



# DATA ANALYTICS

## WHO SHOULD DO THESE COURSES?

Students who have completed Class XII and wish to acquire technical skills can enroll without any prerequisites. Our courses cover basic to advanced level, suitable for enhancing resumes and boosting skillsets for both students and professionals. Open to all fields including B.Com, BBA, BMS, Economics, Maths, Stats, CA, CS, CMA, MBA, Actuarial Science, CFA, FRM.



- ▶ MS Excel
- ▶ VBA
- ▶ R Programming
- ▶ Machine Learning
- ▶ SQL
- ▶ Python
- ▶ Power BI
- ▶ G-Suite
- ▶ MS Office
- ▶ Financial Modelling



- ▶ Recorded Lectures
- ▶ 125+ hours of content
- ▶ Certification on course completion
- ▶ Useful resources are provided
- ▶ 15 months validity

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All courses combined come at a price of

**₹9000/-**



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\* See the pages below for individual course pricing.



# MS-EXCEL



## 1 CLASS

- ▶ Basic introduction
- ▶ Uses of excel
- ▶ Relevant tabs and interface of Excel
- ▶ Basic features
- ▶ Basic operations



## 2 CLASS

- ▶ Logical functions
- ▶ Count functions
- ▶ Numeric functions
- ▶ Vlookup functions
- ▶ Other functions

## 3 CLASS

- ▶ Floor & Ceiling functions
- ▶ Text functions
- ▶ Date functions

## 4 CLASS

- ▶ Handling errors
- ▶ Nested functions
- ▶ Index functions

## 5 CLASS

- ▶ Sorting & Filtering
- ▶ Named Ranges
- ▶ Text Extraction
- ▶ Pivot Tables

## 6 CLASS

- ▶ Barchart
- ▶ Histogram
- ▶ Scatter & Bubble chart
- ▶ Combo chart
- ▶ Pie chart with 3D effects

## 7 CLASS

- ▶ Add-In
- ▶ Random Numbers
- ▶ Rank & Percentile
- ▶ Histogram
- ▶ Descriptive Statistics
- ▶ Solver

## 8 CLASS

- ▶ Linear regression
- ▶ Logistic regression

## 9 CLASS

- ▶ Case study on Regression
- ▶ Simulation

## 10 CLASS

- ▶ Waterfall charts
- ▶ Clustering



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# VBA



## 1 CLASS

### Introduction

- Introduction of VBA
- Recording a Macro
- Different ways of running the same
- Case study 1 - Summarising a dataset
- Case study 2 - Lock cells in a protected sheet

## 2 CLASS

- Writing first code of macros
- Explain different windows on the VB editor
- Different VBA data types
- Variable and constant Declaration
- Active cell properties
- Different operators
- Control flow statement
- Conditional statement >> If-Then-Else-EndIf; Select Case

## 3 CLASS

- Control flow statement >> Looping (Do-While; Do-Until; For loop)
- Three Case Studies on looping

