

# Introduction to basics of R

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Talk to a Teacher Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

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

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# Learning Objectives

- ▶ **Get a feel for R and RStudio**
- ▶ **How R can be used as a calculator**
- ▶ **Built in functions like sin, log**
- ▶ **Introduction to vector operations**
- ▶ **Introduction to plotting**
- ▶ **Taking help in RStudio**
- ▶ **Getting more info. on R, RStudio**



# Prerequisites

- ▶ **Elementary maths: log, sine, plotting**
- ▶ **Please locate this tutorial on our web site: <http://spoken-tutorial.org>**
- ▶ **Useful supplementary available there: code files, script, relevant tutorials, etc.**
- ▶ **No programming background is required, however, for this tutorial**



# System Requirements

- ▶ **R: 3.0.0 (2013-04-03)**
- ▶ **RStudio: 0.97.336**
- ▶ **R and RStudio work on web browsers**
- ▶ **Hence on any system, including Aakash**



# System Requirements - Ctd.

- ▶ **For this tutorial, I am using Mac OS X 10.7.4**
- ▶ **Similar in Linux and Windows as well**



# A Quick Introduction to R

- ▶ **R is an outstanding software for general computations**
- ▶ **It is especially suitable for statistical computing**
- ▶ **It is an alternative to SPSS**
- ▶ **It is a free and open source software**
- ▶ **It can be downloaded from**  
`http://cran.r-project.org/`



# A Quick Introduction to RStudio

- ▶ **RStudio is a friendly front-end to R**
- ▶ **It is a free and open source software**
- ▶ **It can be downloaded from**  
<http://www.rstudio.com/>
- ▶ **Two minute video by the RStudio team:**  
<http://www.rstudio.com/ide/>
- ▶ **RStudio also runs on a web browser**



# R and RStudio on a Web Server, accessed from Aakash

 rstudio.aakashlabs.org



File Edit Code View Plots Session Project Build Tools Help

kannan | Sign Out

Go to file/function

Project: (None)

Source

Workspace History

Console

Files Plots Packages Help

Zoom Export Clear All

```
R version 3.0.1 (2013-05-16) -- "Good Sport"
Copyright (C) 2013 The R Foundation for Statistical Computing
Platform: x86_64-redhat-linux-gnu (64-bit)
```

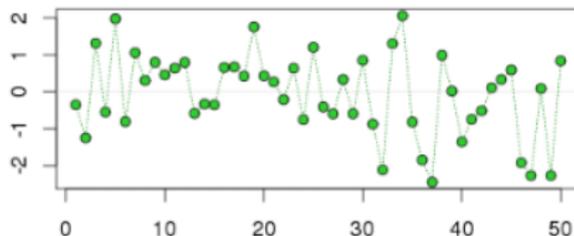
```
R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.
```

```
Natural language support but running in an English locale
```

```
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.
```

```
Type 'demo()' for some demos, 'help()' for on-line
```

## Simple Use of Color In a Plot



*Just a Whisper of a Label*

# Practice Session on R, using RStudio



# Low Cost Books on R from Shroff Publishers

- ▶ **Learning RStudio for R Statistical Computing by Mark P. J. van der Loo, Edwin de Jonge, June 2013, Rs. 225**
- ▶ **R Graphics Cookbook by Winston Chang, Dec. 2012, Rs. 725**
- ▶ **R in a Nutshell by Joseph Alder, 2nd Edition, Oct. 2012, Rs. 900**



# Summary

- ▶ **A few elementary operations**
- ▶ **Introduction to plotting**
- ▶ **Introduction to help**
- ▶ **URLs and books on R and RStudio**



# Assignment

- ▶ Find answers to  $\log_2(2^5)$  and  $\log(\exp(1)*\exp(1))$  - explain
- ▶ Explore the Help tab in RStudio: Change the labels, title, etc.
- ▶ Hint: try `plot(x,y,xlab="x-axis")`
- ▶ Copy paste a few examples provided in Help and see what they do



# 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
- ▶ If you do not have good bandwidth, you may download and watch it



# Spoken Tutorial Workshops

## The Spoken Tutorial Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates
- ▶ For more details, please write to [contact@spoken-tutorial.org](mailto:contact@spoken-tutorial.org)



# Acknowledgements

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- ▶ More information on this Mission is available at

<http://spoken-tutorial.org/NMEICT-Intro>



Thanks from  
<http://spoken-tutorial.org>

