1. **Write a program to demonstrate different number data types in Python.**

   Aim:

   Write a program to demonstrate different number data types in Python.

   Source Code:

```
a=10  #Integer Datatype
b=11.5 #Float Datatype
c=2.05j  #Complex Number
print("a is Type of",type(a))
print("b is Type of",type(b))
print("c is Type of",type(c))
```

2. **Write a program to perform different Arithmetic Operations on numbers in Python.**

   Aim:

   Write a program to perform different Arithmetic Operations on numbers in Python.

   Source Code:

   week2.py

```
a=int(input("Enter a value"))
b=int(input("Enter b value"))
print("Addition of a and b ",a+b)
print("Subtraction of a and b ",a-b)
print("Multiplication of a and b ",a*b)
print("Division of a and b ",a/b)
print("Remainder of a and b ",a%b)
print("Exponent of a and b ",a**b); #exponent operator (a^b)
print("Floar division of a and b ",a//b); # floar division
```

Output:

```
E:\Python>python week2.py
Enter a value3
Enter b value2
Addition of a and b  5
Subtraction of a and b  1
Multiplication of a and b  6
Division of a and b  1.5
Remainder of a and b  1
Exponent of a and b  9
Floar division of a and b  1
```

3. **Write a program to create, concatenate and print a string and accessing sub-string from a given string.**

Aim:

Write a program to create, concatenate and print a string and accessing sub-string from a given string.

Source Code:

week3.py

```
s1=input("Enter first String : ");

s2=input("Enter second String : ");

print("First string is : ",s1);

print("Second string is : ",s2);

print("concatenations of two strings :",s1+s2);

print("Substring of given string :",s1[1:4]);
```

Output:

```
E:\Python>python week3.py
Enter first String : COMPUTER-
Enter second String : SCIENCE
First string is :  COMPUTER-
Second string is :  SCIENCE
concatenations of two strings : COMPUTER-SCIENCE
Substring of given string : OMP
```

4. **Write a python script to print the current date in the following format "Sun May 29 02:26:23 IST 2017"**

Aim:

Write a python script to print the current date in the following format "Sun May 29 02:26:23 IST 2017"

Source Code:

week4.py

```
import time;

ltime=time.localtime();

print(time.strftime("%a %b %d %H:%M:%S %Z %Y",ltime));  #returns the formatted time
```

%a : Abbreviated weekday name.

%b : Abbreviated month name.

%d : Day of the month as a decimal number [01,31].

%H : Hour (24-hour clock) as a decimal number [00,23].

%M : Minute as a decimal number [00,59].

%S : Second as a decimal number [00,61].

%Z : Time zone name (no characters if no time zone exists).

%Y : Year with century as a decimal number."'

Output:

```
E:\Python>python week4.py
Sat Mar 06 14:52:49 India Standard Time 2021
```

5. **Write a program to create, append, and remove lists in python.**

Aim:

Write a program to create, append, and remove lists in python.

Source Code:

week5.py

```
pets = ['cat', 'dog', 'rat', 'pig', 'tiger']

snakes=['python','anaconda','fish','cobra','mamba']

print("Pets are :",pets)

print("Snakes are :",snakes)

animals=pets+snakes

print("Animals are :",animals)

snakes.remove("fish")

print("updated Snakes are :",snakes)
```

Output:

```
E:\Python>python week5.py
Pets are : ['cat', 'dog', 'rat', 'pig', 'tiger']
Snakes are : ['python', 'anaconda', 'fish', 'cobra', 'mamba']
Animals are : ['cat', 'dog', 'rat', 'pig', 'tiger', 'python', 'anaconda', 'fish', 'cobra', 'mamba']
updated Snakes are : ['python', 'anaconda', 'cobra', 'mamba']
```

6. **Write a program to demonstrate working with tuples in python.**

Aim:

Write a program to demonstrate working with tuples in python.

Source Code:

week6.py

```
T = ("apple", "banana", "cherry","mango","grape","orange")
print("\n Created tuple is :",T)
print("\n Second fruit is :",T[1])
print("\n From 3-6 fruits are :",T[3:6])
print("\n List of all items in Tuple :")
for x in T:
  print(x)
if "apple" in T:
  print("\n Yes, 'apple' is in the fruits tuple")
print("\n Length of Tuple is :",len(T))
```

Output:

```
E:\Python>python week6.py
 Created tuple is : ('apple', 'banana', 'cherry', 'mango', 'grape', 'orange')
 Second fruit is : banana
 From 3-6 fruits are : ('mango', 'grape', 'orange')
 List of all items in Tuple :
apple
banana
cherry
mango
grape
orange
 Yes, 'apple' is in the fruits tuple
 Length of Tuple is : 6
```

7. Write a program to demonstrate working with dictionaries in python.

Aim:

Write a program to demonstrate working with dictionaries in python.

Source Code:

week7.py

```
dict1 = {'StdNo':'532','StuName': 'Naveen', 'StuAge': 21, 'StuCity': 'Hyderabad'}
print("\n Dictionary is :",dict1)
#Accessing specific values
print("\n Student Name is :",dict1['StuName'])
print("\n Student City is :",dict1['StuCity'])
#Display all Keys
print("\n All Keys in Dictionary ")
for x in dict1:
    print(x)
#Display all values
print("\n All Values in Dictionary ")
for x in dict1:
    print(dict1[x])
#Adding items
dict1["Phno"]=85457854
#Updated dictoinary
print("\n Uadated Dictionary is :",dict1)
#Change values
dict1["StuName"]="Madhu"
#Updated dictoinary
print("\n Uadated Dictionary is :",dict1)
#Removing Items
dict1.pop("StuAge");
```

```
#Updated dictoinary

print("\n Uadated Dictionary is :",dict1)

#Length of Dictionary

print("Length of Dictionary is :",len(dict1))

#Copy a Dictionary

dict2=dict1.copy()

#New dictoinary

print("\n New Dictionary is :",dict2)

#empties the dictionary

dict1.clear()

print("\n Uadated Dictionary is :",dict1)
```

