

```
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14
```

# Programming ‘R’ { [For Beginners Workshop]}

Brought to you by MCSS

```
}
```

# 1 Table Of ‘Contents’ { 2

3           01   Installing R  
4

5           02   Syntax in R  
6

7           03   Graphs in R  
8

9           04   Packages in R  
10

11           05   Applications of R  
12

13           }  
14

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14

01 {

# Installing R

[To Download R](#)

[To Download R Studio](#)

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

}

```
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14
```

02 {

Syntax in R

}

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14

03 {

## Graphs in R

}

```
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14
```

04 {

## Packages in R

}

# Packages in R {



## ggplot2

ggplot2 is a system  
for declaratively  
creating graphics



## dplyr

dplyr is a grammar  
of data manipulation



## tidyverse

The goal of tidyverse 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 {

1

2

3

4

5

6

7

8

9

10

11

12

13

14 }



## 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

# Application of R {

1            Banking

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

5            Finance

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

9            E-  
10          Commerce

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

13          Social  
14          Media

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

18          }

# 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

}

# 1 Application of R { 2

## 3     |— Banking 4

- 5       ❖ Banks make heavy usage of the Mortgage Haircut Model that  
6           allows them to take over the property in case of loan  
7           defaults
- 8       ❖ Mortgage Haircut Modelling involves sales price  
9           distribution, the volatility of the sales price and the  
10           calculation of expected shortfall
- 11       ❖ For these purposes, R is often used alongside proprietary  
12           tools like SAS
- 13       ❖ Bank of America makes use of R for financial reporting
- 14       ❖ 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.

{}

# 1 Application of R {

2

3

## 4 Manufacturing

5

6

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

12

13

14 }

1 Thanks; {  
2  
3  
4

5 Have a great day!  
6  
7  
8  
9

10 CREDITS: This presentation template was  
11 created by **Slidesgo**, including icons by  
12 **Flaticon**, and infographics & images by  
13 **Freepik**

14 }