

1. What are the differences between operators and values in the following?

*

'hello'

-87.8

-

/

+

6

Ans: *Operators: *, -, /, + these are the operators they require values to perform operation.*

Values: 'hello', -87.8, 6 these are the values themselves, they mean something as an individual. They can be stored in variables.

2. What is the difference between string and variable?

spam

'spam'

Ans: *String: It is a data type which stores set of characters (including alphanumeric and special characters) declared between inverted commas. Here, 'spam' is a string.*

Variable: It is used to store any values be it of any data type. These variables are used in performing operations on stored values. Here, spam is a variable.

3. Describe three different data forms.

Ans: *i) int (integer): int is a keyword and represents integer type of value (data) is to be stored in the variable. Eg: a = 10, here a is a variable which stores integer data type*

ii) Float: Stores decimal type of values in the variables. Eg: a = 2.20, here a is variable of float data type.

iii) str (string): It is a data type which stores set of characters (including alphanumeric and special characters) declared between inverted commas. Eg: a = 'my_name', a represents a string data type

4. What makes up an expression? What are the functions of all expressions?

Ans: *Variables, operators, operations on variables to give a simplified value together is an expression. It evaluates and simplifies values unlike statements which only perform some defined procedures. Ex: $a = (b+c)$ and (c) represents an expression, here in RHS, some operation is performed and a simplified value is generated.*

5. In this chapter, assignment statements such as `spam = 10` were added. What's the difference between a declaration and an expression?

Ans: *In python we don't declare variables using data types, since it is dynamically typed we directly assign values in variable and interpreter manages during run time. So, we assign directly values to the variable during declaration. Whereas in an expression some operations is performed and a simplified value is assigned in variable.*

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

```
bacon = 22
```

```
bacon + 1
```

Ans: *bacon contains 22. Because in second statement it is not assigned to any variable so bacon value doesn't change.*

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

```
'spam' + 'spamspam': o/p: 'spamspamspam'
```

```
'spam' * 3 :o/p: 'spamspamspam'
```

8. Why is it that `eggs` is a true variable name but `100` is not?

Ans: *Because a variable name cannot start with number. 100 as a variable name violate the rules hence it is invalid name.*

9. Which of the following three functions may be used to convert a value to an integer, a floating-point number, or a string?

Ans: *To convert value to an integer : int (value) is used, provided value should contain numerical value or boolean not characters.*

To convert value to float: float (value) function is used. String value other than number characters cannot be converted.

To convert value to string: str (value) function is used.

10. What is the error caused by this expression? What would you do about it?

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

Ans: *Error encountered: unsupported operand types.*

Concatenation can be done if all are string values only. So, 99 can be converted to string and result can be obtained.

Correction: 'I have eaten ' + str(99) + ' burritos.'