Sets in Python

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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▶ **Create sets from lists**

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▶ **Create** sets **from** lists
▶ **Perform** union, intersection **and** symmetric difference **operations**
▶ **Check if a set is a subset of other**
▶ **Understand various similarities with** lists

System Specifications

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▶ **Python 3.4.3**

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

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To practise this tutorial, you should know how to

- ▶ run basic **Python** commands on the **ipython** console
- ▶ use **lists**

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

Overview of Sets

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Overview of Sets

- **Sets** are unordered collections of unique elements
- **The set itself is mutable**
- **We can add or remove items from it**

Given a list of marks,

marks = [20, 23, 22, 23, 20, 21, 23]

List all the duplicate marks

Summary

- ▶ Make **sets** from **lists** or by using curly braces
- ▶ Perform **union, intersection** and **symmetric difference** operations

Summary

- Check if a set is a subset of other using the $<=$ operator
- Understand the various similarities with lists like length and containership

Evaluation

1. **If a = [1, 1, 2, 3, 3, 5, 5, 8],**

   what is set(a)?

   ▶ {1, 1, 2, 3, 3, 5, 5, 8}
   ▶ {1, 2, 3, 5, 8}
   ▶ {1, 2, 3, 3, 5, 5}
   ▶ **Error**

2. **Given,**

   odd = set([1, 3, 5, 7, 9])
   squares = set([1, 4, 9, 16])

   How do you find the symmetric difference of these two sets?

3. **If a is a set, how do you check if a variable b exists in a?**

1. $\{1, 2, 3, 5, 8\}$

2. `odd ^ squares`

3. `b in a`

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▶ **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

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▶ **Do you have general / technical questions on the Software?**

▶ **Please visit the FOSSEE Forum**

$$\text{http://forums.fossee.in/}$$

▶ **Choose the Software and post your question.**

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- ▶ **We give honorarium and certificate to those who do this**

For more details, please visit this site:

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

Acknowledgements

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▶ **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/