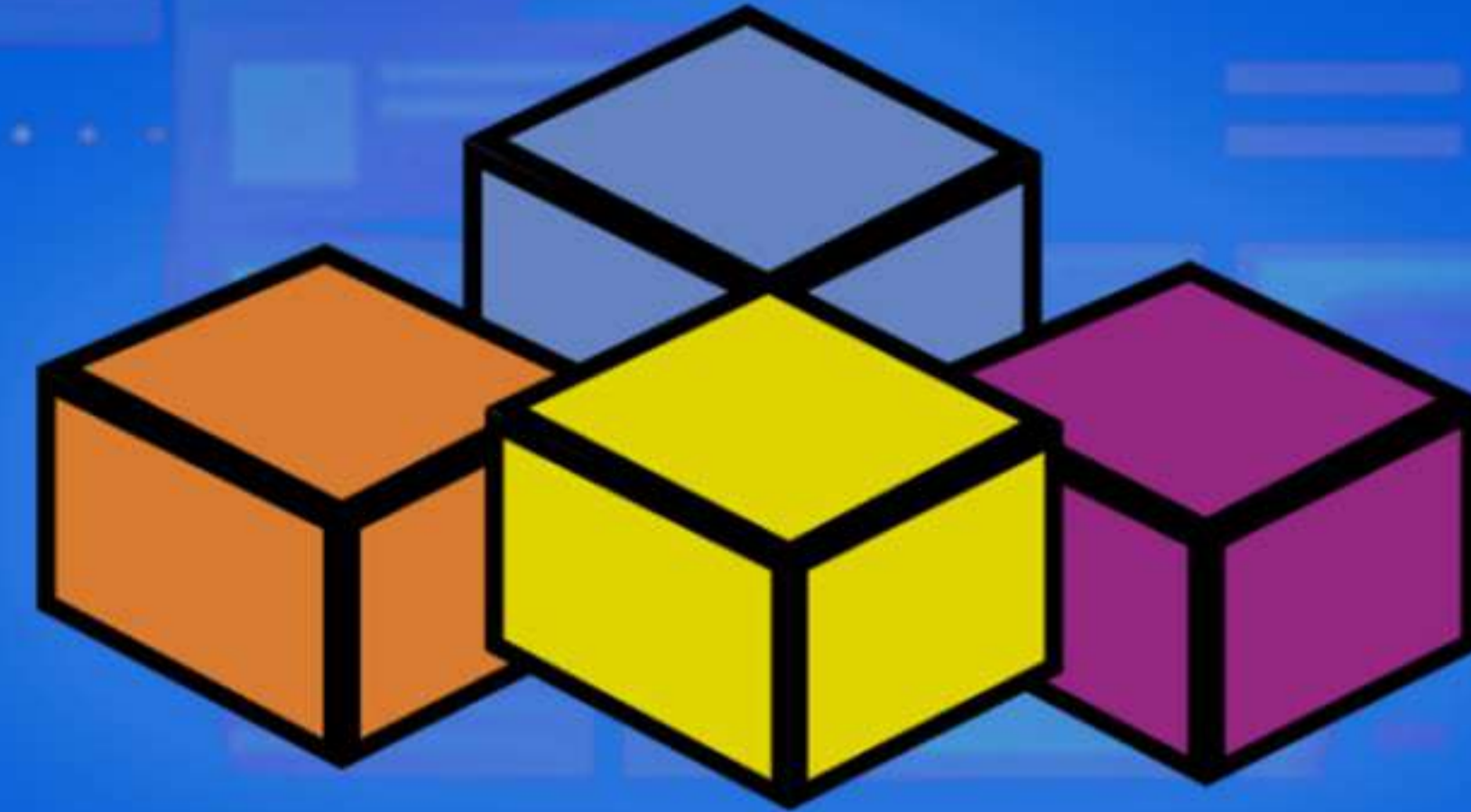
## 4 CLASS

- Cut, Copy, Paste and Paste Special
- Arrays >> Collection of multiple values
- Creating User defined functions
- Text functions

## 5 CLASS

- Userforms >> Insert userform
- Properties
- Toolbox
- Coding
- Open and Run the Forms
- Entering data using Forms

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## 6 CLASS

- Excel Objects >> Application object, workbook object, worksheet object
- VBA Events >> Worksheet events, workbook events
- Case study - Insert table of contents

## 7 CLASS

- Errors: Syntax errors, runtime errors, logical errors;
- Error handlers >> GoTo Line, Resume Next

## 8 CLASS

- Everyday Codes >> Highlight blank cells
- Add new sheet
- Get worksheet names
- Deleting sheets
- Hiding and Unhiding Sheets
- Highlighting alternative rows
- Insert hyperlinks

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# R PROGRAMMING



## BASICS

- ▶ Installation of R, Packages in R, Basic Operators, Types of Variables
- ▶ Basic functions, Types of Object in R- Vectors
- ▶ Indexing and Paste function, Factors and Labelling thr values
- ▶ Matrices, rbind & cbind, Transpose & Determinant of Matrix
- ▶ Dataframes, Structure & naming the Dataframes, Arrays & Lists
- ▶ User-defined functions, Importing Data & Exporting Data
- ▶ Important features, Important functions- which, sort, sapply, Plotting- lines & legend function
- ▶ Dates, Looping- While loop, for loop, repeat loop

## GG PLOT

- ▶ Features of ggplot, Structure of ggplot & Statistical Transformation, Faceting, Coordinates, Themes
- ▶ Graphs, Stacked Bar Chart, Boxplots, Histogram & Density

