

Lists and its Operations

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

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

Script: Shaik Sameer

Narration: Sudhakar Kumar

IIT Bombay

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Learning Objectives

We will learn how to:



Learning Objectives

We will learn how to:

- ▶ Create a list in R



Learning Objectives

We will learn how to:

- ▶ **Create a list in R**
- ▶ **Access the elements of a list**



Learning Objectives

We will learn how to:

- ▶ **Create a list in R**
- ▶ **Access the elements of a list**
- ▶ **Perform indexing on lists**



Learning Objectives

We will learn how to:

- ▶ Create a list in R**
- ▶ Access the elements of a list**
- ▶ Perform indexing on lists**
- ▶ Combine two lists**



Pre-requisites



Pre-requisites

- ▶ **Data frames in R**



Pre-requisites

- ▶ Data frames in R
- ▶ Matrices and vectors in R



Pre-requisites

- ▶ Data frames in R
- ▶ Matrices and vectors in R

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



System Specifications



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- ▶ **Ubuntu Linux OS v 16.04**



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- ▶ **R v 3.4.4**



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- ▶ **RStudio v 1.1.456**



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- ▶ **Ubuntu Linux OS v 16.04**
- ▶ **R v 3.4.4**
- ▶ **RStudio v 1.1.456**

R version 3.2.0 or higher



Download Files

We will use:



Download Files

We will use:

- ▶ A data frame **CaptaincyData.csv**



Download Files

We will use:

- ▶ A data frame **CaptaincyData.csv**
- ▶ A script file **myList.R**



Download Files

We will use:

- ▶ A data frame **CaptaincyData.csv**
- ▶ A script file **myList.R**

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



Lists in R

List is an R object having components of mixed data types like



Lists in R

List is an R object having components of mixed data types like

- ▶ Strings



Lists in R

List is an R object having components of mixed data types like

- ▶ Strings
- ▶ Numbers



Lists in R

List is an R object having components of mixed data types like

- ▶ **Strings**
- ▶ **Numbers**
- ▶ **Vectors**



Lists in R

List is an R object having components of mixed data types like

- ▶ **Strings**
- ▶ **Numbers**
- ▶ **Vectors**
- ▶ **Some other list inside it**



Lists in R



Lists in R

- ▶ **A vector having all elements of the same type is called atomic vector**



Lists in R

- ▶ A vector having all elements of the same type is called atomic vector
- ▶ A vector having elements of different type is called list



Summary

We have learnt how to:

- ▶ **Create a list in R**
- ▶ **Access the elements of a list**
- ▶ **Perform indexing on lists**
- ▶ **Combine two lists**



Assignment

1. Create a numeric vector `c(1:5)` and a 5 by 3 matrix with elements from 1 to 15



Assignment

1. Create a numeric vector `c(1:5)` and a 5 by 3 matrix with elements from 1 to 15
2. Create a named list with vector, matrix and `iris` data set



Assignment

3. Retrieve `iris` data set from the list using dollar operator and indexing method



Assignment

3. Retrieve `iris` data set from the list using dollar operator and indexing method
4. State the difference between the results obtained by using dollar operator and indexing method of accessing `iris`



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



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- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
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- ▶ Explain your question briefly
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<http://forums.spoken-tutorial.org/>



Forum to answer questions

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<http://forums.fossee.in/>
- ▶ Choose the Software and post your question



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

For more details, please visit these sites:

<https://r.fossee.in/>
<https://fossee.in/>



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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

- ▶ **The script for this tutorial was contributed by Shaik Sameer (FOSSEE Fellow 2018)**
- ▶ **The video has been created by Sudhakar Kumar, IIT Bombay**