Output:

```
E:\Python>python week7.py

 Dictionary is : {'StdNo': '532', 'StuName': 'Naveen', 'StuAge': 21, 'StuCity': 'Hyderabad'}

 Student Name is : Naveen

 Student City is : Hyderabad

 All Keys in Dictionary
StdNo
StuName
StuAge
StuCity

 All Values in Dictionary
532
Naveen
21
Hyderabad

 Uadated Dictionary is : {'StdNo': '532', 'StuName': 'Naveen', 'StuAge': 21, 'StuCity': 'Hyderabad', 'Phno': 85457854}

 Uadated Dictionary is : {'StdNo': '532', 'StuName': 'Madhu', 'StuAge': 21, 'StuCity': 'Hyderabad', 'Phno': 85457854}

 Uadated Dictionary is : {'StdNo': '532', 'StuName': 'Madhu', 'StuCity': 'Hyderabad', 'Phno': 85457854}
Length of Dictionary is : 4

 New Dictionary is : {'StdNo': '532', 'StuName': 'Madhu', 'StuCity': 'Hyderabad', 'Phno': 85457854}

 Uadated Dictionary is : {}
```

8. **Write a python program to find largest of three numbers.**

Aim:

Write a python program to find largest of three numbers.

Source Code:

week8.py

```
num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))
num3 = int(input("Enter third number: "))
if (num1 > num2) and (num1 > num3):
   largest = num1
elif (num2 > num1) and (num2 > num3):
   largest = num2
else:
   largest = num3
print("The largest number is",largest)
```

Output:

```
E:\Python>python week8.py
Enter first number: 400
Enter second number: 500
Enter third number: 200
The largest number is 500
```

9. **Write a Python program to convert temperatures to and from Celsius, Fahrenheit. [Formula: c/5 = f-32/9]**

Aim:

Write a Python program to convert temperatures to and from Celsius, Fahrenheit. [Formula: c/5 = f-32/9]

Source Code:

week9.py

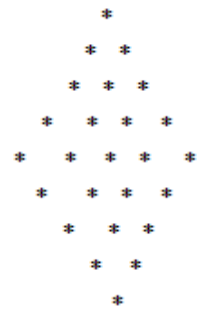
```
print("Options are \n")
print("1.Convert temperatures from Celsius to Fahrenheit \n")
print("2.Convert temperatures from Fahrenheit to Celsius \n")
opt=int(input("Choose any Option(1 or 2) : "))
if opt == 1:
    print("Convert temperatures from Celsius to Fahrenheit \n")
    cel = float(input("Enter Temperature in Celsius: "))
    fahr = (cel*9/5)+32
    print("Temperature in Fahrenheit =",fahr)
elif opt == 2:
    print("Convert temperatures from Fahrenheit to Celsius \n")
    fahr = float(input("Enter Temperature in Fahrenheit: "))
    cel=(fahr-32)*5/9;
    print("Temperature in Celsius =",cel)
else:
    print("Invalid Option")
```

Output:

```
E:\Python>python week9.py
Options are

1.Convert temperatures from Celsius to Fahrenheit

2.Convert temperatures from Fahrenheit to Celsius

Choose any Option(1 or 2) : 1
Convert temperatures from Celsius to Fahrenheit

Enter Temperature in Celsius: 36
Temperature in Fahrenheit = 96.8

E:\Python>python week9.py
Options are

1.Convert temperatures from Celsius to Fahrenheit

2.Convert temperatures from Fahrenheit to Celsius

Choose any Option(1 or 2) : 2
Convert temperatures from Fahrenheit to Celsius

Enter Temperature in Fahrenheit: 98.3
Temperature in Celsius = 36.833333333333336
```

10. Write a Python program to construct the following pattern, using a nested for loop

```
 *

* *

* * *

* * * *

* * * * *

* * * * *

* * *

* *

*
```



Aim:

Write a Python program to construct the stars(*) pattern, using a nested for loop

Source Code:

week10.py

```
n=5
for i in range(n):
    for j in range(i):
        print ('* ', end="")
    print('')
for i in range(n,0,-1):
    for j in range(i):
        print('* ', end="")
    print('')


rows = int(input("Enter the number of rows: "))
  # It is used to print the space
k = 2 * rows - 2
# Outer loop to print number of rows
for i in range(0, rows):
```

```
    # Inner loop is used to print number of space
    for j in range(0, k):
        print(end=" ")
    # Decrement in k after each iteration
    k = k - 1
    # This inner loop is used to print stars
    for j in range(0, i + 1):
        print("* ", end="")
    print("")


# Downward triangle Pyramid
# It is used to print the space
k = rows - 2
# Output for downward triangle pyramid
for i in range(rows, -1, -1):
    # inner loop will print the spaces
    for j in range(k, 0, -1):
        print(end=" ")
    # Increment in k after each iteration
    k = k + 1
    # This inner loop will print number of stars
    for j in range(0, i + 1):
        print("* ", end="")
    print("")
```

Output:

```
E:\Python>python week10.py
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```

Enter the number of rows: 8

```
        *
       * *
      * * *
     * * * *
    * * * * *
   * * * * * *
  * * * * * * *
 * * * * * * * *
* * * * * * * * *
 * * * * * * * *
  * * * * * * *
   * * * * * *
    * * * * *
     * * * *
      * * *
       * *
        *
```