# APEC

*transforming careers...*

# DATA ANALYTICS

MS_ Excel + Sql Server + Power BI + Python

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## Basic Excel

**Introduction to Excel**
- Worksheets, Workbooks
- Cell, Column, Row, Range
- Entering / Editing data
- Copying / Moving data
- Reposition the data in cell
- Wrap text in a cell
- Merge cells
- Move or copy
  - cells / cell contents
- Copy specific cell contents
- Cell borders, Cell shading
- Text color, Text Formatting
- Gridlines, Sheet Background
- Selecting the cells
- Navigation in the worksheet
- Organizing the sheets
- Entering & Formatting Titles
- Worksheet calculations
- Formatting Rows/Columns
- Hide Columns/Rows/Sheets
- Cell Alignment, Font styles
- Cell Formatting, Cell Styles
- Cell Referencing
- Row Height, Column Width
- Find, Replace, Goto
- Conditional Formatting
- Format as Table
- Number Series, Fill Handle
- Adding Formulas
- Formula bar
- Status bar
- Functions
  - Math, Text, Date, Time
- Logical functions
- IF function
- Add Pictures/Shapes
- WordArt
- Smart Art graphic
- Screenshot
- Create Table
- Sort Data
- Filter Data
- Page Layout, Background
- Themes, Colors, Effects
- Margins, Size, Orientation
- Page breaks, Page scaling
- Print setup
- Print area, Print titles
- Gridlines, Headings
- Creating Graphs/Charts
- Types of Charts , Insert Text Box
- Header & Footer , Insert Object / Symbol
- Data Sort / Filter , Data Validation
- Macros - Record, Execute, Add Header & Footer
- Workbook Views - types , Freeze /Unfreeze panes
- Create Payrolls/Tables, Keyboard shortcuts

## Advanced Excel

- Add Smart Art objects
- Align objects, Themes
- Objects - Group / Arrange
- Absolute Cell Referencing
- Calculation options
- Insert Page breaks
- Paste Links, Paste Special
- Working with Comments
- Lookup functions
- Reference functions
- VLookup, HLookup
 -Sheet to Sheet
 -Sheet to Workbook
 -Workbook to Workbook
- SumIF, CountIF
- CountBlank
- Index, Match, Transpose
- Find, Search
- Replace, Substitute
- Naming Range , Name box
- Name Manager , Enhancing Chart Titles
- Changing colors of Data bars
- Rotating Charts
- Sparklines , Slicer
- Signature Line
- Filter data
  - Text, Number, Date, Color
- Advanced filter
- Custom List
- Custom Sort
- Get External Data
  - from Access, Notepad
- Text to Columns
- Remove Duplicates
- Data Consolidation
- Pivot table
  - Sort data, Filter data
  - Refresh Pivot table data
- Pivot chart, Data Subtotal
- What-if Analysis, Scenarios
- Scenario Manager • Goal Seek, Data Table
- Formula Auditing  • Excel Options
- Protect Workbook/Sheet
- Share Workbook  • Save Workspace
- Export Excel tables to Word
- Reporting using Excel
  - Financial statements
  - Sales / Purchase Report
  - Product Report
  - Summary Report
  - Business Reports
  - Academic Reports
- OTHER USES OF EXCEL
  - Calendar
  - Gantt Chart
  - Meeting Agenda
  - Invoices

# Ms_Sql Server

## Concepts of DBMS
- Data / Information / Database
- Introduction to DBMS
- Data Models
- HDBMS, NDBMS, RDBMS, ORDBMS
- Entity–Relationship (E-R), Normalization

## Introduction to SQL Server
- Advantages & limitations
- Login & Password
- Server Type & Server Name
- Authentication Modes - SQL Server, Windows
- SQL Server Management Studio & Tools
- Object Explorer, Query Editor

## Introduction To SQL
- Types of SQL Commands, Data Types
- DDL, DML, DQL, DCL, TCL
- Database - Creating / Altering / Deleting
- Create / Alter / Drop Tables

## Table Constraints
- Not Null, Unique, Default & Check
- Primary Key, Referential Integrity or foreign key

## Data Manipulation Language (DML)
- Insert / Update / Delete
- Truncate & Drop
- Create a Table From Another Table
- Insert Rows From One Table To Another

## Data Query Language (DQL)
- Simple Select, Select with row filters
- Where clause with relational operators
- Logical operators & Special operators
- Between … and, In, Like, Is Null, Isnull()
- Order By Clause, Distinct Keyword Column aliases

