

# Assignment 1 Solutions

**1. In the below elements which of them are values or an expression? eg:- values can be integer or string and expressions will be mathematical operators.**

\*, 'hello', -87.8, -, /, +, 6

**ANS:** There are a total of 4 Operators and 3 Expressions, They are:

**Operators:** -, /, \*, +

**Expressions:** 'hello' , 87.8, 6

## 2. What is the difference between string and variable? ¶

**ANS:** A Variable is used to store information, String is a type of information you would store in a Variable. A String is a group of characters or a single character usually enclosed in Double quotes ''

## 3. Describe three different Data types ?

**ANS:** 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 [1]:

```
1 # Example for int data type
2 int_num=200
3 print(int_num, type(int_num))
4 # Example for float data type
5 flo_num=1.3e3
6 print(flo_num, type(flo_num))
7 # Example for Complex data type
8 com_num=20+3.5j
9 print(com_num, type(com_num))
```

```
200 <class 'int'>
```

```
1300.0 <class 'float'>
```

```
(20+3.5j) <class 'complex'>
```

## 4. What is an expression made up of? What do all expressions do?

**ANS:**An expression is a combination of values,variable,operators,and calls to function.Expression need to be evaluated.If we ask python to print an expression,the interpreter evaluates the expression and displays the result.

In [10]:

```
1 6*7+30-50 # Is an Expression, The python Interpreter Evaluates it to 0
```

Out[10]:

22

## 5. This assignment statements,like spam = 10.What is the difference between an expression and a statement?

**ANS:**An expression is a combination of values,variables,and operators.When we type an expression at the prompt,the interpreter evaluates it,which means that it finds the value of the expression.

eg:6\*7+30+50 is an example of a statement

A statement is a unit of code that has an effect,like creating 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 statement because they do not return a value

In [2]:

```
1 6*7+30+50 # Is a Expression
2 courseName = 'INeuron FullStack DataScience' # Is a Statement
3 print("Hello World !") # Is a Expression Statement
4
```

Hello World !

## 6. After running the following code,what does the variable bacon contain?

**bacon = 33** **bacon + 2**

**ANS:**The variable bacon is set to 33 .The expression bacon + 2 does not reassign the value in bacon (that would the case if the expression is like bacon = bacon + 2 instead of bacon + 2

In [3]:

```
1 # Example Case#1
2 bacon=33
3 bacon+2
4 print(bacon)
5
```

33

In [4]:

```

1 #Example Case#2
2 bacon=33
3 bacon=bacon+2
4 print(bacon)

```

35

## 7.What should the values of the following two terms be?

'spam'+'spamspam'

'spam'\*4

**ANS:**Both expressions evaluate to the string 'spamspamspam' Where as the first expression follows String Concatentation and the second expression follows String Multiplication

In [5]:

```

1 print('spam'+'spamspam')# string concatenation
2 print('spam'*4) # string multiplication
3

```

```

spamspamspam
spamspamspamspam

```

## 8. Why is eggs a valid variable name while 100 is invalid?

**ANS:**As per python,Variable names cannot begin with a number. The python rules for naming a variable are:-

- 1.Variable name must start with 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, 0-8,&\_)
- 4.Variable names are case-sensitive(name,INEURON and ineuron are three different variables).
- 5.The reserved words(keywords) cannot be used naming the variable.

In [6]:

```

1 egg='Ineuron' # Valid variable Initilization
2 100='hello' # Invalid Variable Initilization
3 print(egg) #prints the value of egg ie Ineuron
4 print(100) # Raises a Syntax Error as 100 is not a valid variable name

```

```

File "C:\Users\abhik\AppData\Local\Temp\ipykernel_14868\1978165532.py", li
ne 2

```

```

    100='hello' # Invalid Variable Initilization
    ^

```

**SyntaxError:** cannot assign to literal

## 9.What three functions can be used to get the integer,floating-point number,or string version of a value?

**ANS:**The int() , float() ,and str() functions will evaluate to the integer,floating-point number,string version of the value passed to them.

In [7]:

```
1 print('int(20.0) -> ',int(20.0)) # int() function converts given input to int
2 print('float(20) -> ',float(20)) # float() function converts given input to float
3 print('str(20) -> ',str(20)) # str() function converts given input to string
```

```
int(20.0) -> 20
float(20) -> 20.0
str(20) -> 20
```

## 10.Why does this expression cause an error?how can you fix it?

**'I have eaten ' + 88 + 'burritos.'**

**ANS:**This cause of error is 88.because 88 is not a string. 88 must be typecasted to a string to fix this error.the correct way is:

Input: 'I have eaten ' + str(88) + 'burritos.

Output: 'I have eaten 88 burritos.'

In [8]:

```
1 print('I have eaten '+str(88)+' burritos')
```

I have eaten 88 burritos

In [ ]:

```
1
```