## DATA MANIPULATION & TECHNIQUES

- ▶ What is Predictive Modelling?, Objectives & Characteristics, Basic Central Tendencies
- ▶ Apply Family- apply, lapply, sapply, tapply, rapply, mapply, Aggregate Function
- ▶ DPLYR Package, filter, select & mutate function
- ▶ Need of String Manipulation, Functions- grep, grepl, nchar, tolower, chartr, paste, substr, strsplit
- ▶ Functions- transform, split
- ▶ Treating the missing values using different functions

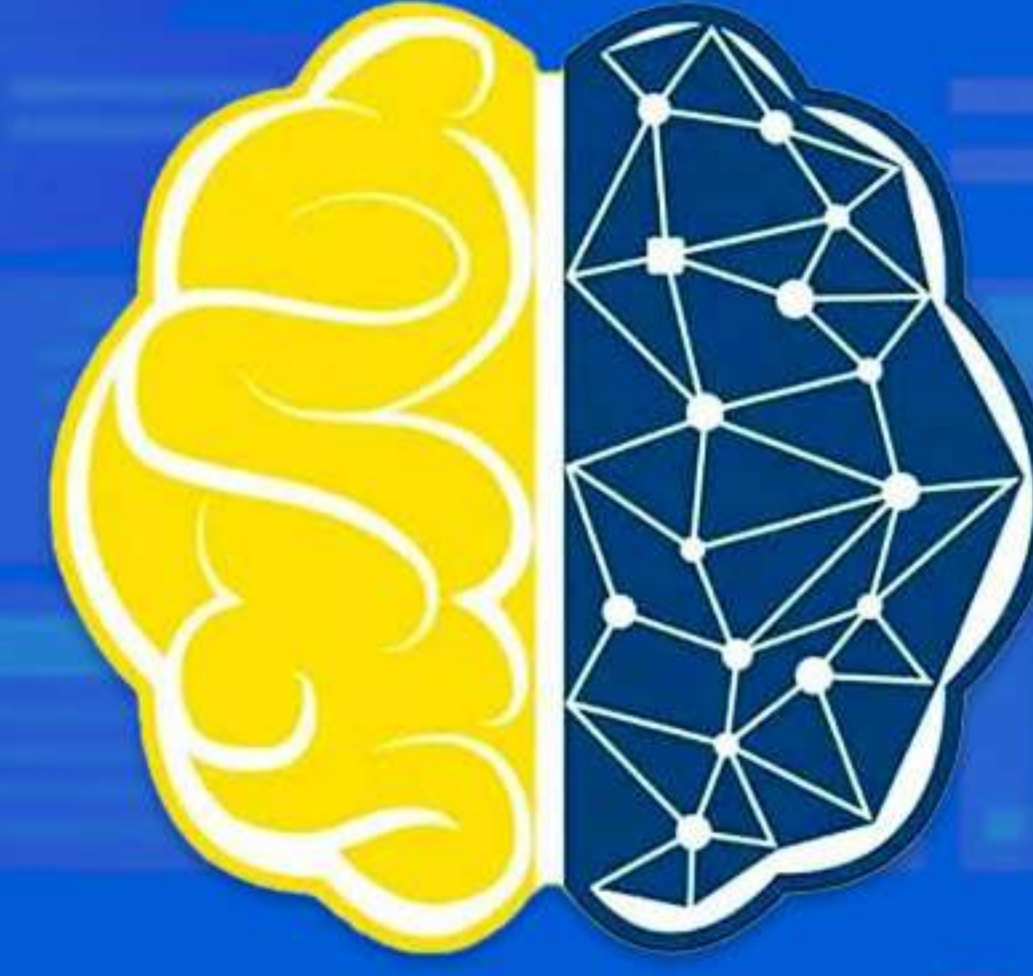


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# MACHINE LEARNING



- ▶ **CLASS 1:** Introduction to Hypothesis Testing
- ▶ **CLASS 2:** Hypothesis Testing in R
- ▶ **CLASS 3:** Chi-Squared Test in R
- ▶ **CLASS 4:** T-Test in R
- ▶ **CLASS 5:** Z-Test in R
- ▶ **CLASS 6:** Regression Theory Class 1
- ▶ **CLASS 7:** Regression Theory Class 2
- ▶ **CLASS 8:** Simple Linear Regression in R
- ▶ **CLASS 9:** Multiple Linear Regression in R
- ▶ **CLASS 10:** Introduction to Machine Learning
- ▶ **CLASS 11:** Prediction Accuracy of Models
- ▶ **CLASS 12:** Bias-Variance Tradeoff
- ▶ **CLASS 13:** Ols and Cross-Validation Techniques
- ▶ **CLASS 14:** Subset Selection Techniques
- ▶ **CLASS 15:** Compute MSE in R
- ▶ **CLASS 16:** Cross Validation Approaches in R
- ▶ **CLASS 17:** Best Subset Selection in R
- ▶ **CLASS 18:** Forward Selection in R
- ▶ **CLASS 19:** Backward Selection in R
- ▶ **CLASS 20:** Ridge Regression
- ▶ **CLASS 21:** LASSO Regression
- ▶ **CLASS 22:** PLS Regression
- ▶ **CLASS 23:** Logistic Regression in R
- ▶ **CLASS 24:** ROC & AUC in Logistic Regression
- ▶ **CLASS 25:** Validating Logistic Regression
- ▶ **CLASS 26:** Lasso Logistic Regression
- ▶ **CLASS 27:** Naive Bayes Classifier-Theory
- ▶ **CLASS 28:** Naive Bayes Classifier in R
- ▶ **CLASS 29:** Naive Bayes Package
- ▶ **CLASS 30:** K Nearest Neighbour Theory
- ▶ **CLASS 31:** KNN in R

- ▶ **CLASS 32:** Decision Trees Theory
- ▶ **CLASS 33:** Regression Decision Tree in R
- ▶ **CLASS 34:** Classification Decision Tree in R
- ▶ **CLASS 35:** Pruning Decision Trees
- ▶ **CLASS 36:** Pruning Decision Trees in R
- ▶ **CLASS 37:** Pruning Classification Trees in R
