

1. In the below elements which of them are values or an expression?

Answer:

Eg: - values can be integer or string and expressions will be mathematical operators.

| | | |
|----|---------|------------|
| 1. | * | Expression |
| 2. | 'hello' | Values |
| 3. | -87.8 | Values |
| 4. | - | Expression |
| 5. | / | Expression |
| 6. | + | Expression |
| 7. | 6 | Values |

2. What is the difference between string and variable?

Answer:

String: String is a class, a reference data type which is use to represent text type data. Also, we can say anything we assign to variable using quotes (double or single) will be consider as string.

Ex:

```
a = "10"
```

```
b = "20"
```

```
print (a+b)
```

```
# (a+b) will return 1020
```

Variable: Variables are containers for storing data values. Interestingly, in python there is no specific command to declaring a variable. Therefore, a variable is created the moment we first assign a value to it. Variable names are case-sensitive (age and Age are two different variable)

Ex:

```
x = 10
```

```
#x is variable that stores the value 10.
```

3. Describe three different data types.

Answer:

- **Integer:** This data type is represented with the help of **int** class. It consists of positive or negative whole numbers (without fraction or decimal). In Python, there's no limit to how long integer values are often.

Example:

```
a=10
```

```
type(a)
```

Output: int

- **Float:** This type is represented by the float class. It is a true number with floating-point representation. It is specified by a decimal point.

Example:

```
b = 1.5
```

```
type(b)
```

Output: float

- **Complex Numbers:** Complex numbers are represented by complex classes. It is specified as (real part) + (imaginary part) j

Example:

```
c = 4 + 5j
```

```
type(c)
```

Output: complex

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

Answer: An expression is a combination of operators and operands that is interpreted to produce some other value. Expressions need to be evaluated. If you ask python to print an expression, the interpreter evaluates the expression and display the result.

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

Answer:

A statement is an instruction that the python interpreter can execute. An expression is a combination of values, variables, operators and calls to functions.

An assignment statement evaluates the expression list (this can be a single expression or a comma-separated list) and assign the single resulting object to each of the target lists, from left to right.

Some other kinds of statements are while statements, for statements, if statements and so on.

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

```
bacon = 22
```

```
bacon + 1
```

Answer: 23

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

Answer:

- 'spam' + 'spamspam'

Output : 'spamspamspam'

- 'spam' * 3

Output : 'spamspamspam'

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

Answer:

A variable name must start with a letter or the underscore character. A variable

name cannot start with a number. That's why eggs is valid variable name but 100 is invalid.

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

Answer:

The `int()` , `float()` , `str()` functions will evaluate to the integer, floating-point number and string versions of a value.

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

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

Answer:

This expression cause an error because python does not allow concatenation values of different types.

We can resolve the issue by conversion the integer values to string before concatenating them in the print statement.

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