SPEEDUP INFOTECH

DATA ANALYTICS

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About Us

Speedup Infotech is operational in the city of Pune aka 'Oxford of the East'. We are an IT training service provider, offering certificate courses in software and several programming languages.

Our highly trained and experienced team is committed to ensure that our pupils acquire the skills which are most sought after and, are monetarily rewarding in the long run in the job market. Our objective is crystal clear i.e to help our candidates ace in the skills most desired in the tech industry and thus, increasing their suitability for various job roles.

Overview

Data Analytics is the systematic process of examining datasets to derive actionable insights, identify trends, and support decision-making. The study of data analytics equips individuals with the technical, analytical, and critical thinking skills required to work with data effectively.

High Demand: Growing need for skilled analysts across industries.

Diverse Opportunities: Roles in finance, healthcare, retail, and more.

Better Decision-Making: Enables evidence-based strategies.

Competitive Salaries: Attractive pay and benefits.

Innovation: Drives creativity and optimization.

Global Relevance: Skills applicable worldwide.

Personal Growth: Enhances critical thinking and problem-solving.

Future-Ready: Prepares for AI, big data, and emerging technologies.

Data Analytics With Python

Module : 1

Introduction To Python

~ What is Python ?
~ Why Python ?
~ Installing Python
~ Python IDEs
~ Jupyter Notebook Overview

HANDS On Exercise

~ Installing Python idle for Windows & Linux
~ Creating "Hello World" code

Module : 2

Python Basics

~ Python basic data types.
~ Lists
~ Slicing
~ IF Statements
~ Loops
~ Dictionaries
~ Tuples
~ Functions
~ Array
~ Selection by position & lables

HANDS On Exercise

~ Practice and Quickly learn Python necessary skills by solving simple questions and problems.
~ How Python uses indentation to structure a program, and how to avoid some common indentation

Data Analytics With Python

Module : 3

Python Packages

~ Pandas

~ Numpy

~ Sci-Kit Learn

~ Mat-Plot Library

HANDS On Exercise

~ Installing jupyter notebook for windows, Linux and Installing numpy,pandas and matplotlib.

Module : 4

Importing Data

~ Reading CSV files

~ Saving in Python data

~ Loading Python data objects

~ Writing data to CSV file

HANDS On Exercise

~ To generate data sets and create visualizations of that data. You learned tocreate simple plots with matplotlib, and you saw how to use a scatter plot to explore random

~ You learned to create a histogram with Pygal and how to use a histogramto explore the results of rolling dice of different

~ Generating your own data sets with code is an interesting and powerful wayto model and explore a wide variety of real-world

~ As you continue to work through the data visualization projects that follow,keep an eye out for situations you might be able to model with

Data Analytics With Python

Module : 5

Manipulating Data

~ Selecting rows/observations

~ Rounding Number

~ Selecting columns/fields

~ Merging data

~ Data aggregation

~ Data munging techniques

HANDS On Exercise

~ As you gain experience with CSV and JSON files, you'll be able to process almost any data you want to analyze.

~ Most online data sets can be downloaded in either or both of these from working with these formats, you'll be able to learn other data formats as well.

Module : 6

Error Metrics

Classification

~ Confusion Matrix

~ Precision

~ Recall

~ Specificity

~ F1 Score

Regression

~ MSE

~ RMSE

~ MAPE

HANDS On Exercise

~ State why the z' transformation is necessary

~ Compute the standard error of z

~ Compute a confidence interval on ? The computation of a
   confidence interval

~ Compute the standard error of z

~ Estimate the population proportion from sample proportions
   Apply the correction for continuity

SQL

Module : 1

Introduction To Database

~ List the features of Oracle Database 11g

~ Discuss the basic design, theoretical, and physical aspects
   of a relational database

~ Categorize the different types of SQL statements

~ Describe the data set used by the course

~ Log on to the database using SQL Developer environment

~ Save queries to files and use script files in SQL Developer

HANDS On Exercise

~ Prepare your environment

~ Work with Oracle database tools

~ Understand and work with language features

Module : 2

Retrieve Data using the SQL SELECT Statement

~ List the capabilities of SQL SELECT statements

~ Generate a report of data from the output of a basic
   SELECT statement

~ Select All Columns

~ Select Specific Columns

~ Use Column Heading Defaults

~ Use Arithmetic Operators

~ Understand Operator Precedence

~ Learn the DESCRIBE command to display the table structure

HANDS On Exercise

~ Individual statements in SQL scripts are commonly terminated by a line break(or carriage return) and a forward slash on the next line, instead of a semicolon.