- ▶ **CLASS 38:** Bagging and Random Forest Theory
- ▶ **CLASS 39:** Bagging Regression Trees in R
- ▶ **CLASS 40:** Bagging Classification Trees in R
- ▶ **CLASS 41:** Random Forest Regression Trees in R
- ▶ **CLASS 42:** Random Forest Classification Trees in R
- ▶ **CLASS 43:** Boosting Technique Theory
- ▶ **CLASS 44:** Boosting Regression Trees
- ▶ **CLASS 45:** Boosting Classification Trees
- ▶ **CLASS 46:** PCA Theory
- ▶ **CLASS 47:** PCA in R
- ▶ **CLASS 48:** Clustering Theory
- ▶ **CLASS 49:** Hierarchical Clustering in R
- ▶ **CLASS 50:** K Means Clustering in R



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# SQL



## 1 CLASS

### Introduction to Database Management System

- Overview of DBMS
- Characteristics of DBMS
- Database Terminologies
- Keys in DBMS
- SQL Statement Fundamentals
- Overview of SQL statements
- SQL Data Types
- Creating Database and Tables
- Working with Constraints
- DDL Statements
- Creating and Managing Tables

## 2 CLASS

- Open an existing SQL script
- Execute all the codes given in the script

## 3 CLASS

- Alter and Drop Table Commands
- Maintaining Referential Integrity
- Retrieving data using SELECT statements
- Insert
- Sorting
- Group By
- Order By

## 4 CLASS

- Update
- Delete
- Rollback
- Commit
- Duplicate
- 'Null' and 'Not Null'
- Coalesce

## 5 CLASS

- Handling Error
- SQL operators

## 6 CLASS

- Assignment given to perform the task
- JOINS\_creating\_duplicate\_tables

## 7 CLASS

- SQL Join Commands
- Inner Join

## 8 CLASS

- Left Join
- Right Join

## 9 CLASS

- Explaining Joins using PDF
- Cross Join
- Assignment given to perform the task
- Union and Union All Select

## 10 CLASS

- SQL Subqueries
- Assignment given to do in class

## 11 CLASS

- Assignment to do the task using Union command

## 12 CLASS

- SQL Self Join
- Assignment done using the given task
- Distinct Clause

## 13 CLASS

- Assignment
- SQL Views

## 14 CLASS

- Stored Procedure
- User Defined Functions



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# PYTHON



## 1 CLASS

- ▶ Arithmetic Operators ( $\%$ ,  $**$ ,  $==$ )
- ▶ Strings
- ▶ Type(x) (String, float, Int)
- ▶ Assign and Reassign Values
- ▶ Add Comments #
- ▶ Indentation

