

# Creating Matrices using Data Frames

**Spoken Tutorial Project**

**<http://spoken-tutorial.org>**

**National Mission on Education through ICT**

**<http://sakshat.ac.in>**

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**IIT Bombay**

**15 November 2018**



# Learning Objectives

**We will learn how to:**



# Learning Objectives

## We will learn how to:

- **Convert a data frame into a matrix**



# Learning Objectives

**We will learn how to:**

- ▶ **Convert a data frame into a matrix**
- ▶ **Create a matrix in R**



# Learning Objectives

**We will learn how to:**

- ▶ **Convert a data frame into a matrix**
- ▶ **Create a matrix in R**
- ▶ **Perform basic operations on matrices**



# Pre-requisites



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## ► Data frames and Vectors in R



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- ▶ **Data frames and Vectors in R**
- ▶ **Basics of Matrices**





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- ▶ **Basics of Matrices**
- ▶ **R script in RStudio**
- ▶ **How to set working directory in RStudio**



# Pre-requisites

- ▶ Data frames and Vectors in R
- ▶ Basics of Matrices
- ▶ R script in RStudio
- ▶ How to set working directory in RStudio

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



# System Specifications



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- ## ► Ubuntu Linux OS v 16.04



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



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- ▶ **RStudio v 1.1.456**

**R version 3.2.0 or higher**





# Download Files



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- ▶ We will use the data frame **CaptaincyData.csv** and a script file **myMatrix.R**



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- ▶ We will use the data frame **CaptaincyData.csv** and a script file **myMatrix.R**
- ▶ Please download these files from the **Code files** link of this tutorial



# Data in Matrix Format



# Data in Matrix Format

- Calculate the inverse of a matrix



# Data in Matrix Format

- ▶ Calculate the inverse of a matrix
- ▶ Perform matrix operations



# Summary

**We have learnt how to:**

- ▶ **Convert a data frame into a matrix**
- ▶ **Create a matrix in R**
- ▶ **Perform basic operations on matrices**



# Assignment

1. Consider 2 vectors  $c(9,10,11,12)$  and  $c(13,14,15,16)$
2. Create a 4 by 2 matrix from these two vectors





# About the Spoken Tutorial Project

- ▶ Watch the video available at [http://spoken-tutorial.org/What\\_is\\_a\\_Spoken\\_Tutorial](http://spoken-tutorial.org/What_is_a_Spoken_Tutorial)
- ▶ It summarises the Spoken Tutorial project

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- ▶ 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](mailto: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 Shaik Sameer (FOSSEE Fellow 2018)
- ▶ The video has been created by Sudhakar Kumar, IIT Bombay