~ You can create a SELECT statement, terminate it with a line break, include a forward slash to execute the statement, and save it in a script file

Module : 3

Learn to Restrict and Sort Data

~ Write queries that contain a WHERE clause to limit the output retrieved

~ List the comparison operators and logical operators that are used in a WHERE clause

~ Describe the rules of precedence for comparison and logical operators

~ Use character string literals in the WHERE clause

~ Write queries that contain an ORDER BY clause to sort the output of a SELECT statement

~ Sort output in descending and ascending order

HANDS On Exercise

~ Creating the queries in a compound query must return the same number of columns.

~ ORDER BY; it is, however, permissible to place a single ORDER BY clause at the end of the compound query

Module : 4

Usage of Single-Row Functions to Customize Output

~ Describe the differences between single row and multiple row functions

~ Manipulate strings with character function in the SELECT and WHERE clauses

~ Manipulate numbers with the ROUND, TRUNC, and MOD functions

~ Perform arithmetic with date data

~ Manipulate dates with the DATE functions

HANDS On Exercise

~ Create the distinction is made between single- row functions, which execute once for each

~ Row in a dataset, and multiple-row functions, which execute once for all the rows in a data-set.

Module : 5

Invoke Conversion Functions and Conditional Expressions

~ Describe implicit and explicit data type conversion

~ Use the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions

~ Nest multiple functions

~ Apply the NVL, NULLIF, and COALESCE functions to data

~ Use conditional IF THEN ELSE logic in a SELECT

HANDS On Exercise

~ we create and discuss the NVL function, which provides a mechanism to convert null values into more arithmetic-friendly data values

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Module : 6

Aggregate Data Using the Group Functions

~ Use the aggregation functions in SELECT statements to produce meaningful reports

~ Divide the data into groups by using the GROUP BY clause

~ Exclude groups of date by using the HAVING clause

HANDS On Exercise

~ Group functions operate on aggregated data and return a single result per group.

~ These groups usually consist of zero or more rows of data.

Module : 7

Display Data from Multiple Tables Using Joins

~ Write SELECT statements to access data from more than one table

~ View data that generally does not meet a join condition by using outer joins

~ Join a table by using a self-join

Module : 8

Use Subqueries to Solve Queries

~ Describe the types of problem that subqueries can solve

~ Define sub-queries

~ List the types of sub-queries

HANDS On Exercise

~ Write a query that uses subqueries in the column projection list.

~ Write single-row and multiple-row subqueries

Module : 9

The SET Operators

~ Describe the SET operators

~ Use a SET operator to combine multiple queries into a single query

~ Control the order of rows returned

HANDS On Exercise

~ Create The queries in the compound query must return the same number of columns.

~ Creating The corresponding columns must be of compatible data type.

~ Creating The set operators have equal precedence and will be applied in the order they are specified.

Module : 10

Data Manipulation Statements

~ Describe each DML statement

~ Insert rows into a table

~ Change rows in a table by the UPDATE statement

~ Delete rows from a table with the DELETE statement

~ Save and discard changes with the COMMIT and ROLLBACK statements

~ Explain read consistency

HANDS On Exercise

~ Expressions and create expose a vista of data manipulation possibilities through the interaction of arithmetic and character operators with column or literal data, or a combination of the two.

Module : 11

Use of DDL Statements to Create and Manage Tables

~ Categorize the main database objects

~ Review the table structure

~ List the data types available for columns

~ Create a simple table

~ Decipher how constraints can be created at table creation

~ Describe how schema objects work

Module : 12

Other Schema Objects

~ Create a simple and complex view

~ Retrieve data from views

~ Create, maintain, and use sequences

~ Create and maintain indexes

~ Create private and public synonyms

Module : 13

Control User Access

~ Differentiate system privileges from object privileges

~ Create Users

~ Grant System Privileges

~ Create and Grant Privileges to a Role

~ Change Your Password

~ Grant Object Privileges

~ How to pass on privileges?

~ Revoke Object Privileges

HANDS On Exercise

~ create users and execute

Module : 14

Management of Schema Objects

~ Add, Modify and Drop a Column

~ Add, Drop and Defer a Constraint

~ How to enable and Disable a Constraint?

~ Create and Remove Indexes

~ Create a Function-Based Index

~ Perform Flashback Operations

~ Create an External Table by Using ORACLE_LOADER and by Using ORACLE_DATAPUMP

~ Query External Tables

HANDS On Exercise

~ Create the function based index and types.

