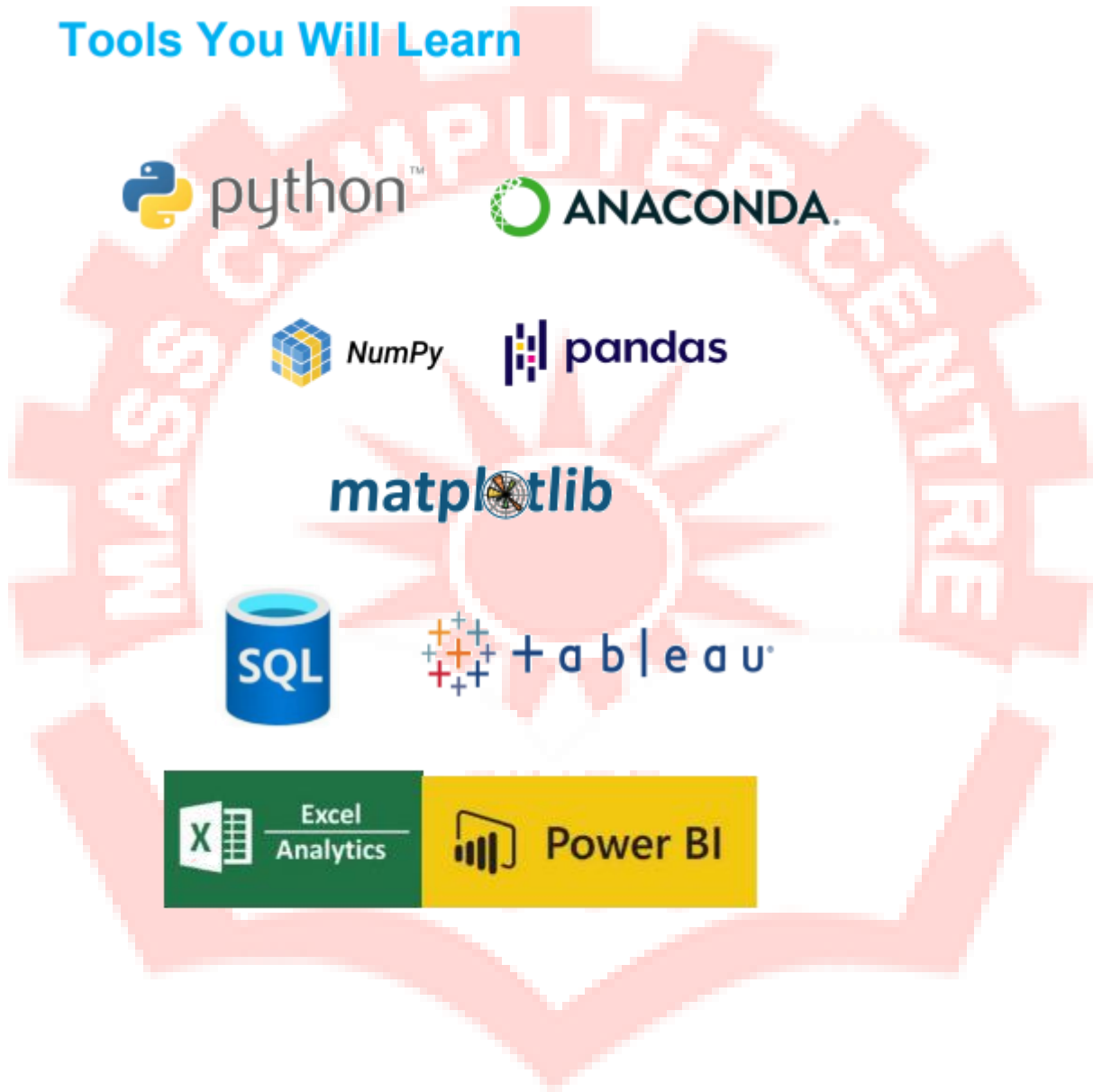


# Data Analyst

- SQL, Python, Python Analytics, Excel Analytics, Tableau & Power BI

## Tools You Will Learn



## Oracle SQL / Database Syllabus

### ❖ Installation & Configuration

### ❖ Design Database

- Create Tables
- Implementing Foreign Keys
- Using Auto Increment

### ❖ Constraints

- Foreign Keys & index
- Primary key & index
- Unique key & index
- Not null constraint

### ❖ Indexes

### ❖ CRUD Operations

- Create
- Read
- Update
- Delete

### ❖ Select Queries

- Basic Queries
- Using AND conditions
- Using OR conditions
- Using in, between, distinct and like keywords
- Sorting in ascending and descending order

### ❖ Functions

- Basic functions like lower case, upper case etc.
- Complex functions like position, left and ifnull

### ❖ Groups

- Basic Queries
- Using Having Clause
- Multi column groups

❖ **Joins**

- Creating Foreign Keys and use them in Joins
- Inner Join or Natural Join
- Left Outer Join
- Right Outer Join
- Full Outer Joins
- Complex Join Queries etc

❖ **Views & Inline Views**

❖ **Subquery**

❖ **Create Complex Queries**

- Using Joins, Groups, Views & Subquery all together
- Creating tables using queries
- Inserting, Update & Delete using Select Queries

❖ **Project**

## Tableau

❖ **Introduction to Tableau**

- Architecture
- Data Model
- Data Connection with single data sources
- Data Joins
- Working with multiple data sources
- Data Blending
- Difference between joining and blending data

❖ **Tableau Interface**

- Measures and dimension
- Shelves
- Show me
- Data Types
- Default Properties
- Marks Card
- Page Shelf
- Saving and sharing your work-overview
- Difference between .twb and .twbx
- Discrete vs Continuous

