

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

*

'hello'

-87.8

-

/

+

6

Answer :

1. * :

- Used as multiplication operator. E.g.
Code: 5*3
Output: 15
- Used as repetition operator. E.g.
Code: 's'*3
Output: sss
- When used twice works as square operator. E.g.
Code: 2**2
Output: 4

2. 'hello' : 'hello' is a datatype string value.

3. -87.8 : It is a datatype float value.

4. - : Its is used as subtraction operator.

Code: 5-3

Output : 2

5. / :

- It is used as division operator and outputs float value.
Code : 7/3
Output: 2.333
- When used twice it is used as floor division. Output is interger.
Code: 7//3
Output : 2

6. +:

- Used as addition operator :
Code: 5+3
Output: 8
- Also can be used as concatenation operator for same datatypes:
Code : 'aniket'+ 'salvi'
Output: 'aniketsalvi'

7. 6 : 6 is a integer value number/

2. What is the difference between string and variable?

spam

'spam'

Answer : 'spam' is datatype representing text. This type of datatype are usually quoted in single or double quotes.

spam is a variable name. Variable name can be any name, which does not start with number, special symbols and usually includes text and underscore. This variable name allocates a memory to store datatype values.

Code: spam ='spam'

Here spam is a variable name that stores 'spam' string data in a allocated memory location.

3. Describe three different data forms.

Answer :

1. Integer is a datatype that includes any decimal number . E.g. 2,58,78946.
2. Float is a datatype that includes natural number from –infinity to +infinity with a floating point. E.g. 2.3,8.978,5555.5.
3. String is datatype that includes text data usually, but can also include numbers, symbols which must be quoted in single or double quotes. E.g. 'ineuron',"66.32".

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

Answer: Expression in python consists of three parts ; variable name , datatypes and operators.

Variable name is name given to memory location at which final output of an expression is saved, can also be said as memory location identifiers.

Datatypes are the values on which operations like arithmetic, logical operations, comparison operations are performed to get the output of expression. Datatypes values can be string, integers, float values, etc.

Operators are used to perform calculations on datatypes and output to be stored in variable name. Operators can be Arithmetic operators, Boolean Operators, Logical Operators, Comparison operators, etc.

E.g. add= 5+3

This is a normal addition expression, that has '+' as addition operator , 5 and 3 as integer datatype on which addition operation is performed, and final output is stored in memory location with variable name 'add'.

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

Answer : Declaration is something that assigns a value to a memory location. Here spam=10, here integer value 10 is stored in memory location addressed by variable name spam.

Expression is something that stores a result in memory location. Like spam=5+5 , will store value 10 in memory location addressed by variable name spam.

Both the above examples, stores value 10 in spam, but declaration store 10 values directly. While in expression result is stored in memory location spam.

Expression is something that always output a result, declaration is direct assignment of value and has not output as result.

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

```
bacon = 22
```

```
bacon + 1
```

Answer : Variable bacon will contain integer value 22. bacon is assigned value 22 in first line, bacon +1 will output result as 23, but actual value of bacon variable is not changed as this result 23 is not assigned back to memory location addressed by bacon variable.

So value of variable remains same i.e. 22.

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

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

```
'spam' * 3
```

Answer : In both the cases output result will be same i.e. 'spamspamspam'

One output will be result of concatenation operator and other from repetition operator.

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

Answer : As per rules for variable name in python. Python variable name cannot be a number or start with a number. So 100 is not a proper way of assigning variable name while egg is correct.

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

Answer : `int()` : It is a function used to convert a value to integer.

`float()` : It is a function used to convert a value to float.

`str()` : It is a function used to convert a value to string.

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

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

Answer : Above expression gives a "Type Error" as string value cannot be concatenated with integer value i.e. 99.