be used with python are Pyramid, Django, TurboGears, CherryPy, Flask, Bottle, Web2py, Dash and Falcon etc.

6. Full form of WSGI – Web Server Gateway Interface