

Vision IT Technologies Business Analyst Course Content

Introduction to business analytics

What is analytics and why is it so important?
Applications of analytics
Different kinds of analytics
Various analytics tools
Analytics project methodology
Case study

Fundamentals of R

Installation of R & R Studio
Getting started with R
Basic and Advanced Data types in R
Variable operators in R
Working with R data frames
Reading and writing data files to R
R functions and loops
Special utility functions
Merging and sorting data
Practice assignment

Univariate statistics in R

Summarizing data, measures of central tendency
Measures of data variability & distributions
Using R language to summarize data
Practice assignment

Data visualization in R

Need for data visualization
Components of data visualization
Utility and limitations
Introduction to grammar of graphics
Using the ggplot2 package in R to create visualizations
Practice assignment

Hypothesis testing and ANOVA in R

Introducing statistical inference
Estimators and confidence intervals

Central Limit theorem
Parametric and non-parametric statistical tests
Analysis of variance (ANOVA)
Case study

Data preparation using R

Needs & methods of data preparation
Handling missing values
Outlier treatment
Transforming variables
Derived variables
Binning data
Modifying data with Base R
Data processing with dplyr package
Using SQL in R
Practice assignment

Predictive analytics in R

1. Correlation and Linear regression

Correlation
Simple linear regression
Multiple linear regression
Model diagnostics and validation
Case study

2. Logistic regression

Moving from linear to logistic regression
Model assumptions and Odds ratio
Model assessment and gains table
ROC curve and KS statistic
Case study

3. Segmentation for marketing analytics

Need for segmentation
Criterion of segmentation
Types of distances
Clustering algorithms
Hierarchical clustering
K-means clustering

Deciding number of clusters

Case study

4. Time series forecasting

What are time-series?

Need for forecasting

Trends, seasons, cycles

Exponential smoothing-Holt Winters method

ARIMA

Case Study

5. Decision Trees

What are decision trees?

Entropy

Gini impurity index

Decision trees algorithms

ID3

C4.5

CART

CHAID

Regression trees