Getting started with for

Spoken Tutorial Project
http://spoken-tutorial.org
National Mission on Education through ICT

http://sakshat.ac.in

Script: Thirumalesh H S

Narrator: Kiran Kishore

IIT Bombay

23 October 2015

Objectives

At the end of this tutorial, you will be able to,

Objectives

At the end of this tutorial, you will be able to,

- **1. Write blocks of code in Python using indentation.**

Objectives

At the end of this tutorial, you will be able to,

- **1. Write blocks of code in Python using indentation.**
- **Use the for loop**

Objectives

At the end of this tutorial, you will be able to,

- **1. Write blocks of code in Python using indentation.**
- **Use the for loop**
- **Use range() function**

Objectives

At the end of this tutorial, you will be able to,

- **1. Write blocks of code in Python using indentation.**
- **Use the for loop**
- **Use range() function**
- **Write blocks in Python and IPython interpreter**

System Specifications

System Specifications

- **Ubuntu Linux 14.04**

System Specifications

- **Ubuntu Linux 14.04**
- **`Python 2.7.6`**

System Specifications

- **Ubuntu Linux 14.04**
- **`Python 2.7.6`**
- **`IPython 4.0.0`**

Pre-requisite

To practice this tutorial, you should know how to -

Pre-requisite

To practice this tutorial, you should know how to -

- **use lists**

Pre-requisite

To practice this tutorial, you should know how to -

- **use lists**

If not, see the pre-requisite Python tutorials on http://spoken-tutorial.org

Whitespace in Python

- **Whitespace is significant**
- **Blocks are conventionally indented using 4 spaces**

```
Block A
Block A
    Block B
    Block B
Block C
```

for syntax

```
for <loop-variable> in <sequence>:
    <statements>
```

for syntax

```
for <loop-variable> in <sequence>:
    <statements>
```

- Items of sequence are assigned one after the other to the loop-variable.

for syntax

```
for <loop-variable> in <sequence>:
    <statements>
```

- Items of sequence are assigned one after the other to the loop-variable. For each item, the loop body is executed.
- Note that colon after the for statement indicates the starting of loop body.

Exercise 1

- **Write a `for` loop which iterates through a list of numbers and find the square root of each number.**

Exercise 1

- **Write a `for` loop which iterates through a list of numbers and find the square root of each number.**
- **The numbers are:**

Exercise 1

- **Write a `for` loop which iterates through a list of numbers and find the square root of each number.**
- **The numbers are:**
  `4, 9, 16, 25, 36`

Solution 1

```
numbers = [4, 9, 16, 25, 36]

for num in numbers:
    print "sqrt of", num, "is", num**0.5
print "This is outside for-loop"
```

Solution 1

```
numbers = [4, 9, 16, 25, 36]

for num in numbers:
    print "sqrt of", num, "is", num**0.5
print "This is outside for-loop"
```

#Save the file as sqrt_num_list.py

Exercise 2

Repeat Exercise 1, by actually typing each line in the IPython interpreter

`range()` function

- built in function in Python
- generates a list of integers
  - Syntax :

    `range([start,] stop[, step])`
  - Example :
    - `range(1, 20)` - generates integers from 1 to 19
    - `range(20)` - generates integers from 0 to 19

Exercise 3

Find out the cube of all the numbers from 1 to 10.

Exercise 3

Find out the cube of all the numbers from 1 to 10.
Execute this in the Python interpreter

Exercise 4

Print all the odd numbers from 1 to 50.

Summary

In this tutorial, we learnt to,

Summary

In this tutorial, we learnt to,

- **Create blocks in python using `for`**

Summary

In this tutorial, we learnt to,

- **Create blocks in python using `for`**
- **Indent the blocks of code**

Summary

In this tutorial, we learnt to,

- Create blocks in python using `for`
- Indent the blocks of code
- Iterate over a list using `for` loop

Summary

In this tutorial, we learnt to,

- Create blocks in python using `for`
- Indent the blocks of code
- Iterate over a list using `for` loop
- Use the `range()` function

Evaluation

1. **Indentation is not mandatory in Python**
   - **True**
   - **False**

Evaluation

1. **Indentation is not mandatory in Python**
   - **True**
   - **False**

2. **Write a `for` loop to print the product of all natural numbers from 1 to 20**

Evaluation

1. **Indentation is not mandatory in Python**
   - **True**
   - **False**
2. **Write a `for` loop to print the product of all natural numbers from 1 to 20**
3. **What will be the output of : `range(1,5)`**

Solutions

1. **False**

2. ```
   y = 1
   for x in range(1,21):
     y *= x
   print y
   ```

3. `[1,2,3,4]`


   ```

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/

Acknowledgements

- 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/