

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 1:

* ----expression

'hello' -----value

-87.8 -----value

- -----expression

/ -----expression

+ -----expression

6 -----value

2. What is the difference between string and variable?

Ans 2:

Variable is used to store the data , it can store int,float, boolean, string etc.

E.g. A= 4,

A = 'Ineuron'

A = True

A =4.4

Whereas

String is a literal text string e.g. 'Ineuron'

3. Describe three different data types.

Ans 3:

1. Numeric (represent the data which has numeric value.)
 - A. Integer (It contains positive or negative whole numbers (without fraction or decimal).)
 - B. Complex numbers (specified as *(real part) + (imaginary part)j*.)
 - C. Float (It is a real number with floating point representation. It is specified by a decimal point.)
2. Boolean (Data type with one of the two built-in values, True or False)
3. Set (unordered collection of data type that is iterable, mutable and has no duplicate elements.)
4. Sequence Type (ordered collection of similar or different data types)
 - A. Strings (A string is a collection of one or more characters put in a single quote, double-quote or triple quote.)
 - B. List (just like the arrays,is an ordered collection of data.)
 - C. Tuple(also an ordered collection of Python objects. The only difference between tuple and list is that tuples are immutable)
5. Dictionary (Dictionary holds key:value pair.)

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

Ans 4 :

Expression is a combination of variables, operations and values that returns some result after expression is evaluated.

E.g. `a = b+c # b=2 , c=3`

`print(a) # a becomes 5`

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

Ans 5:

> Expression is a combination of variables, operations and values that returns some result after expression is evaluated.

E.g. `a = b+c # b=2 , c=3`

`print(a) # a becomes 5`

> Statements represent an action e.g `print statements, assignment statements`.

E.g. `print 'hello', x = 1, spam = 10.`

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

`bacon = 22`

bacon + 1

```
1  bacon = 22
2  bacon + 1
3  print (bacon)
```

Input	Output
1	22

At line 1: bacon is assigned value 22

At line 2: + operator is used to add 1 to the current bacon value i.e. 22

At line 3: bacon value is printed which comes to be 22 as , at line 2 , after the operation was executed result value wasn't assigned back to bacon variable.

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

'spam' + 'spamspam'

'spam' * 3

Ans 7 :

```
1  print('spam' + 'spamspam')
2  print('spam' * 3)
```

Input	Output
1	spamsppamspam
2	spamsppamspam

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

Ans 8:

Eggs is valid variable name because it follows all rules of variable declaration for python i.e.

- Contains only one word with no spaces,
- Uses only letters/numbers/underscore character (for this case letters)
- Does Not begin with a number

100 is invalid variable name because variable name can't begin with a number.

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

Ans 9:

int(), float(), str() can be used to get the integer, floating-point number, or string version of a value respectively.

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

'I have eaten '+ 99 +' burritos'

Ans 10:

+ operator is used to concatenate the multiple string values together, i.e. Concatenate str to str only

But in the given example 'I have eaten '+ 99 +' burritos' 99 is integer

```
script.py
1 print('I have eaten'+ 99 +'burritos')

Input    Output
1        Traceback (most recent call last):
2          File "script.py", line 1, in <module>
3            print('I have eaten'+ 99 +'burritos')
4          TypeError: can only concatenate str (not "int") to str
```

Hence it is giving error

If 99 is changed to string, this statement will work perfectly fine

```
script.py
1 print('I have eaten '+ str(99) +' burritos')

Input    Output
1        I have eaten 99 burritos
```