Getting started with arrays

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

http://sakshat.ac.in

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- **Create arrays from lists.**
- **Perform basic array operations.**
- **Create identity matrix.**
- **Use function `zeros()`**

System Specifications

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- **Ubuntu Linux 14.04**

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- **`Python 2.7.6`**

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- **`IPython 4.0.0`**

Pre-requisites

To practice this tutorial,you should know how to

- **use Lists**

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

Overview of Arrays

- **Arrays are homogeneous data structures.**

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- **Arrays are homogeneous data structures.**
- **all elements in it have the same data type**

.shape of an array

- **To find the shape of an array we can use the method .shape**

.shape of an array

- To find the shape of an array we can use the method .shape
- It returns a tuple of the shape of an array

Exercise 1

Find out the shape of the other arrays i.e a1, ar which we have created.

`identity()` method

- **`identity(n)` : Creates an identity matrix, a square matrix of order (n, n) with diagonal elements 1 and others 0**

zeros() method

- **`zeros((m, n))` : Creates an `m X n` matrix with all elements as 0.**

Learning exercise

Find out about the functions

- `zeros_like()`
- `ones()`
- `ones_like()`

Summary

In this tutorial, we have learnt to,

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- **Create an array using the `array()` function.**

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In this tutorial, we have learnt to,

- **Create an array using the `array()` function.**
- **Perform some basic operations on arrays like addition, multiplication.**

Summary

- **Use functions like**
  - **.shape**
  - **arrange()**
  - **.reshape**
  - **identity()**
  - **zeros()**

Evaluation

1. **x = array([1, 2, 3], [5, 6, 7]) is a valid statement**
   - **True**
   - **False**

Solutions

1. **False**

   x = array([[1, 2, 3], [5, 6, 7]])

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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- 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/