

# Advanced Features of Functions

**Spoken Tutorial Project**

**<http://spoken-tutorial.org>**

**National Mission on Education through ICT**

**<http://sakshat.ac.in>**

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# Learning Objectives



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- ▶ **Assign default values to arguments, when defining functions**



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- ▶ **Assign default values to arguments, when defining functions**
- ▶ **Define and call functions with keyword arguments**



# Learning Objectives

- ▶ **Define and call functions with arbitrary arguments**



# Learning Objectives

- ▶ Define and call functions with arbitrary arguments
- ▶ Learn some of the built-in functions available in Python standard library



# System Specifications



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## ▶ Ubuntu Linux 16.04



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- ▶ **Ubuntu Linux 16.04**
- ▶ **Python 3.4.3**



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- ▶ **Ubuntu Linux 16.04**
- ▶ **Python 3.4.3**
- ▶ **IPython 5.1.0**



# Pre-requisite

To practise this tutorial, you should know how to



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To practise this tutorial, you should know how to

- ▶ **run basic Python commands on the IPython console**



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- ▶ run basic Python commands on the IPython console
- ▶ **use functions**



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To practise this tutorial, you should know how to

- ▶ run basic Python commands on the IPython console
- ▶ use functions

If not, see the relevant Python tutorials on <http://spoken-tutorial.org>



# Default Arguments



# Default Arguments

- ▶ **Function arguments can have default values in Python**



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- ▶ **When we call a function without a value for an argument, its default value is used if available**



# Default Arguments

- ▶ **Function arguments can have default values in Python**
- ▶ **When we call a function without a value for an argument, its default value is used if available**
- ▶ **Otherwise it will give error**



# Exercise 1

- ▶ Redefine the function **welcome**, by interchanging its arguments
- ▶ Place the **name** argument with its default value of **“World”** before the **greet** argument



# Exercise2

- ▶ Redefine the function `welcome` with a default value of `“Hello”` to the `greet` argument
- ▶ Then, call the function without any arguments



# Keyword Arguments



# Keyword Arguments

- ▶ **No need to remember the order of arguments while calling functions by passing keyword arguments**



# Keyword Arguments

- ▶ No need to remember the order of arguments while calling functions by passing **keyword arguments**
- ▶ **Instead, we can use name of the argument to pass a value to it**



# Arbitrary Arguments



# Arbitrary Arguments

- ▶ We may not always know in advance the number of arguments that will be passed into a function



# Arbitrary Arguments

- ▶ We may not always know in advance the number of arguments that will be passed into a function
- ▶ Use an asterisk(\*) before an argument name to denote arbitrary number of arguments



# Built-in functions

**Python also provides built-in functions,  
some are**



# Built-in functions

Python also provides built-in functions, some are

▶ `abs()`



# Built-in functions

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▶ `abs()`

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# Built-in functions

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# Built-in functions

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- ▶ `abs()`
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- ▶ `dir()`
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<https://docs.python.org/3/library/functions.html>



# Summary

- ▶ **Default arguments**
- ▶ **Keyword arguments**
- ▶ **Arbitrary arguments**



# Evaluation

- 1. All the arguments of a function cannot have default values.**

**True or False?**



# Evaluation

2. The following is a valid function definition.

True or False?

```
def separator(count=40, char, show=False):  
    if show:  
        print char * count  
    return char * count
```



## 3. While calling a function,

- ▶ the arguments should always be in the order in which they are defined
- ▶ only keyword arguments can be in any order, but should be called at the beginning
- ▶ only keyword arguments can be in any order, but should be called at the end



# Solutions

## 1. False



# Solutions

1. **False**
2. **False**



# Solutions

1. **False**
2. **False**
3. **Only keyword arguments can be in any order, but should be called at the end**



# Forum to answer questions

- ▶ **Do you have questions in THIS Spoken Tutorial?**
- ▶ **Choose the minute and second where you have the question.**
- ▶ **Explain your question briefly.**
- ▶ **Someone from the FOSSEE team will answer them. Please visit**

<http://forums.spoken-tutorial.org/>



# Forum to answer questions

- ▶ Questions not related to the Spoken Tutorial?
- ▶ Do you have general / technical questions on the Software?
- ▶ Please visit the FOSSEE Forum  
<http://forums.fossee.in/>
- ▶ Choose the Software and post your question.



# Textbook Companion Project

- ▶ **The FOSSEE team coordinates coding of solved examples of popular books**
- ▶ **We give honorarium and certificate to those who do this**

**For more details, please visit this site:**

<http://tbc-python.fossee.in/>



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- ▶ **Spoken Tutorial Project is a part of the Talk to a Teacher project**
- ▶ **It is supported by the National Mission on Education through ICT, MHRD, Government of India**
- ▶ **More information on this mission is available at:**

<http://spoken-tutorial.org/NMEICT-Intro>



# THANK YOU!

For more information, visit our website  
<http://fossee.in/>

