

**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.**

\* → expression

'hello' → Value

-87.8 → Value

- → expression

/ → expression

+ → expression

6 → Value

**2. What is the difference between string and variable?**

String can be written in quotes such: "banana", 'banana'

Variables are containers for storing data values.

**3. Describe three different data types.**

List: the list is used for storing multiple data items in a single variable.

Integer: integer can store only numerical values.

Float: float can store only floating values such as 457.41, 45.2, etc.

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

Expression is made up of values, containers, and mathematical operators (operands) e.g

a = 5 + 5 and expressions are used to evaluate the values or represent the result on the screen.

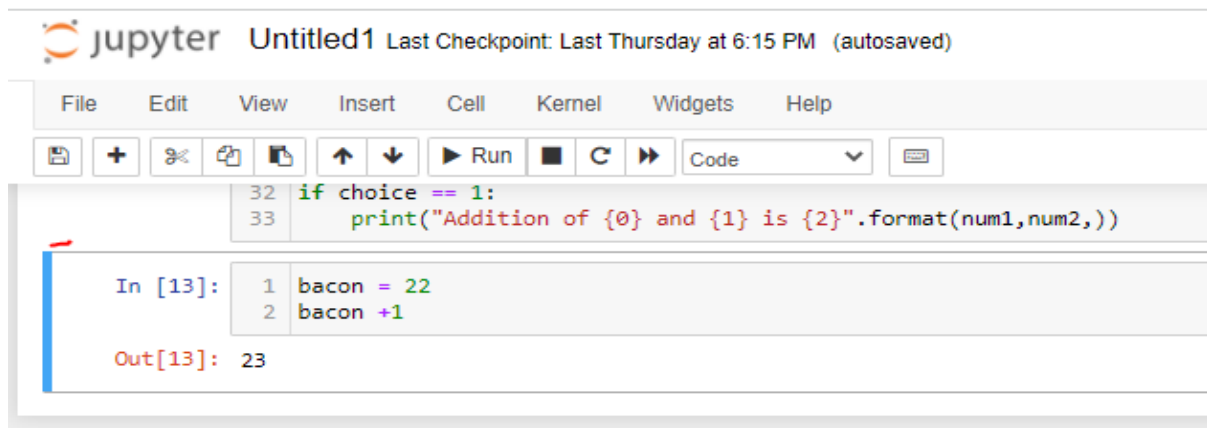
**5. This assignment statements, like spam = 10. What is the difference between an expression and a statement?**

Expression is made up of values, containers, and mathematical operators (operands) and the statement is just like a command that a python interpreter executes like print.

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

```
bacon = 22
```

```
bacon + 1
```



The screenshot shows a Jupyter Notebook interface. The top bar indicates the file is 'Untitled1' and the last checkpoint was on 'Last Thursday at 6:15 PM (autosaved)'. The menu bar includes File, Edit, View, Insert, Cell, Kernel, Widgets, and Help. Below the menu is a toolbar with icons for file operations, running, and other notebook functions. The main area contains two code cells. The first cell is a code cell with the following Python code:

```
32 if choice == 1:
33     print("Addition of {0} and {1} is {2}".format(num1,num2,))
```

The second cell is an input cell (In [13]:) containing the following code:

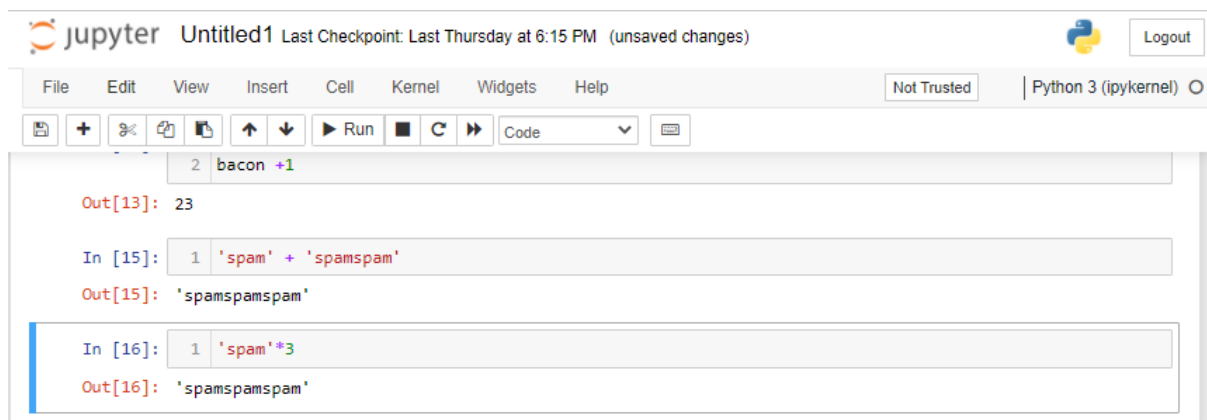
```
1 bacon = 22
2 bacon +1
```

The output of the input cell is shown as 'Out[13]: 23'.

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

```
'spam' + 'spamspam'
```

```
'spam' * 3
```



The screenshot shows a Jupyter Notebook interface. The top bar indicates the file is 'Untitled1' and the last checkpoint was on 'Last Thursday at 6:15 PM (unsaved changes)'. The menu bar includes File, Edit, View, Insert, Cell, Kernel, Widgets, and Help. Below the menu is a toolbar with icons for file operations, running, and other notebook functions. The main area contains three input cells. The first cell is an input cell (In [13]:) containing the following code:

```
2 bacon +1
```

The output of the first cell is shown as 'Out[13]: 23'. The second cell is an input cell (In [15]:) containing the following code:

```
1 'spam' + 'spamspam'
```

The output of the second cell is shown as 'Out[15]: 'spamspamspam''. The third cell is an input cell (In [16]:) containing the following code:

```
1 'spam'*3
```

The output of the third cell is shown as 'Out[16]: 'spamspamspam''.

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

Because we can't start giving variable an integer name. if we, we should begin with, a string-like alphabet name then integer. e100 or eggs100 is valid

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

```
str(), int(), float()
```

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

**'I have eaten ' + 99 + ' burritos.'**

because 99 is an integer it cannot be concatenated with strings, if we have to concatenate it we need to do typecasting.