

07_In-Class_Python_Basics_Simple_Operations

21032020-PythonSimpleOperations
Training Clarusway
Pear Deck - March 21, 2020 at 10:16AM

Part 1 - Summary

Use this space to summarize your thoughts on the lesson

Part 2 - Responses

Slide 1



Use this space to take notes:

Slide 2

Table of Contents



- ▶ Arithmetic Operations
- ▶ Operations with `print()` Function
- ▶ Escape Sequences

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Use this space to take notes:

Slide 3



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Use this space to take notes:

Slide 4

Your Response

► Arithmetic Operations

- Let's grasp these operations through several examples:

```
1 print(11-7)
2 print(4 + 11.0)
3 print('11 - 7')
4 print('4' + 4)
5
```

What is the output?



Students, write your response!

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Do not remove this bar

Use this space to take notes:

Slide 5

Draw lines to match the operator to the answer:

**	addition	%
//	subtraction	-
/	exponentiation	+
	division	
	modulus	
	floor division	



Students, draw anywhere on this slide!

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Your Response

Draw lines to match the operator to the answer:

**	addition	%
//	subtraction	-
/	exponentiation	+
	division	
	modulus	
	floor division	



Students, draw anywhere on this slide!

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► Arithmetic Operations

- Let's grasp these operations through several examples:

```
1 print(11-7)
2 print(4 + 11.0)
3 print('11 - 7')
4 print('4' + 4)
5
```

```
4
15.0
11 - 7
Traceback (most recent call last):
  File "code.py", line 5, in <module>
    print('4' + 4)
TypeError: can only concatenate str (not "int") to str
```

Use this space to take notes:

Slide 7

► Arithmetic Operations

- Let's grasp these operations through several examples:

```
1 num1, num2, = 81, 55
2 num3 = num1 - num2
3 print(num3)
4
```

What is the output?



Remember, write your response!

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Your Response

Answer 1:
26

Use this space to take notes:

Slide 8

► Arithmetic Operations

- Let's grasp these operations through several examples:

```
1 num1, num2, = 81, 55
2 num3 = num1 - num2
3 print(num3)
4
```

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Slide 9

► Arithmetic Operations

- Let's grasp these operations through several examples:

```
1 num1, num2, = 81, 55
2 num3 = num1 - num2
3 print(num3)
4
```

26

Use this space to take notes:

Slide 10

► Arithmetic Operations



- Let's calculate the **are** of a **circle**:

- ▷ $r = 5$
- ▷ $\text{area} = ?$



Use this space to take notes:

Slide 11

► Arithmetic Operations



- Let's calculate the **are** of a **circle**:

```
pi = 3.14  
r = 5  
area = pi * r**2  
  
print(area)
```

78.5



Use this space to take notes:


Slide 12	Your Response
	Answer 1: 1 10.0

► Arithmetic Operations

► Let's grasp these operations through several examples:

```
1 print(11 % 2) # remainder of this division is 1
2               # it means 11 is an odd number
3 print((4 * 5) / 2) # parentheses are used as in normal math operations
4
```

What is the output?

 **CLARUSWAY**
SIMPLY EASY, write your response!

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Slide 13

► Arithmetic Operations

► Let's grasp these operations through several examples:

```
1 print(11 % 2) # remainder of this division is 1
2               # it means 11 is an odd number
3 print((4 * 5) / 2) # parentheses are used as in normal math operations
4
```

```
1
10.0
```

 **CLARUSWAY**
SIMPLY EASY, write your response!

13

Use this space to take notes:

Slide 14	Your Response
	Answer 1: 8 9 4

► Arithmetic Operations

- Let's grasp these operations through several examples:

```
1 print(2 ** 3) # 2 to the power of 3
2 print(3 ** 2) # square of 3
3 a = 2
4 b = 8
5 print((a * b) ** 0.5) # square root
6
7
```

What is the output?



CLARUSWAY
SIMPLY EASY, write your response!