Module : 15

Manage Objects with Data Dictionary Views

~ Explain the data dictionary

~ Use the Dictionary Views

~ USER_OBJECTS and ALL_OBJECTS Views

~ Table and Column Information

~ Query the dictionary views for constraint

~ Query the dictionary views for view, sequence, index, and synonym information

~ Add a comment to a table

~ Query the dictionary views for comment information

Module : 16

Manipulate Large Data Sets

~ Use Subqueries to Manipulate Data

~ Retrieve Data Using a Subquery as Source

~ Insert Using a Subquery as a Target

~ Usage of the WITH CHECK OPTION Keyword on DML Statements

~ List the types of Multitable INSERT Statements

~ Use Multitable INSERT Statements

~ Merge rows in a table

~ Track Changes in Data over a period of time

Module : 17

Data Management in Different Time Zones

~ Time Zones

~ CURRENT_DATE, CURRENT_TIMESTAMP, and LOCALTIMESTAMP

~ Compare Date and Time in a Session's Time Zone

~ DBTIMEZONE and SESSIONTIMEZONE

~ Difference between DATE and TIMESTAMP

~ INTERVAL Data Types

~ Use EXTRACT, TZ_OFFSET, and FROM_TZ

~ Invoke TO_TIMESTAMP, TO_YMINTERVAL and TO_DSINTERVAL

Module : 18

Retrieve Data Using Sub-queries

~ Multiple-Column Subqueries

~ Pairwise and Non Pairwise Comparison

~ Scalar Subquery Expressions

~ Solve problems with Correlated Subqueries

~ Update and Delete Rows Using Correlated Subqueries

Module : 19

Regular Expression Support

~ Use the Regular Expressions Functions and Conditions in SQL

~ Use Meta Characters with Regular Expressions

~ Perform a Basic Search using the REGEXP_LIKE function

~ Find patterns using the REGEXP_INSTR function

~ Extract Substrings using the REGEXP_SUBSTR function

~ Replace Patterns Using the REGEXP_REPLACE function

~ Usage of Sub-Expressions with Regular Expression Support

~ Implement the REGEXP_COUNT function

HANDS On Exercise

~ Expressions and create the regular columns may be aliased using the AS keyword or by leaving a space between the column or expression and the alias. In this way, both wildcard symbols can be used as either specialized or regular characters in different segmentsof the same character string.

POWER BI

Module : 1

Introduction to Power BI

~ Installation and setup

~ Introduction to Power BI Desktop interface

~ mporting data from various sources

~ Basic data transformations and data shaping

~ Creating simple visualizations (e.g., bar charts, pie charts)

Module : 2

Data Preparation and Modeling

~ Data cleaning and transformation techniques

~ Understanding relationships in Power BI

~ Creating calculated columns and measures using DAX

~ Introduction to Power Query for data manipulation

~ Working with different data types (e.g., text, numeric, date)

Module : 3

Advanced Data Modeling

~ Understanding complex relationships

~ Introduction to DAX functions (SUMX, CALCULATE, RELATED, etc.)

~ Introduction to Time Intelligence functions for date analysis

~ Working with hierarchies and drill-downs

Module : 4

Advanced Visualization Techniques

~ Using custom visuals and customizing visual appearance

~ Interactive features (slicers, filters, bookmarks)

~ Creating calculated tables and using them in visualizations

~ Advanced chart types (e.g., waterfall charts, KPIs, maps)

~ Tips for effective storytelling with data visualization

Module : 5

Advanced Visualization Techniques

~ Publishing reports to Power BI Service

~ Creating and managing workspaces

~ Configuring data refresh schedules

~ Introduction to Power BI mobile app

~ Collaborating with colleagues using Power BI Apps & sharing options

Module : 6

Power BI Administration and Security

~ Implementing row-level security (RLS)

~ Understanding data security options in Power BI

~ Best practices for data governance and compliance

~ Managing data source connections and gateways

Module : 7

Advanced Data Analysis and Insights

~ Advanced DAX techniques

~ Statistical analysis using DAX functions

~ Forecasting and predictive analytics with Power BI

~ Advanced data visualization techniques for insights

~ Creating dashboards for executive reporting

Module : 8

Advanced Data Analysis and Insights

~ Integrating Power BI with other Microsoft tools
   (Excel, SharePoint, Teams)

~ Introduction to Power BI APIs and embedding options

~ Automating tasks using Power BI PowerShell cmdlets

~ Using Power Automate (formerly Microsoft Flow) with Power BI

~ Building custom solutions with Power BI Embedded

Module : 9

Advanced Topics and Case Studies

~ Real-world case studies and project examples

Advanced EXCEL

Module : 1

Advanced Functions and Formulas

~ Review of basic functions (SUM, IF, VLOOKUP, etc.)

~ Advanced lookup functions (INDEX/MATCH, XLOOKUP)

~ Logical functions (AND, OR, IFERROR, etc.)

~ Text functions (CONCATENATE, LEFT, RIGHT, MID, etc.)

~ Date and time functions (DATE, EDATE, WEEKDAY, etc.)

Module : 2

Array Formulas and Dynamic Arrays

~ Understanding array formulas

~ Array functions (TRANSPOSE, FREQUENCY, MMULT, etc.)

~ Introduction to dynamic arrays (FILTER, SORT, UNIQUE, etc.)