## Transaction Management
- User & Server schema, Implicit Transactions
- Begin / Commit / Rollback / Save Transaction
- Role of Log File In Transaction Management

## Built In Functions
- Numeric/Character/Date/Conversion/Identity
- Aggregate Functions sum(), avg(), etc.
- Group By & Having Clauses
- Ranking Functions & Top Clause

## Set Operators
- Union, Union all ,Intersect & Except

## Joins
- Simple, Equi / Non-Equi,
  Natural, Self, Inner, Outer, Cross or Cartesian

## Sub Queries
- Single / Multi Row, Any, Some,
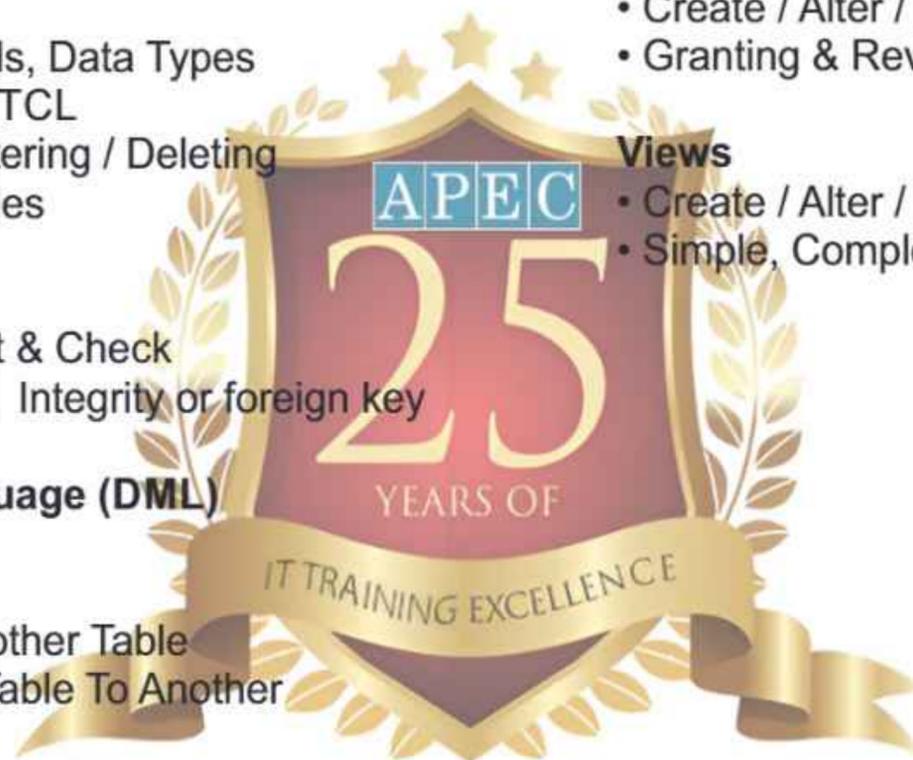  ALL, Exists & Not Exists, Nested

## indexes
- Create, Alter & Drop
- Composite / Clustered
- Performance variation

## DBA Activities
- Authenticted Login - SQL Server/Windows
- Create / Alter / Drop users
- Granting & Revoking Permissions

## Views
- Create / Alter / Drop Views
- Simple, Complex, Indexed & Partition views

# POWER BI

## Introduction to Business Intelligence
• What is BI and how is it important to businesses?
• Why is it important now?
• BI Lifecycle
• Types of BI tools available
• Types of Analytical Data Model Designs

## Intro to Power BI
• What is Microsoft Power BI
• History
• Architecture
• Features
• Building Blocks of Power BI
• Tools of Power BI

## Getting Started Power BI Desktop
• Installation of Power BI Desktop
• Introduction to the application
• Loading data into Power BI
• Panes and Tabs available in Power BI Desktop
• Available Data Types
• Relationships
• Normalization Rules

## Data Modeling with Power BI
• What is Data Modeling
• Types of Data Modeling
• Choosing the right Schema

## Data Transformation with Power Query Editor
• Introduction to Power Query Editor
• Basic Data Transformations
• Configuring the Data Sources
• Conditional Column Splitting
• Group By and Advanced Group By
• Merge and Append Queries
• Combining files
• Advanced Data Transformations
• Transpose • Pivot and Unpivot • Fill
• Text field Formatting • Text Parsing
• Extracting new features from Text
• Performing Statistical, Mathematical, Trigonometric Operations
• Date and time functions
• Structured Column Operations
• Running Custom Python/R Scripts