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Slide 15

► Arithmetic Operations

- Let's grasp these operations through several examples:

```
1 print(2 ** 3) # 2 to the power of 3
2 print(3 ** 2) # square of 3
3 a = 2
4 b = 8
5 print((a * b) ** 0.5) # square root
6
7
```

```
9
9
4.0
```

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SIMPLY EASY, write your response!

15

Use this space to take notes:

Slide 16

► Arithmetic Operations



Keep in mind this list of priorities for all considered operations

1. parentheses : `()`
2. power : `**`
3. unary minus : `-3`
4. multiplication and division : `*`, `/`
5. addition and subtraction : `+`, `-`

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Slide 17

► Arithmetic Operations

💡 Tips:

- `'Variable' 'math operator' = 'number'` gives the same result as `'Variable' = 'Variable' 'math operator' 'number'`.
- `'Variable' += 'number'` gives the same result as `'Variable' = 'Variable' + 'number'`.

```
x += 3 ⇔ x = x + 3
x *= 3 ⇔ x = x * 3
x **= 3 ⇔ x = x ** 3
```

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Arithmetic Operations

Tips:

- `'Variable' 'math operator' = 'number'` gives the same result as `'Variable' = 'Variable' 'math operator' 'number'`.
- `'Variable' += 'number'` gives the same result as `'Variable' = Variable + number`.

- `--` decrements the variable in place,
- `++` increments the variable in place,
- `*=` multiplies the variable in place,
- `/=` divides the variable in place,
- `//=` floor divide the variable in place,
- `%=` returns the modulus of the variable in place,
- `**=` raises to power in place.

```
x += 3 ⇔ x = x + 3
x *= 3 ⇔ x = x * 3
x **= 3 ⇔ x = x ** 3
```

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Use this space to take notes:

Slide 19

Your Response



Answer 1:

4

Use this space to take notes:

Slide 20

► Arithmetic Operations



- The output :

```
a = (1 + 3 ) ** (2 ** (1 * 2 / 2) / 2)
print(a)
```

```
4.0
```

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Use this space to take notes:

Slide 21

► Arithmetic Operations



- Let's calculate the **hypotenuse** of a **triangle**:
 - ▷ a = 3
 - ▷ b = 4
 - ▷ c = ?

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Use this space to take notes:

Slide 22

▶ Arithmetic Operations



- ▶ Let's calculate the **are** of a **circle**:

```
a = 3  
b = 4  
c = (a**2 + b**2)**0.5  
  
print(c)
```

5

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Operations with `print()` Function



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Use this space to take notes:

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► Operations with `print()` Function »

- `print()` is the most frequently used function in Python.
- Let's take a closer look at this function through the examples.

```
number = 2020
text = "we have reached"
print(text, number)
```

Use this space to take notes:

Slide 25

► Operations with `print()` Function »

- `print()` is the most frequently used function in Python.
- Let's take a closer look at this function through the examples.

```
number = 2020
text = "we have reached"
print(text, number)
```

```
we have reached 2020
```

Use this space to take notes:

Slide 26	Your Response
	Answer 1: I bought 6 kg. of apple this morning I bought 6 kg. of apple this morning I bought 6 kg. of apple this morning

► Operations with `print()` Function

```
text1 = "I bought"
text2 = "kg. of apple this morning"
amount = 6
text3 = text1 + " " + str(amount) + " " + text2
print(text1, amount, text2)
print("I bought", 6, "kg. of apple this morning")
print("I bought " + "6 " + "kg. of apple this morning")
print(text3)
```

What is the output? Try to
guess in your mind...



Clarusway, write your response!

