

# Programming 'R' { [For Beginners Workshop]

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# 01 {

## Installing R

[To Download R](#)

[To Download R Studio](#)

Note: to download R studio you must  
download R first.

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02 {

Syntax in R

}

03 {

Graphs in R

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# 04 {

## Packages in R

# }

# Packages in R {



## ggplot2

ggplot2 is a system  
for declaratively  
creating graphics



## dplyr

dplyr is a grammar  
of data manipulation



## tidyr

The goal of tidyr is  
to help you  
create **tidy data**



## reticulate

**reticulate** package  
provides a comprehensive  
set of tools for  
interoperability between  
Python and R

}

# Packages in R {



## keras

Keras is a high-level neural networks API developed with a focus on enabling fast experimentation



## Sparklyr

The sparklyr package provides an R interface to Apache Spark, a fast and general engine for processing Big Data

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# Application of R {

## Banking

R is also used in conjunction with *hadoop* to facilitate the analysis of customer quality, customer segmentation, and retention

## Finance

With the help of R, financial institutions are able to perform downside risk measurement, adjust risk performance and utilize visualizations

## E-Commerce

E-commerce companies use R for analyzing cross-selling products to their customers

## Social Media

R is used for social media analytics, for segmenting potential customers and targeting them for selling your products

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# Application of R {

## Healthcare

R is most widely used for performing pre-clinical trials and analyzing the drug-safety data

## Manufacturing

Manufacturing companies like Ford use R to analyze customer sentiment

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# Application of R {

## Banking

- ❖ Banks make heavy usage of the Mortgage Haircut Model that allows them to take over the property in case of loan defaults
- ❖ Mortgage Haircut Modelling involves sales price distribution, the volatility of the sales price and the calculation of expected shortfall
- ❖ For these purposes, R is often used alongside proprietary tools like SAS
- ❖ Bank of America makes use of R for financial reporting
- ❖ With the help of R, the data scientists at BOA are able to analyze financial losses and make use of R's visualization tools.

# Application of R {

## Finance

- ❖ Data Science is most widely used in the financial industry
- ❖ R is the most popular tool for this role
- ❖ This is because R provides an advanced statistical suite that is able to carry out all the necessary financial tasks
- ❖ Finance industries are also leveraging the time-series statistical processes of R, to model the movement of their stock-market and predict the prices of shares
- ❖ R also provides facilities for financial data mining through its packages like *quantmod*, *pdfetch*, *TFX*, *pwt*, etc

# Application of R {

## Social Media

- ❖ Social Media is also a challenging field for Data Science because the data prevalent on social media websites is mostly unstructured in nature
- ❖ Mining user sentiment is another popular category in social media analytics
- ❖ With the help of R, companies are able to model statistical tools that analyze user sentiments, allowing them to improve their experiences
- ❖ SocialMediaMineR is a popular R package that can take multiple URLs and churn the popularity of their reach on social media
- ❖ Companies use R to analyze the social media market and generate leads for the user.

# Application of R {

## Healthcare

- ❖ Genetics, Bioinformatics, Drug Discovery, Epidemiology are some of the fields in healthcare that make heavy usage of R
- ❖ With the help of R, these companies are able to crunch data and process information, providing an essential backdrop for further analysis and data processing
- ❖ R is also popular for its *Bioconductor package* that provides various functionalities for analyzing the genomic data
- ❖ R is also used for statistical modeling in the field of epidemiology, where data scientists analyze and predict the spread of diseases.

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# Application of R {

## Manufacturing

- ❖ Using R helps them optimize their product according to trending consumer interests and also to match their production volume to varying market demand
- ❖ They also use R to minimize their production costs and maximize profits.

}

```
1 Thanks; {
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5 Have a great day!  
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14 }
```

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