## 2 CLASS

- ▶ Comparison Operators ( $!=$ ,  $>$ ,  $<$ ,  $==$ ,  $<=$ )
- ▶ Logical Operators (not, and, or)
- ▶ Identity Operator (is, is not)
- ▶ Conditional Operators (if, else, elif)
- ▶ Functions

## 3 CLASS

- ▶ List
- ▶ Tuples
- ▶ Sets
- ▶ Dictionary
- ▶ For
- ▶ While
- ▶ Range

## 4 CLASS

- ▶ Advanced Python
- ▶ Libraries: Numpy, Matplotlib, Pandas
- ▶ Simple Return
- ▶ Plotting Returns
- ▶ Daily to Annualized
- ▶ Head /Tail
- ▶ Shift

## 5 CLASS

- ▶ Log Returns
- ▶ Numpy Array
- ▶ Random Distribution
- ▶ Iloc & Loc Method

## 6 CLASS

- ▶ Portfolio Return
- ▶ YFinance
- ▶ Functions of Yfinance
- ▶ Options

## 7 CLASS

- ▶ Calculating Risk of Security
- ▶ Portfolio Diversification
- ▶ Covariance
- ▶ Correlation

## 8 CLASS

- ▶ Beta
- ▶ CAPM Model
- ▶ Regression
- ▶ Algo Trading -Introduction



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# POWER BI



## 1 CLASS

- ▶ Business Intelligence
- ▶ Data Visualization
- ▶ Power BI
- ▶ Features
- ▶ Why Power BI
- ▶ Top 10 key Business Benefits
- ▶ Components of Power BI
- ▶ Building Blocks of Power BI

## 2 CLASS

- ▶ Importing Data
- ▶ Pivot Table in Power BI
- ▶ Interactive Dashboard
- ▶ Table
- ▶ Matrix
- ▶ Stacked bar/col
- ▶ 100% Stacked
- ▶ Line
- ▶ Ribbon
- ▶ Stacked area
- ▶ Scatter
- ▶ Waterfall
- ▶ Funnel
- ▶ Pie
- ▶ How to Save

## 3 CLASS

- ▶ How to link 2 or more tabs/sheets
- ▶ Tooltips

## 4 CLASS

- Theory Concept**
- ▶ Power Query
  - ▶ Merge Queries
  - ▶ Append Queries



## 5 CLASS

### Practicals of MS ACCESS

- ▶ How to combine Queries
- ▶ Transpose
- ▶ How to Pivot & Unpivot Column
- ▶ Extract

## 6 CLASS

- ▶ DAX Functions
- ▶ Importing Multiple Sheets
- ▶ Building the Model

## 7 CLASS

- ▶ Maps



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# G-SUITE



## 1 CLASS

### Creating an account and exploring the Gmail

- ▶ Exploring Gmail Account
- ▶ Creating Labels
- ▶ Chat
- ▶ Drafting message through schedule

## 2 CLASS

### My Drive

- ▶ Creating New Folder
- ▶ Creating Sub Folder
- ▶ Uploading Documents

## 3 CLASS

### Google Doc

- ▶ Exploring all the templates



## 4 CLASS

### Exploring Google Doc

- ▶ Add-ons
- ▶ Extension
- ▶ Doc Secrets

## 5 CLASS

### Slides

- ▶ Working on templates

## 6 CLASS

### Google Sheets

- ▶ Protecting Sheet
- ▶ Cell referencing

## 7 CLASS

### Google Forms

- ▶ Creating forms

## 8 CLASS

- ▶ Process of sending admission forms
- ▶ Response sheet
- ▶ Settings

## 9 CLASS

- ▶ Section wise Google Forms

## 10 CLASS

### Google Meet

- ▶ Exploring Google meet

## 11 CLASS

### Google Sites

- ▶ Creating websites

## 12 CLASS

### All the other App Launchers

- ▶ Google Earth
- ▶ Keep
- ▶ Google advanced Vault
- ▶ My Group
- ▶ Google Map
- ▶ Google Travel



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# MS-OFFICE



## 1 CLASS

### Different Components

- ▶ Ways of opening MS Office Word
- ▶ Page formatting, editing
- ▶ How to increase your typing speed
- ▶ Spacing, Highlighting, Copy & Paste in different ways
- ▶ Formatting data, Inserting Bullets
- ▶ Shortcut Keys (A - Z)
- ▶ Insert table to your text
- ▶ Picture formatting
- ▶ How to take screenshot in your laptop
- ▶ Bookmark, Header & Footer, Watermark

