

# 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 [2]:

```
# Example for int data type
int_num=6789
print(int_num, type(int_num))
# Example for float data type
flo_num=2.3e4
print(flo_num, type(flo_num))
# Example for Complex data type
com_num=20+2.6j
print(com_num, type(com_num))
```

```
6789 <class 'int'>
23000.0 <class 'float'>
(20+2.6j) <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 [3]:

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

Out[3]:

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 [4]:

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

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 [5]:

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

33

In [7]:

```
#Example Case#2
bacon=33
bacon=bacon+2
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 Concatenation and the second expression follows String Multiplication

In [9]:

```
print('spam'+'spamspam')# string concatenation
print('spam'*4) # string multiplication
```

```
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, 0-9, & \_)
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 [10]:

```
egg='Ineuron' # valid variable Initialization
100='hello' # Invalid Variable Initialization
print(egg) #prints the value of egg ie Ineuron
print(100) # Raises a syntax Error as 100 is not a valid variable name
```

```
File "C:\Users\hrush\AppData\Local\Temp\ipykernel_10648\63897423.py", line 2
    100='hello' # Invalid Variable Initialization
    ^
```

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 [11]:

```
#Examples:
print('int(20.0) -> ',int(20.0)) # int() function converts given input to int
print('float(20) -> ',float(20)) # float() function converts given input to float
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(99) + 'burritos. ' Output: 'I have eaten 88 burritos.'
```

In [12]:

```
print('I have eaten '+str(99)+' burritos')
```

```
I have eaten 99 burritos
```