Introduction to ggplot2

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

http://sakshat.ac.in/

Script: Varshit Dubey

Narration: Sudhakar Kumar

IIT Bombay

25 April 2019

We will learn:

Learning Objectives

We will learn:

- ▶ **Need for data visualization**

Learning Objectives

We will learn:

- ▶ **Need for data visualization**
- ▶ **Basic plot function in R**

Learning Objectives

We will learn:

- ▶ **Need for data visualization**
- ▶ **Basic plot function in R**
- ▶ **ggplot2 package**

Pre-requisites

Pre-requisites

- **Basics of Statistics**

Pre-requisites

- **Basics of Statistics**
- **Data frames**

Pre-requisites

- **Basics of Statistics**
- **Data frames**

Please locate the relevant tutorials on https://spoken-tutorial.org/

System Specifications

System Specifications

- **Ubuntu Linux OS v 16.04**

System Specifications

- **Ubuntu Linux OS v 16.04**
- **R v 3.4.4**

System Specifications

- **Ubuntu Linux OS v 16.04**
- **R v 3.4.4**
- **RStudio v 1.1.463**

System Specifications

- Ubuntu Linux OS v 16.04
- R v 3.4.4
- RStudio v 1.1.463

R version 3.2.0 or higher

Download Files

We will use:

Download Files

We will use:

- **A data frame moviesData.csv**

We will use:

- **A data frame moviesData.csv**
- **A script file ggPlots.R**

Download Files

We will use:

- ▸ A data frame **moviesData.csv**
- ▸ A script file **ggPlots.R**

Download these files from the **Code files** link of this tutorial

Need for Data Visualization

- **Visualization is an important tool for insight generation**

Need for Data Visualization

- **Visualization is an important tool for insight generation**

- **It is used to understand the data structure, identify outliers and find patterns**

Data visualization in R

Data visualization in R

There are 2 methods of data visualization in R:

There are 2 methods of data visualization in R:

- ▶ **Basic graphics**

Data visualization in R

There are 2 methods of data visualization in R:

- ▶ Basic graphics
- ▶ Grammar of graphics (popularly known as **ggplot2**)

Introduction to ggplot2 package

Introduction to ggplot2 package

- **ggplot2** package was created by Hadley Wickham in 2005

Introduction to ggplot2 package

- **ggplot2** package was created by Hadley Wickham in 2005
- **It offers a powerful graphics language for creating elegant and complex plots**

Summary

We have learnt:

- ▶ **Need for data visualization**
- ▶ **Basic plot function in R**
- ▶ **ggplot2 package**

1. **Consider the built-in data set** *mtcars*. **Find the numerical variables in this data set**

2. **Make a scatter plot from the objects named** *mpg* **and** *wt* **in this data set**

3. **Save the plot in** *.jpeg* **format**

About the Spoken Tutorial Project

- Watch the video available at
  http://spoken-tutorial.org
  /What_is_a_Spoken_Tutorial

- It summarises the Spoken Tutorial project

- If you do not have good bandwidth, you can download and watch it

Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ **Conducts workshops using spoken tutorials**

- ▶ **Gives certificates to those who pass an online test**

- ▶ **For more details, please write to contact@spoken-tutorial.org**

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 certificates to those who do this**

For more details, please visit these sites:

https://r.fossee.in/
https://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

- **The script for this tutorial was contributed by Varshit Dubey (CoE Pune)**
- **The video has been created by Sudhakar Kumar, IIT Bombay**