~ Using dynamic arrays for data analysis and manipulation

Module : 3

Data Analysis Tools

~ Introduction to Excel Tables

~ PivotTables: basics and advanced techniques

~ PivotCharts and Slicers for interactive analysis

~ Using Power Query for data cleaning and transformation

~ Introduction to Power Pivot for advanced data modeling

Module : 4

Data Analysis Tools

~ Statistical analysis with Excel (Descriptive statistics,Regression,etc.)

~ Advanced charting techniques (Sparklines,Combo charts, etc.)

~ Incorporating custom calculations into PivotTables

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Module : 5
Macros and VBA Programming

~ Recording and editing macros

~ Introduction to Visual Basic for Applications (VBA)

~ Writing custom macros using VBA

~ Automation techniques and best practices

Module : 6
Macros and VBA Programming

~ Design principles for effective dashboards

~ Creating dynamic charts and graphs

~ Using conditional formatting for visual insights

~ Building interactive dashboards with form controls

Module : 7
Collaboration and Integration

~ Importing and exporting data between Excel and other
  applications (Word,PowerPoint, etc.)

~ Introduction to Power BI for advanced data visualization & analysis

~ Integrating Excel with other Microsoft Office apps

Module : 8
Advanced Data Techniques

~ Using array formulas for advanced calculations

~ Techniques for handling large datasets

~ Advanced filtering and sorting techniques

~ Tips for efficient data management and organization

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Statistics

Module : 1

Introduction to Statistical Thinking

~ Role of statistics in data analysis and decision-making

~ Types of data and measurement scales

~ Central Tendency - Mean, median, mode, skewness

~ Standard Deviation & variance

~ Introduction to probability theory and basic concepts

Module : 2

Exploratory Data Analysis (EDA)

~ Understanding data distributions and summary statistics

~ Visualisation techniques for EDA(histograms,box plots,scatter plots)

~ Identifying outliers and missing values

~ Correlation analysis and heatmap visualization

~ Hands-on exercises with Python/R for EDA

Module : 3

Probability Distributions

~ Probability distributions (discrete and continuous)

~ Normal distribution and its properties

~ Binomial and Poisson distributions

~ Central Limit Theorem and its implications

~ Simulating random variables in Python/R

Module : 4

Probability Distributions

~ Point estimation and interval estimation

~ Hypothesis testing: concepts and methodologies

~ One-sample and two-sample tests

~ Chi-square tests for categorical data analysis

~ Hands-on practice with hypothesis testing using Python/R

Module : 5
Regression Analysis

~ Introduction to linear regression

~ Simple linear regression vs. multiple linear regression

~ Assumptions and diagnostics in regression analysis

~ Model evaluation metrics (R-squared, RMSE, MAE)

~ Practical implementation of regression models in Python/R

Module : 6
Classification Techniques

~ Overview of classification algorithms (logistic regression, decision trees,SVM)

~ Evaluation metrics for classification models (accuracy, precision, recall, F1score)

~ Cross-validation techniques for model validation

~ Introduction to ensemble methods (bagging, boosting)

~ Hands-on exercises with classification algorithms in Python/R

Module : 7
Clustering and Dimensionality Reduction

~ Introduction to unsupervised learning

~ K-means clustering algorithm and its variants

~ Hierarchical clustering techniques

~ Dimensionality reduction methods (PCA, t-SNE)

~ Practical applications and implementation in Python/R

Module : 8

Time Series Analysis

~ Time series data: components and patterns

~ Decomposition methods (additive vs. multiplicative)

~ Forecasting techniques (ARIMA, exponential smoothing)

~ Model evaluation and performance metrics

~ Time series analysis with Python/R libraries

Module : 9

Bayesian Statistics

~ Bayesian reasoning and updating priors

~ Markov Chain Monte Carlo (MCMC) methods

~ Practical applications of Bayesian statistics in data science

~ Hands-on exercises with Bayesian analysis in Python/R

HANDS On Exercise

~ Integration of statistical and mathematical concepts into a
   data science project

~ Project presentation and peer review

~ Review of key concepts and methodologies covered in the course

~ Q&A and open discussion

Your Journey Starts Here

Demo Session	**Mock Interview**
Enroll	**Soft Skill Session**
Study Material and Syllabus	**Course Certificate**
Classroom / Online Training	**Assured Placement**
Live Project Work	**Live Project Work**

Soft Skill Training

- **English Communication**
- **Interview Preparation**
- **Mock Interview**
- **Resume Writing**
- **HR Interview Sessions**
- **Interview Facing Tips, etc.**

01 Business Intelligence Analyst

02 Financial Analyst

03 Quantitative Analyst

04 Data Analyst

05 Data Engineer

06 Marketing Analytics Manager

07 Data Governance Analyst

08 Business Analyst

09 Machine Learning Scientist

10 Risk Analyst

Career Opportunities available after learning **Data Analytics**

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GET IN TOUCH

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