

# Index

<b>Chapter 1 : Business Analytics Basics</b>	<b>1-1 to 1-26</b>
1.1 Definition of Analytics .....	1-2
1.2 Evolution of Analytics .....	1-2
1.3 Need of Analytics.....	1-4
1.4 Business Analytics Vs Business Analysis .....	1-5
1.5 Business Intelligence Vs Data Science .....	1-7
1.5.1 Business Intelligence.....	1-7
1.5.2 What is Data Science ? .....	1-9
1.6 Data Analyst Vs Business Analyst .....	1-10
1.6.1 Data Analyst .....	1-10
1.6.2 Business analysts.....	1-11
1.7 Types of Analytics .....	1-11
1.7.1 Descriptive Analytics .....	1-12
1.7.2 Diagnostic Analytics .....	1-12
1.7.3 Predictive Analytics .....	1-13
1.7.4 Prescriptive Analytics .....	1-14
1.8 Tools for Analytics .....	1-14
1.9 Concept of Insights.....	1-17
1.10 Importance of Data in Business Analytics .....	1-19
1.11 Differences Between Data, Information and Knowledge.....	1-20
1.12 Various Stages of an Organization in Terms of data Maturity.....	1-22
1.13 Options for Organizations in the Absence of Good Quality Data .....	1-23
<b>Chapter 2 : Analytical Decision Making</b>	<b>2-1 to 2-19</b>
2.1 Analytical Decision-Making Process .....	2-2
2.2 Characteristics of the Analytical Decision-Making Process .....	2-3
2.3 Breaking Down a Business Problem into Key Questions that can be Answered Through Analytics.....	2-4
2.4 Characteristics of a Good Question .....	2-4
2.5 Skills of a Good Business Analyst.....	2-6
2.6 Overview of Business Analytics Applications .....	2-8



2.6.1	Marketing Analytics .....	2-8
2.6.2	HR Analytics .....	2-9
2.6.3	Supply Chain Analytics.....	2-10
2.6.4	Retail Industry Sales Analytics .....	2-11
2.6.5	Web and Social Media Analytics .....	2-12
2.6.6	Healthcare Analytics.....	2-14
2.6.7	Energy Analytics.....	2-15
2.6.8	Transportation Analytics.....	2-16
2.6.9	Lending Analytics .....	2-16
2.6.10	Sports Analytics.....	2-18
2.7	Future of Business Analytics .....	2-19

---

**Chapter 3 : Fundamentals of R****3-1 to 3-46**

3.1	R Environment.....	3-2
3.2	Downloading and Installing R.....	2-3
3.2.1	Install R.....	2-3
3.2.2	Install R Studio on Windows.....	2-7
3.3	User Interface of R Studio .....	2-10
3.4	Using Command Line in R .....	2-10
3.5	Getting Help.....	2-11
3.5.1	Getting help on a Specific Function.....	2-11
3.5.2	General Help .....	2-12
3.6	Writing First Code in R .....	2-13
3.7	File Operations in R.....	2-14
3.8	Importing Data from External Files.....	2-17
3.8.1	Read and Write Text file.....	2-17
3.8.2	Read and write CSV File .....	2-19
3.8.3	Reading and Writing from Spreadsheet or Excel File .....	2-21
3.8.4	Import Data from other Statistical Software.....	2-25
3.9	Connect to RDBMS from R using ODBC .....	2-26
3.10	Exploration and transformation activities.....	2-36
3.11	Basics of Web Scraping .....	2-43

**Chapter 4 : Data types & Data Structures in R 4-1 to 4-68**

4.1	R language Tokens .....	4-2
4.2	Program Structure in R.....	4-7
4.2.1	Flow Control .....	4-7
4.3	Debugging tools.....	4-18
4.4	Introduction to Data Structure in R .....	4-25
4.4.1	Vectors .....	4-25
4.4.2	Lists .....	4-29
4.4.3	Scalars.....	4-35
4.4.4	Data Frames.....	4-35
4.4.5	Matrices .....	4-41
4.4.6	Arrays .....	4-49
4.4.7	Factors.....	4-52
4.5	Concatenation of Data.....	4-54
4.6	apply, lapply,sapply, tapply functions .....	4-55
4.7	Subsetting methods in R .....	4-59
4.8	Functions to summarize data: .....	4-59
4.9	SQL join in R. ....	4-63
4.10	Use of Data Structures in Different Conditions and Advantage of Using a Particular Approach .....	4-68

**Chapter 5 : Association Analysis 5-1 to 5-28**

5.1	Concept of Data Visualization .....	5-2
5.2	Popular Data Visualization Tools .....	5-2
5.3	Exploratory Data Analysis(EDA) .....	5-4
5.4	Data Cleaning, Data Inspection.....	5-4
5.5	Uses of the functions like grep(), grepl(), sub(), summarize(), llist() .....	5-5
5.6	Using graphical functions in R for data visualization.....	5-8
5.7	Plotting with base graphics.....	5-17
5.8	Plotting with Lattice graphics.....	5-18
5.9	Customizing Graphical Parametersto improvise plots .....	5-20
5.10	Understanding GUIs like Deducer and R Commander .....	5-23
5.11	Introduction to Spatial Analysis .....	5-25