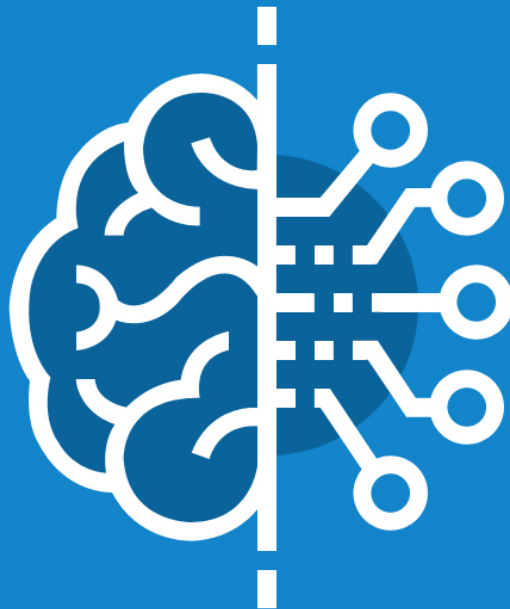


R Programming, Python, Core Analytics, Predictive
Modelling, Data Science & Machine Learning

Classroom & Live Online Training
(Weekdays & Weekends)

96 HOURS
Practical Learning

DexLab Certified



DATA SCIENCE & MACHINE LEARNING CERTIFICATION

Training Module

Gurgaon (Head Office)

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Python

❖ Introduction

- Python 2 vs Python 3
- Installation Notes
- Quick Note on Jupyter Notebook
- Python Installation --- Windows
- IDE Selection
- Jupyter (iPython) Notebooks
- Git and Github Overview (Optional)

❖ Basic Command

- Numbers
- Strings
- Print Formatting
- Lists
- Dictionaries
- Tuples
- Files
- Sets and Booleans
- Resources for More Basic Practice

❖ Condition, Expression and Loop

- Introduction to Python Statements
- if, elif, and else Statements
- for Loops
- while Loops
- range()
- List Comprehensions
- Errors and Exceptions

- Exception Handling: try, except, finally
- Errors and Exceptions Homework
- Errors and Exceptions – Solutions

❖ **Function and Importing & Exporting**

- Introduction to functional programming
- Function recipe
- Function parameters and reuse
- Recursive functions
- Creating modules
- Lamda
- Import & Export
- Text file
- CSV
- Excel
- JSON
- HTML

❖ **PLOT**

- Matplotlib
- lab

❖ **Library Numpy (array matrix)**

- Numpy
- lab

❖ **Library Panda (Data Frame)**

- Panda
- Lab

❖ **Regular Expression**

- Pattern Matching And replacement

❖ **Date and Time and Missing Treatment**

- Date and Time
- Data wrangling and cleaning
- Missing treatment

R Programming

❖ **Introduction to R**

- What is R,What is S
- History of R, Features of R
- Comparing Tools
- Installing R
- R interfaces, R Library
- Data Types, Attributes
- Entering Input, Explicit Coercion
- Data Frame, List, Factors, Vectors
- Objects, Matrix Dimensions, Matrix Design
- CBind and RBind, Missing Value

❖ **Data management**

- Reading Data
- Writing data
- Reading data files with tables
- Files connection
- Reading lines of Text files

❖ **Dplyr(Data Manipulation)**

- Sorting Data
- Subsetting Data
- Merging Data
- Aggregating Data

- Reshaping Data

❖ **Control Structures**

- If, For loop
- Repeat, While loop
- Next, Return
- Apply, Lapply, Sapply,
- Tapply, Mapply

❖ **Graphics and Plotting using R**

- Basic plotting and Advance plotting(ggplot2)
- Graphical Parameters
- Combining Plot
- Density Plot, Histogram
- Dot Pot, Bar Plots, Line charts, Pie charts
- Box plot, Scatter Plot
- Saving plots

❖ **User Defined Functions**

- Built-in Function, User-defined Function
- Calling a Function
- Calling a Function with or without an Argument
- Lazy Evaluation of Function

❖ **Web Scrapping**

- Download files from internet
- Extract data from Wikipedia
- Extract data from website
- Extract data from PDF
- Extract data from Facebook

❖ **Sql with R**

- Connecting with Mysql server
- Connecting with Microsoft sql server
- Table creating, editing, updating and merging

