

# Plotting charts

**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 pie charts



# Learning Objectives

- ▶ Create pie charts
- ▶ Create bar charts



# Learning Objectives

- ▶ Create pie charts
- ▶ Create bar charts
- ▶ Find more information on matplotlib



# System Specifications



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## ► Ubuntu Linux 14.04



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- ▶ **Ubuntu Linux 14.04**
- ▶ **Python 3.4.3**





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- ▶ **Ubuntu Linux 14.04**
- ▶ **Python 3.4.3**
- ▶ **IPython 5.1.0**



# Pre-requisites



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- ▶ Run basic Python commands on the ipython console



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- ▶ Load data from files and plot data



# Pre-requisites

- ▶ Run basic Python commands on the ipython console
- ▶ Load data from files and plot data
- ▶ If not, see the relevent Python tutorials on <http://spoken-tutorial.org>



# Pie chart

**A pie chart is a circular chart divided into sectors, to illustrate numerical proportion**



# pie() function

**Syntax :**

**pie(values, labels = labels)**



# pie() function

**Syntax :**

**pie(values, labels = labels)**

- ▶ **values** - the data to be plotted





# pie() function

**Syntax :**

**pie(values, labels = labels)**

- ▶ values - the data to be plotted
- ▶ labels - the label for each wedge in the pie chart



# Exercise 1: Pie chart

- ▶ Plot a pie chart representing the profit percentage of company A
- ▶ Use the data from the file **company-a-data.txt**



# Exercise 2: Pie chart

**Plot a pie chart with the same data with colors for each wedges**

- ▶ white, red, black, magenta,
- ▶ yellow, blue, green, cyan,
- ▶ yellow, magenta and blue



# Exercise 2: Pie chart

Plot a pie chart with the same data with colors for each wedges

- ▶ white, red, black, magenta,
- ▶ yellow, blue, green, cyan,
- ▶ yellow, magenta and blue

Hint: In your ipython interpreter, try typing **pie?**



# Bar chart

**A bar chart is a chart**



# Bar chart

A bar chart is a chart

- ▶ with rectangular bars



# Bar chart

A bar chart is a chart

- ▶ with rectangular bars
- ▶ with lengths proportional to the values that they represent



# bar() function

**Syntax :**

**bar(x, y)**





# bar() function

**Syntax :**

**bar(x, y)**

- ▶ x - a sequence of data



# bar() function

**Syntax :**

**bar(x, y)**

- ▶ x - a sequence of data
- ▶ y - a sequence of data, the same length of x



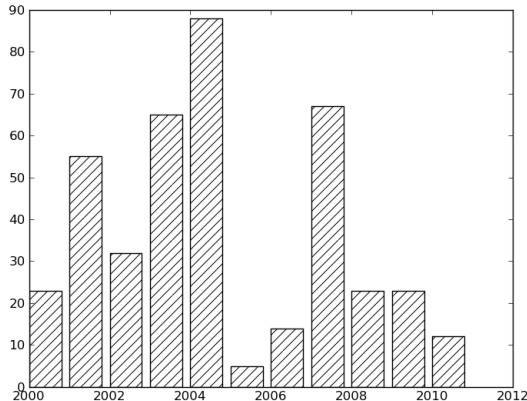
# Exercise 3: Bar chart

- ▶ Plot a bar chart representing the profit percentage of company A
- ▶ Use the data from the file **company-a-data.txt** available in the code file link of this tutorial



# Exercise 4: Bar chart

**Plot a bar chart as shown in the image**



# Exercise 4: Bar chart

- ▶ **Hint: Bar chart is not filled and which is hatched with 45° slanting lines**
- ▶ **The data for the chart may be obtained from the file `'company-a-data.txt'`**



# Exercise 4

- ▶ **company-a-data.txt** file is available in the code file link of this tutorial
- ▶ Please download and use it

Hint: In your ipython interpreter, try typing **bar?**



# Getting help on matplotlib



# Getting help on matplotlib

- ▶ **Help about matplotlib can be obtained from**





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  - ▶ `matplotlib.sourceforge.net/contents.html`



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# Summary

In this tutorial, we learnt to -

- ▶ Plot a pie chart using `pie()` function
- ▶ Plot a bar chart using `bar()` function
- ▶ Access the `matplotlib` online help



# Evaluation

## 1. What statement can be issued to generate a bar chart with vertical line hatching.

- ▶ `bar(x, y, color='w', hatch='/')`
- ▶ `bar(x, y, fill=False, hatch='//')`
- ▶ `bar(x, y, fill=False, hatch='|')`
- ▶ `bar(x, y, color='w', hatch='\\')`



# Solutions

1. `bar(x, y, fill=False, hatch='|')`



# 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/>

