

Assignment-1

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. Value: 'hello', -87.8, 6

Expression: *, -, /, +

2. What is the difference between string and variable?

Ans.

String:

- String is a set of characters which form words or even sentences which are typically enclosed in single or double inverted commas.
- The special characters and numbers if enclosed in quoted commas is as well gets converted to string.

Variable:

- Variable can be a word or a single letter which can be used to store a value of any data type like integer, float, string, list, etc.
- It can be any name or letter but should not be a reserved keywords in Python or any other programming language.

3. Describe three different data types.

Ans.

Lists:

Lists are one of the most powerful tools in python. They are just like the arrays declared in other languages. But the most powerful thing is that list need not be always homogeneous. A single list can contain strings, integers,

as well as objects. Lists can also be used for implementing stacks and queues. Lists are mutable.

```
Ex. i/p: L = [1, "a" , "string" , 1+2]
        print L
```

```
o/p: [1, 'a', 'string', 1+2]
```

Tuples:

A tuple is a sequence of immutable Python objects. Tuples are just like lists with the exception that tuples cannot be changed once declared. Tuples are usually faster than lists.

```
Ex. i/p: tup = (1, "a", "string", 1+2)
        print(tup)
        print(tup[1])
```

```
o/p: (1, 'a', 'string', 3)
      a
```

Dictionary:

Dictionary in Python is an unordered collection of data values, used to store data values like a map, which, unlike other data types that hold only a single value as an element, Dictionary holds key:value pair. Key-Value is provided in the dictionary to make it more optimised.

```
Ex. Dict = { 1:'Pratik', 2:'Ravindra', 3:'Kodilkar'}
```

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

Ans.

An expression is a combination of operators and operands that is interpreted to produce some other value. In any programming language, an expression is evaluated as per the precedence of its operators. So that if there is more than one operator in an expression, their precedence decides which operation will be performed first. We have many different types of expressions in Python.

- Arithmetic Expressions
- Logical Expressions
- Bitwise Expressions
- Relational Expressions
- Floating Expressions, etc.

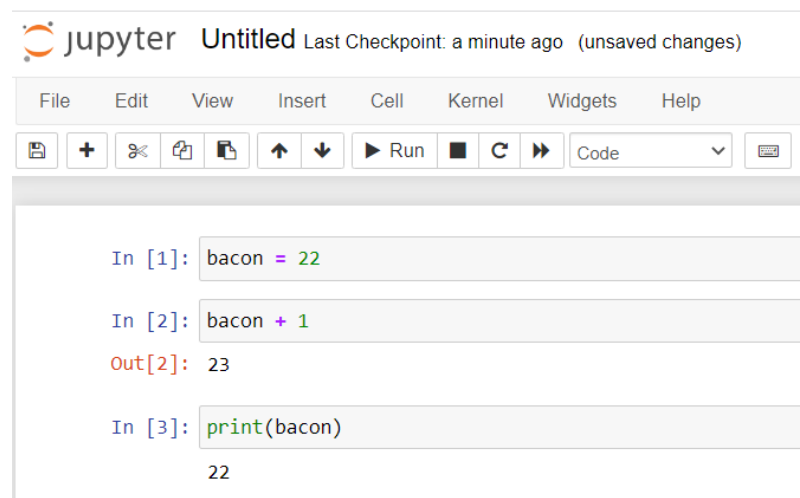
5. This assignment statements, like `spam = 10`. What is the difference between an expression and a statement?

Ans. Expression is made up of values, containers, and mathematical operators 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
```

Ans. 23



The image shows a Jupyter Notebook interface with the title 'Untitled' and a status bar indicating 'Last Checkpoint: a minute ago (unsaved changes)'. The menu bar includes File, Edit, View, Insert, Cell, Kernel, Widgets, and Help. The toolbar contains icons for saving, adding cells, undo, redo, and running code. The code area shows three input cells:

```
In [1]: bacon = 22
```

```
In [2]: bacon + 1
```

The output for the second cell is displayed as:

```
Out[2]: 23
```

```
In [3]: print(bacon)
```

The output for the third cell is displayed as:

```
22
```

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

`'spam'+ 'spamspam'`

`'spam'* 3`

Ans.

```
In [7]: 'spam'+ 'spamspam'
```

```
Out[7]: 'spamspamspam'
```

```
In [9]: 'spam'* 3
```

```
Out[9]: 'spamspamspam'
```

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

Ans.

- Any string which has a character or a set of characters, doesn't matter if it's a word in the English dictionary or not. It can still be considered as a variable if it's a string. "eggs" is a string.
- But a variable can be a combination of alphabetic as well as integer characters, condition is that variable must always start with an alphabet, doesn't matter if it contains n number of integer thereafter.
- Variable should not be a combination of alphabets and decimal numbers.

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

Ans.

Integer — `int()`

Floating-point — `float()`

String — `str()`

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

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

Ans.

```
In [6]: 'I have eaten '+str(99)+' burritos.'
```

```
Out[6]: 'I have eaten 99 burritos.'
```