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► Operations with `print()` Function

```
text1 = "I bought"
text2 = "kg. of apple this morning"
amount = 6
text3 = text1 + " " + str(amount) + " " + text2
print(text1, amount, text2)
print("I bought", 6, "kg. of apple this morning")
print("I bought " + "6 " + "kg. of apple this morning")
print(text3)
```

```
I bought 6 kg. of apple this morning
I bought 6 kg. of apple this morning
I bought 6 kg. of apple this morning
I bought 6 kg. of apple this morning
```

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Slide 28

► Operations with `print()` Function ►

- Let's take a look at the **inside** of `print()` function through the examples.

```
print(value, ..., sep=' ', end='\n')
```

Separation
argument ⇒ **sep**



Default value ⇒ space

End of the line
argument ⇒ **end**



Default value ⇒ newline

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Use this space to take notes:

Slide 29	Your Response
	Answer 1: I bought*6*kg. of apple this morning I bought 6 kg. of apple this morning I bought 6 kg. of apple this morning and came to home

Use this space to take notes:

Slide 30

► Operations with `print()` Function

```
text1 = "I bought"
text2 = "kg. of apple this morning"
amount = 6
print(text1, amount, text2, sep="*")
print("I bought", 6, "kg. of apple this morning", sep="")
print("I bought " + "6 " + text2, end=" ")
print("and came to home")
```

```
I bought*6*kg. of apple this morning
I bought6kg. of apple this morning
I bought 6 kg. of apple this morning and came to home
```

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Slide 31

► Operations with `print()` Function

```
1 x = 5
2 print('value of x : ', x)
3
4 x += 2
5 print('2 more of x : ', x, "\n") # using string expression '\n'.
6                                     # we produce extra line.
7                                     # So that we had empty line.
8
9 y = 10
10 print('value of y : ', y)
11
12 y -= 2
13 print('2 minus y : ', y, "\n")
14
15 z = 6
16 print('value of z : ', z)
17
18 z *= 2
19 print('2 times z : ', z, "\n")
```

What is the output? Use
your **Playground**...

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Slide 32

► Operations with `print()` Function



```
1 value of x : 5
2 2 more of x : 7
3
4 value of y : 10
5 2 minus y : 8
6
7 value of z : 6
8 2 times z : 12
9
```

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Use this space to take notes:

Slide 33



3 ► Escape Sequences

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Use this space to take notes:

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► Escape Sequences



- 🖱️ \ is a special sign used in expressions called **escape sequences**, which behaves according to the character immediately after 🖱️ \. Here are basic escape sequences in Python:

- \n : means new line,
- \t : means tab mark,
- \b : means backspace. It moves the cursor one character to the left.

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► Escape Sequences



- 🖱️ \ is a special sign used in expressions called **escape sequences**, which behaves according to the character immediately after 🖱️ \. Here are basic escape sequences in Python:

- \n : means new line,
- \t : means tab mark,
- \b : means backspace. It moves the cursor one character to the left.

Python ignores any character which comes immediately after \ .

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Slide 36


Your Response

Escape Sequences

► **Let's** take a closer look at the escape sequences through the examples.

```
print('C:\\north pole\\noise_penguins.txt')
print('-----')
print('first', 'second', 'third', sep='\\t')
```

What is the output? Try to guess in your mind...



Clarusway, write your response!

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Escape Sequences

► **Let's** take a closer look at the escape sequences through the examples.

```
print('C:\\north pole\\noise_penguins.txt')
print('-----')
print('first', 'second', 'third', sep='\\t')
```

```
C:\\north pole
oise_penguins.txt
-----
first  second third
```



Use this space to take notes:


Slide 38	Your Response
	<p>Answer 1: we are\\boosting o</p>

Escape Sequences

- ▶ **Let's** take a closer look at the escape sequences through the examples.

```
print('we are', '\\boosting', 'our', '\\brotherhood')
print('it\\'s essential to learn Python\\'s libraries in IT World')
```

What is the output? Try to guess in your mind...

 **CLARUSWAY**
SIMPLY EASY, write your response!

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Escape Sequences

- ▶ **Let's** take a closer look at the escape sequences through the examples.

```
print('we are', '\\boosting', 'our', '\\brotherhood')
print('it\\'s essential to learn Python\\'s libraries in IT World')
```

```
we areboosting ourrotherhood
it's essential to learn Python's libraries in IT World
```

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Use this space to take notes:

Slide 40

► Escape Sequences



► Task

- First, Login to your LMS,
- Then, click [here](https://lms.clarusway.com/mod/lesson/view.php?id=2035&pageid=4237) to complete and submit the task.

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Link(s) on this slide:

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