Case Study 2 – Introduction To Python

Problem Statement:

Consider yourself to be Sam who is a data scientist. He has been invited as a guest lecturer at a college to take an introductory session on Python.

Tasks To Be Performed:

1. Create 1st tuple with values -> (10, 20, 30), 2nd tuple with values -> (40, 50, 60):

- a. Concatenate the two tuples and store it in "t_combine"
- b. Repeat the elements of "t_combine" 3 times
- c. Access the 3rd element from "t_combine"
- d. Access the first three elements from "t_combine"
- e. Access the last three elements from "t_combine"

In [2]:
```
t1 = (10, 20, 30)
t2 = (40, 50, 60)
```

In [3]:
```
t_combine = t1+t2
print(t_combine)
```

```
(10, 20, 30, 40, 50, 60)
```

In [4]:
```
t_combine*3
```

Out[4]:
```
(10, 20, 30, 40, 50, 60, 10, 20, 30, 40, 50, 60, 10, 20, 30, 40, 50, 60)
```

In [5]:
```
t_combine[2]
```

Out[5]:
```
30
```

In [6]:
```
t_combine[:3]
```

Out[6]:
```
(10, 20, 30)
```

In [7]:
```
t_combine[-3:]
```

Out[7]:
```
(40, 50, 60)
```

2. Create a list 'my_list' with these elements:

- a. First element is a tuple with values 1, 2, 3
- b. Second element is a tuple with values "a", "b", "c"
- c. Third element is a tuple with values True, False

In [14]:
```
my_list = [(1,2,3), ('a','b','c'), (True, False)]
my_list
```

Out[14]:
```
[(1, 2, 3), ('a', 'b', 'c'), (True, False)]
```

3. Append a new tuple – (1, 'a', True) to 'my_list':

- a. Append a new list – *"sparta", 123+ to my_list

In [15]:
```
my_list.append((1, 'a', True))
my_list
```

Out[15]:
```
[(1, 2, 3), ('a', 'b', 'c'), (True, False), (1, 'a', True)]
```

In [16]:
```
my_list.append(['*"sparta"', '123+'])
my_list
```

Out[16]:
```
[(1, 2, 3),
 ('a', 'b', 'c'),
 (True, False),
 (1, 'a', True),
 ['*"sparta"', '123+']]
```

4. Create a dictionary 'fruit' where:

- a. The first key is 'Fruit' and the values are ("Apple", "Banana", "Mango", "Guava")
- b. The second key is 'Cost' and the values are (85, 54, 120, 70)
- c. Extract all the keys from 'fruit'
- d. Extract all the values from 'fruit'

In [21]:
```
fruit = {'Fruit':("Apple", "Banana", "Mango", "Guava"), 'Cost':(85, 54, 120, 70)}
fruit
```

Out[21]:
```
{'Fruit': ('Apple', 'Banana', 'Mango', 'Guava'), 'Cost': (85, 54, 120, 70)}
```

In [22]:
```
fruit.keys()
```

Out[22]:
```
dict_keys(['Fruit', 'Cost'])
```

In [23]:
```
fruit.values()
```

Out[23]:
```
dict_values([('Apple', 'Banana', 'Mango', 'Guava'), (85, 54, 120, 70)])
```

5. Create a set named 'my_set' with values (1, 1, "a", "a", True, True) and print the result.

In [28]:
```
my_set = {1, 1, "a", "a", True, True}
print(my_set)
```

```
{1, 'a'}
```