❖ **Date Aggregations and Date parts**

- Cross tab
- Totals & Subtotals

❖ **Chart Types**

- Bar Charts & Stacked Bars
- Pie Chart
- Line Graph with Date
- Line Graph without Date
- Area charts
- Tree Map
- Word Cloud
- Packed Bubble
- Box & Whiskers Plot
- Scatter Plots
- Highlight tables
- Heat maps

❖ **Data Visualization**

- Geographical fields
- Map options

❖ **Run Time Columns**

- Calculated Fields
- String Calculation
- Data Calculation
- Logical Calculation
- Numeric Calculation
- Parameters
- Table Calculations
- Level of detail

❖ **Data Formatting**

- Legends
- Highlights
- Labelling
- Number Formats
- Alignment

❖ **Advanced Functionalities**

- Sorting
- Groups
- Sets
- Hierarchy
- Reference and Trend Lines
- Edit Axis
- Bins

❖ **Filters**

- Dimension Filter
- Measure Filter
- Filter - Display Option
- Context Filters
- Relevant Filters
- Sets in filters
- Conditional Filters

❖ **Advanced Charts**

- Pareto
- Waterfall
- Funnel
- Waffle Chart

❖ **Dashboards**

- Dashboard Objects
- Dashboard Actions
- URL
- Highlight
- Filter
- Advanced Interactivity
- Publish to Web

❖ **Case Studies / Project**

- Data Visualization (creating Charts, Dashboards etc.)
  - On Data from SQL
  - On Data from Python
  - On Data from CSV files

## Python & Python Analytics

### ❖ Python Programming

- Installing Anaconda & Python v3 | Git Bash
- Basics - variables, constants etc.
- Python Programming - If..else, while loop, for loops etc.
- Logic Building Sessions
- Functions
- Classes
- OOPs
- Collections
  - List
  - Dictionary
  - Tuple
  - Array
  - Set
- Exception Handling
- SQL Database Integration
- File IO

### ❖ Data Analytics in Python

- Installing & Understanding Analytics Packages
- **NumPy** Array Operations
- **Pandas** Data Frame Operations
- Data Acquisition (Import & Export)
- Indexing
- Selection
- Sorting
- Filtering
- Group By
- Binning
- Concatenation
- Merge
- Append
- Drop

### ❖ Data Visualization in Python

- Installing Libraries
  - Matplotlib
  - Seaborn
- Charts & Plots
  - Histogram
  - Scatter Plots
  - Box Plots
  - Line Chart
  - Bar Chart
  - Pie Chart etc.
- Dashboards
- Project

## Excel Analytics

### ❖ Working with Spreadsheets

### ❖ Excel Common Functions

- Len
- Conditions functions
- V Lookup
- Rank
- Grouping Functions : Sum, Avg, Min, Max, Count & CountA

### ❖ Pivot Tables

### ❖ Charts

- Bar Chart | Pie Chart | Line Chart | Bubble Chart etc
- Stacked Bar Chart
  - Horizontal
  - Vertical

### ❖ Excel Dashboards (Project)

## Power BI

### ❖ Introduction to Power BI

- What is Power BI and Why Power BI
- Installing Power BI Desktop
- Exploring the Power BI Workflow
- Adjusting the settings of the Power BI Desktop
- Comparison of Power BI vs Other Reporting Tools

### ❖ Getting and Transforming Data with Power BI Desktop

- Connecting to different sources
- Different connecting Options(DirectQuery vs Import Data Vs Live Connection)
- Shaping and transforming data with Power Query
- Editing, Merging, Appending queries etc

### ❖ Modeling with Power BI

- Introduction to Modeling
- Building Relational Models(Setup and Manage Relationships)
- Creating table relationships
- Understanding the filter flow
- Cardinality and Cross filtering

### ❖ DAX

- Understanding Dax Syntax
- Calculated Columns vs Measures
- Common Dax functions and formula
- understanding the evaluation context in DAX

### ❖ Visualising Data with Reports

- Creating Visualisations
- Color & Conditional Formatting



- Setting Sort Order
- Scatter & Bubble Charts & Play Axis
- Tooltips
- Slicers, Timeline Slicers & Sync Slicers
- Cross Filtering and Highlighting
- Visual, Page and Report Level Filters
- Drill Down/Up
- Hierarchies
- Constant Lines
- Tables, Matrices & Table Conditional Formatting
- KPI's, Cards & Gauges
- Map Visualisations
- Custom Visuals
- Managing and Arranging
- Drillthrough
- Custom Report Themes
- Grouping and Binning
- Bookmarks & Buttons

❖ **Introduction to Power BI Service**

- Introduction to the Power BI Service
- Quick Tour of Power BI Service
- Connecting to Data from Power BI service
- Building Blocks of Power BI Service

❖ **Sharing and Collaboration Tools in Power BI Service**

- Sharing and Collaboration Options Overview
- Publish from Power BI Desktop
- Publish Reports to Web
- Printing and Exporting from Power BI Service
- Sharing Reports & Dashboards
- Workspaces (My Workspace vs App Workspace)
- Publishing Apps in Power BI Service
- Row Level Security in Power BI Desktop and Service

❖ **Power BI Gateway and Refreshing Datasets**

- Understanding Gateways in Power BI
- Difference between Personal and On-Premise Gateway
- Installation of Personal Gateway
- Installation of On Premise Enterprise Gateway
- Setting Up a Gateway in Power BI Service
- Understanding Data Refresh(Manual vs Scheduled Refresh)
- Troubleshooting Refreshing scenarios

❖ **Best practices**

❖ **Projects / Case Study**