## 2 CLASS

- ▶ Mail merge
- ▶ Referencing
- ▶ Insert Citation
- ▶ How to save, share & export
- ▶ Spelling & Grammar
- ▶ How to translate in different language
- ▶ How to add & delete the comment
- ▶ Track Changes
- ▶ Formatting multiple Letters for interview
- ▶ How to create certificate
- ▶ How to insert auto text & auto correct

## 3 CLASS

### Different components

- ▶ How to create the Presentation in PowerPoint
- ▶ How to add the image & video in your presentation
- ▶ How to do the Animations
- ▶ Changes made by slide master displays in all the slides

## 4 CLASS

### Theory Concept

- ▶ Learn about DBMS (meaning & need)
- ▶ Database Terminologies
- ▶ MS-Access Overview
- ▶ Database Objects
- ▶ Steps to use Ms-Access
- ▶ Creating a Database in Ms-Access
- ▶ Table
- ▶ Data type in Ms-Access
- ▶ How to open Ms-Access
- ▶ How to save & locate your database
- ▶ Creating tables
- ▶ Queries in Ms-Access



## 5 CLASS

### Practicals of MS ACCESS

- ▶ Table Tools
- ▶ Relationship Tools
- ▶ Query Tools
- ▶ Layout Tools
- ▶ Design Tools
- ▶ Report Layout Tools
- ▶ Report Design Tools
- ▶ Import Ms-Access into Excel

## 6 CLASS (MS ONE NOTE)

- ▶ Insert table tools
- ▶ How to insert excel spreadsheet into it
- ▶ Formatting Note page
- ▶ Insert file
- ▶ How to import chart from excel

## 7 CLASS (MS OUTLOOK)

- ▶ What is the outlook?
- ▶ Managing Gmail account



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# FINANCIAL MODELLING



## 1 CLASS

- ▶ Fundamentals of valuation
- ▶ Learning valuation
- ▶ Methods including market price method
- ▶ Comparable companies method
- ▶ Market transactions method
- ▶ Basics of DCF
- ▶ Fundamental accounting
- ▶ Advanced modelling techniques
- ▶ Industry insights into IT Services

## 2 CLASS

- ▶ Equity Value
- ▶ Enterprise value
- ▶ How to bridge both
- ▶ EV / EBITDA, Price to Earnings
- ▶ EV / Revenues, AV / Revenues
- ▶ Price to Book
- ▶ When to use these techniques
- ▶ Q&A on the above
- ▶ Building basic revenue models
- ▶ How to make projections efficiently
- ▶ Industry insights into Banking and Financial Services

## 3 CLASS

- ▶ Solving and Analysing quick interview style case study (financial model)
- ▶ Building and understanding the 3 statements - P&L, BS and CFS
- ▶ Industry insights into FMCG

## 4 CLASS

- ▶ Building a Dividend discount model
- ▶ Building Advanced revenue models
- ▶ SaaS and recurring revenue companies
- ▶ Parameters to be considered while projecting revenues for these companies
- ▶ Industry insights into Pharma / CDMO / CRAMS / API

## 5 CLASS

- ▶ Preparation of model from scratch
- ▶ Using a blank spreadsheet
- ▶ Identifying different sources of data
- ▶ Analysing the data
- ▶ Preparation of assumptions sheet
- ▶ Forecasting revenues
- ▶ Costs and other drivers of Financial Statements



## 6 CLASS

- ▶ Build up on the model, complete PL, B/S and Cash flows
- ▶ Preparation of various schedules
- ▶ Debt schedule, Fixed Asset Schedule, Capex Schedule
- ▶ Understanding the tax loss reserves in case of losses in the past

## 7 CLASS

- ▶ Identifying WACC, FCFF
- ▶ DCF analysis and final valuation
- ▶ Cross check the valuation of companies

## 8 CLASS

- ▶ Advanced items like sensitivity analysis
- ▶ Analysis for IRR, MOIC (Multiple on invested capital)
- ▶ Open the floor for Q&A, Industry insights

## 9 CLASS

- ▶ Basics of LBO modelling
- ▶ Building an interview style 1 hour LBO model

## 10 CLASS

- ▶ Basics of Merger modelling
- ▶ Building an interview style 1 hour Merger model



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