❖ **TidyR (Data Cleaning)**

- Clean datasets according standard
- Date and Times
- Pattern Matching
- Regular Expression

❖ **Project**

- Twitter Sentiment analysis

Core Analytics, Predictive Modelling and Machine Learning

(Implementation using R Programming only)

❖ **Introduction to Analytics**

- Evolution of Analytics
- Definition of Analytics
- Scope of analytics in different industries

❖ **Types of Analytics**

- Descriptive Analysis
- Predictive Analysis
- Prescriptive Analysis

❖ **Concepts of Analytics**

- Confirmatory & Exploratory Analysis
- Different Scale of Measurement-Nominal, Ordinal, Interval
- Ratio Attribute and Variable concept
- Graphical Representation of Data
- Measures of Central Tendency-Mean, Median, Mode

- Measures of Dispersion-Range, Variance, Standard Deviation
- Measures Of Location-Quartiles, Interquartile Range
- Outliers & Box Plot Graphs

❖ **Probability**

- Concept of Probability
- Probability mass function
- Random Variables-Discrete and Continuous
- Binomial Distribution
- Poisson Distribution
- Normal Distribution

❖ **Sampling Theory**

- Concept of sampling: Population and Sample
- Types of Sampling
- Probability sampling-Simple, Stratified, Systematic
- Non probability Sampling-Convenience, Judgmental
- Testing Of Hypothesis-Null and Alternative
- Type I error and Type II error
- Significance level
- Confidence Interval

❖ **Parametric Test**

- Concept of Parametric test
- Z test
- T test
- Two independent sample T test
- Paired sample T test

❖ **Association between Variables**

- Chi square Test for Independence
- Scatter Plot

- Correlation
- Partial Correlation

❖ **Analysis Of Variance (ANOVA)**

- One-Way & Two-Way ANOVA
- Concept of Eigen Value and Eigen Vector

❖ **Introduction of Machine Learning**

- Introduction to Data Science and Artificial Intelligence
- Introduction to Machine Learning
- How Artificial Intelligence relates to Machine Learning
- History of Machine Learning

❖ **Introduction of Basic Mathematical concepts used in Machine Learning**

- Vectors
 - Vectors Operations (Addition , subtract, multiplication)
 - Sparsh Vector
 - Dense Vector
 - Eigen Values
 - Eigen Vectors

❖ **Machine Learning Techniques**

- Introduction of MLLIB (Machine Learning libraries)
- Type of Machine Learning Algorithms
 - Supervised
 - Unsupervised
 - Recommendation Systems
- Supervised Learning
 - Classification
 - Decision Tree
 - Naïve Bayes

- Logistic Regression
- Know your neighbor (KNN)
- Random Forest
- Support Vector Machine (SVM)
- Bagging and Boosting
- Regression
 - Linear Regression
 - Logistic Regression
 - Ridge Regression
 - Bagging & Boosting
- Unsupervised Learning
 - Dimension Reduction using PCA
 - Cluster Analysis
 - K Mean Clustering
- Recommendation Systems
 - Market Basket Analysis using collaborate Filtering
 - Alternating Least Square

❖ **Time series Analysis**

- Time Series Components: Trend, Cyclical, Seasonal and Random
- Moving Averages Concept
- Exponential Winters Method
- Random Walk Model
- Unit Root problem
- Autocorrelation Function (ACF)
- Autoregressive (AR) and Moving Average (MA) process
- Box-Jenkins Methodology
- ARIMA

❖ **Projects and Case Studies (based on real time scenarios)**

- Bigmart Sales Prediction (Regression)
- Titanic (Logistic, Naïve bayes, Decision tree)
- SMS spam (Decision tree)
- Bank Loan/Credir Card (Logistic Regression, Decision tree, Random forest)
- Cancer patient Classification (KNN)
- Cluster Analysis

Our Association:



Software/Hardware Vendors



Data

Generators



Insight Providers



Research Centres & Government Agencies



Consultancies



Developed by The Analytics Store (www.theanalyticsstore.com) - August 2013

We are one of the
Top 5 training institutes in India as per



Our Association:



Fees structure*
INR 33000 / USD 593
 plus GST in installments
INR 30000 / USD 539
 plus GST one time payment