In [ ]:

```
                                                PYTHON BASICS

                                                ASSIGNMNET-01


1.In the below elements which of them are values or an expression? eg:-values can be i
expressions will be mathematical operators
 *
 'hello'
 -87.8
 -
 /
 +
 6
 A: We can clearly see that:
     total number of operators=4
     total number of expressions=3
     Operators: *,-,/,+
     Expressions:'hello',-87.8,6


2.What is the difference between string and variable?
A: The major difference between string and variable is that a
     variable is used to store of information,and a string is a
     type of information you would store in a variable.
     A string is group of characters or a single character
     usually enclosed in Double quotes(" ") or single quotes
     (' ')

3.Describe three different data types?
A: Three fundamental Data types in Python are int,float,complex.
   1.int data type:
     we can use int data type to represent whole numbers
     (integral values)
   2.float data type:
     we can use float data type to represent floating point
     values(decimal values)
   3.complex data type:
     Complex number is represented by complex class.
     It is specified as (real part)+(imaginary part)j
```

In [2]:

```
#Example for int data type
int_num=4567
print(int_num,type(int_num))
#Example for float data type
flo_num=1.2e3
print(flo_num,type(flo_num))
#Example for complex data type
com_num=11+11.11j
print(com_num,type(com_num))
```

```
4567 <class 'int'>
1200.0 <class 'float'>
(11+11.11j) <class 'complex'>
```

4.What is an expression made up of? What do all expressions do? A: An expression is a combination of Values,Variables,operators and calls to functions.Expressions need to be evaluated. If we ask Python to print an expression,the interpreter evaluates the expression and displays the result.

In [4]:
```
9*3+4-8
#This is an Expression,The Python Interpreter Evaluates it to 23
```

Out[4]:
```
23
```

5.This assignment statements,like spam=10.What is the difference between an expression and a statement? A:Expression- An expression is a combnation of values,variables and operators.When we type an expression at the prompy,the interpreter evaluates it,which means that it finds the value of the expression eg:4*5+20-40 is an example of an statement Statement: A Statement is a unit of code that has an effect,like creation a variable or displaying a value.When we type a statement,the interpreter executes it,which means that it does whatever the statement says:In general,statements don't have values eg:variable declaration and assignment are statements because they do not return a value.

In [5]:
```
#Example:
4*5+20-40 #is an expression
courseName='INEURON FULLSTACK DATASCIENCE' #This is a statement
print('hello world!') #this is an expression statement
```

```
hello world!
```

6.After running the following code,what does the variable bacon contain? bacon=22 bacon+1 A: The variable bacon is set to 22.The expression bacon+1 does not reassign the value in bacon(that would the case if the expression is like bacon=bacon+1 instead of bacon+1)

In [6]:
```
bacon=22
bacon+1
print(bacon)
```

```
22
```

In [7]:
```
bacon=22
bacon=bacon+1
print(bacon)
```

```
23
```

7.What should the values of the following two terms be? 'spam'+'spamspam' 'spam'*3

In [8]:
```
#string concatenation
print('spam'+'spamspam')
#String multiplication
print('spam'*3)
```

```
spamspamspam
spamspamspam
```

8.Why is eggs a valid variable name while 100 is invalid? A: As per Python,Variable names cannot begin with a number.The Python rules for naming a variable are:- 1.Variable name must start with a letter or the underscore character. 2.Variable name cannot start with a number. 3.Variable name can only contain alpha-numeric characters and underscores(A-Z,0-9,&_). 4.Variable name are case-sensitive(name,INEURON and ineuron are three different variables). 5.The reserved words(keywords)cannot be used naming the variable.

In [9]:
```
egg='INeuron' #valid variable initialization
100='INeuron'#invalid variable initialization
print(egg)#prints the value of egg
print(100)#raises a syntax error
```

```
  Cell In [9], line 2
    100='INeuron'#invalid variable initialization
    ^
SyntaxError: cannot assign to literal here. Maybe you meant '==' instead of '='?
```

In [10]:
```
egg='INeuron'#valid variable
print(egg)#prints the value of egg
```

```
INeuron
```

9.What three functions can be used to get the integer,floating-point number,or string version of a value? A: The int(),float(),and str() functions will evaluate to the integer,floating-point number,string version of the value passed to them.

In [11]:
```
print('int(10.0) -> ',int(10.0))
#int() function converts given input to int
print('float(10) ->',float(10))
#float() function converts given input to float
print('str(10) ->',str(10))
#str() function converts given input to string
```

```
int(10.0) ->  10
float(10) -> 10.0
str(10) -> 10
```

10.How does this expression cause an error?How can you fix it? 'I have eaten'+99+'burritos' A:The cause of error is 99,because 99 is not a string. 99 must be typecasted to a string to fix this error.The correct way is: input: 'I have eaten'+str(99)+'burritos' output: I have eaten 99 burritos

In [5]:
```
print('I have eaten '+str(99)+' burritos')
```

```
I have eaten 99 burritos
```