QUES: Create one variable using string list float tuple

In [1]:
```
# String
name = "Arjun Singh"
name
```

Out[1]:
```
'Arjun Singh'
```

#list l = [1,2,3] l

In [2]:
```
#float
deci_num = 81.4
deci_num
```

Out[2]:
```
81.4
```

In [3]:
```
#tuple
t = ("apple","ball","physics wallah")
t
```

Out[3]:
```
('apple', 'ball', 'physics wallah')
```

QUES: Given are some following variables containing data , wha t aill be the data type of given variables?

1. var1 ="
2. var2 = '[DS,ML,PYTHON]'
3. var3 = ['DS','ML','PYTHON']
4. var4 = 1

ANS: 1. Strings

1. String
2. list
3. int

QUES: Explain the use of following operators usinf an example

1. /
2. %
3. //
4. **

In [4]:
```
# examples
# / -----> its function is to divide the numbers
div = 2/3
div
```

Out[4]:
```
0.6666666666666666
```

In [5]:
```
# %  -----> its function is to divide the numbers and gives its remainder
modu = 2%3
modu
```

Out[5]:
```
2
```

In [7]:
```
# //  ----> it divides the number and gives its floor value(greatest inteager)
double_div = 5//3
double_div
```

Out[7]:
```
1
```

In [8]:
```
# ** -----> it raise to the power of any number
pow = 2**3
pow
```

Out[8]:
```
8
```

QUES: Creates a list of lenth of your choice containing multiple type of data .Use for loop to print its elements and its data type

In [9]:
```
l = ["arjun","banana",12.45,True,54,False,(1,2),[1,2,3],"bowl",None]
for i in l :
    print(i,type(i))
```

```
arjun <class 'str'>
banana <class 'str'>
12.45 <class 'float'>
True <class 'bool'>
54 <class 'int'>
False <class 'bool'>
(1, 2) <class 'tuple'>
[1, 2, 3] <class 'list'>
bowl <class 'str'>
None <class 'NoneType'>
```

QUESTION 5: Using a while loop ,verify the number A is purly divisible by number B and if so then how many times it can be divisible

In [11]:
```
A = int(input("enter the first number:"))
B = int(input("enter the second number:"))

count = 0

while A%B == 0:
    A = A//B
    count += 1

print("number A is divible by number B ",count, "times")
```

```
enter the first number:4
enter the second number:2
number A is divible by number B  2 times
```

QUES6: Create a list containing 25 int type data .Using for loop and if else conditionprint if the element is divisible by 3 or not.

In [12]:
```
my_list = [2,5,8,7,9,3,12,47,56,98,45,18,10,98,11,12,65,98,65,87,54,24,27,30,39]
for i in my_list:
    if i%3 == 0:
            print (i,"this number is divisble by 3")
    else:
            print(i,"this number is not divible by 3")
print(my_list)
```

```
2 this number is not divible by 3
5 this number is not divible by 3
8 this number is not divible by 3
7 this number is not divible by 3
9 this number is divisble by 3
3 this number is divisble by 3
12 this number is divisble by 3
47 this number is not divible by 3
56 this number is not divible by 3
98 this number is not divible by 3
45 this number is divisble by 3
18 this number is divisble by 3
10 this number is not divible by 3
98 this number is not divible by 3
11 this number is not divible by 3
12 this number is divisble by 3
65 this number is not divible by 3
98 this number is not divible by 3
65 this number is not divible by 3
87 this number is divisble by 3
54 this number is divisble by 3
24 this number is divisble by 3
27 this number is divisble by 3
30 this number is divisble by 3
39 this number is divisble by 3
[2, 5, 8, 7, 9, 3, 12, 47, 56, 98, 45, 18, 10, 98, 11, 12, 65, 98, 65, 87, 54, 24, 27, 30, 39]
```

QUES: What don you understand about mutable and immutable data type? Give examples for both showing this property

ANS. (1.) Mutable data type can be modified once they are created.This means that their element can be changed without creating a new variable.examples of mutable data type includes lists and dictonaries.

(2.) immutable data type cannot be modified .any operration is appears to be modified an immutable obect actually creates a new variable with that perticular changes.Example of immutable data type are string and tuples.

In [13]:
```
# Example of mutable data type
my_list = [1,2,3,4,5]
print(my_list)   # -----> output [1,2,3,4,5]

my_list.append(6)  #modify the list by adding an element
print(my_list)  #output ------> [1,2,3,4,5,6]
```

```
[1, 2, 3, 4, 5]
[1, 2, 3, 4, 5, 6]
```

In [ ]:
```
# example of immutable data type

my_string = "Hello World"
print(my_string)  #output  ----> hello world

my_string = my_string + " Hare Krishna" # creates a new string by concatination
print(my_string)  # output -----> Hello World Hare Krishna

#trying to modify the character in the string gives us error
my_string[0] = "h"  # this gives an error
```