

Q1. Create one variable containing following type of data:

- (i) string
- (ii) list
- (iii) float
- (iv) tuple

```
In [1]: 1 # String
        2 string = "Assignment No 1"
```

```
In [2]: 1 # List
        2 list1 = ['list', 1, 0.5, [1,2,3]]
```

```
In [3]: 1 # float
        2 float1 = 2.5
```

```
In [4]: 1 tup = ('list', 1, 0.5)
```

Q2. Given are some following variables containing data:

- (i) var1 = ''
- (ii) var2 = ['DS', 'ML', 'Python']
- (iii) var3 = ['DS', 'ML', 'Python']
- (iv) var4 = 1.

What will be the data type of the above given variable.

```
In [5]: 1 var1 = ''
        2 type(var1) #--> String
```

Out[5]: str

```
In [6]: 1 var2 = ['DS', 'ML', 'Python']
        2 type(var2) #--> String
```

Out[6]: str

```
In [7]: 1 var3 = ['DS', 'ML', 'Python']
        2 type(var3) #--> List
```

Out[7]: list

```
In [8]: 1 var4 = 1
        2 type(var4) #--> Int
```

Out[8]: int

Q3. Explain the use of the following operators using an example:

- (i) / ----: float Division operator, This operator used to divides the first operand by other operand

- (ii) % ---: Modulus operator, returns the remainder when the first operand divided by second operand
- (iii) // -: floor Division operator. returns the quotient value when divides the first operand by the second operand
- (iv) **---: power operator. returns the first raised to power second

Q4. Create a list of length 10 of your choice containing multiple types of data. Using for loop print the element and its data type.

```
In [9]: 1 iter = [1,2.3,57,'hai', 8,'india',7846,'python',2.7,'assignment']
        2 for i in iter:
        3     print(i,'----:',type(i))
```

```
1 ----: <class 'int'>
2.3 ----: <class 'float'>
57 ----: <class 'int'>
hai ----: <class 'str'>
8 ----: <class 'int'>
india ----: <class 'str'>
7846 ----: <class 'int'>
python ----: <class 'str'>
2.7 ----: <class 'float'>
assignment ----: <class 'str'>
```

Q5. Using a while loop, verify if the number A is purely divisible by number B and if so then how many times it can be divisible.

```
In [20]: 1 a=int(input())
        2 b=int(input())
        3 c = 0
        4 d = 0
        5 if a%b==0:
        6     while a>=b:
        7         c+=1
        8         a = a/b
        9 else:
        10     print('Not divisible')
        11 print(c)
```

3

Q6. Create a list containing 25 int type data. Using for loop and if-else condition print if the element is divisible by 3 or not.

```
In [22]: 1 iter1= list(range(25))
          2 for i in iter1:
          3     if i%3==0:
          4         print(i, 'is divisible by 3')
          5     else:
          6         print(i, 'is not divisible by 3')
```

```
0 is divisible by 3
1 is not divisible by 3
2 is not divisible by 3
3 is divisible by 3
4 is not divisible by 3
5 is not divisible by 3
6 is divisible by 3
7 is not divisible by 3
8 is not divisible by 3
9 is divisible by 3
10 is not divisible by 3
11 is not divisible by 3
12 is divisible by 3
13 is not divisible by 3
14 is not divisible by 3
15 is divisible by 3
16 is not divisible by 3
17 is not divisible by 3
18 is divisible by 3
19 is not divisible by 3
20 is not divisible by 3
21 is divisible by 3
22 is not divisible by 3
23 is not divisible by 3
24 is divisible by 3
```

Q7. What do you understand about mutable and immutable data types? Give examples for both showing this property.

- Mutable Is a object which allow us to change the value or data by without affecting the object's identity. Eg: List, set, dictionary
- Immutable Is a data types are those, whose values cannot be modified once they are created Eg: int, String, tuple