## Creating columns from examples, custom functions
• Creating Conditional Columns
• Understanding more with insights about the data by Previewing the data
• Plot the Dependencies
• Advanced Editor and its importance
• Using Parameters in M-Language for dynamic data filtering

## DAX
• Measure vs Column vs Table
• Commonly used DAX functions for
• Filtering the data • Aggregation
• Performing Data and Time Operations
• Performing Logical Operations
• Trigonometric, Math and Statistical functions
• Extracting Information • Text Operations

## Visualization
• Understanding the need to Visualize Data
• Why choosing the right Visual is important
• Types of Visuals available
• Formatting the Visuals • Custom Visuals

## Improving the Report Look and Capabilities
• Intro to View in Power BI Desktop
• Customizing the Report for Power BI Mobile
• Understanding Bookmarks and importance
• Significance of Selection Pane
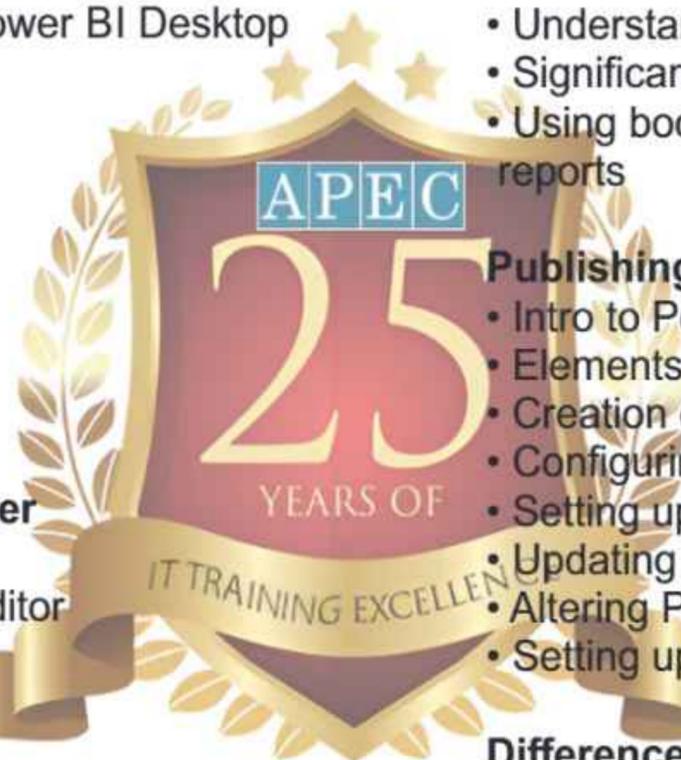• Using bookmarks to create user-friendly reports

## Publishing the Report
• Intro to Power BI Service
• Elements of Power BI Service
• Creation of Workspace and Content apps
• Configuring Row-Level Security
• Setting up Gateways
• Updating Data Source Credentials
• Altering Parameters
• Setting up Schedule Refresh –

## Differences in Refresh periods
• Assigning roles to Users
• Sharing the report with Users
• Managing User Permissions
• Building Dashboards from Reports
Bonus
• Real-time problems faced by Business Intelligence Analysts
• Power BI Visualization tricks to impress businesses

## End Project
• Solve a real-time business problem by creating a report from User Stories at the end of the course and assess your learning

## CORE PYTHON

### Python Overview
- What is Python?
- The Birth of Python
- History
- Features
- Versions
- Applications of Python The Python Environment
- Installation of Python
- Python Documentation
- Getting Help • How to develop python applications
- Python Editors and IDE's
- Basic Syntax • Running a Python Script
- Getting Started
- Variables, assign values to variables
- Multiple assignments
- Space Indentation
- Quotes, Comments
- Print( ),Type( ), Id( ) • Functions Input( )
- Raw input() functions
- How to read the data from keyboard
- Type conversions • Number systems
- Mutable and Immutable Object

### String Handling
- What is String?
- Single-quoted string literals
- Triple-quoted string literals
- String Indexing, String Slicing
- String Functions • String Methods Operators
- Assignment operators
- Short Hand Assignment  operators
- Bitwise Operators • Membership Operators
- Looping Statements - while, for, infinite, nested
- Break

### FLOW CONTROL
- Conditional Statements –
  Simple if, if…else, if…elsif…
- Looping Statements - while, for, infinite, nested
- Break • Continue • Pass

### SEQUENCES
- Creating list
- Accessing/deleting/updating  list elements
- Indexing  • Slicing and matrix
- List comprehension
- Tuples: what is tuple, creating
- Accessing/deleting/updating tuple elements
- Indexing, slicing and matrix
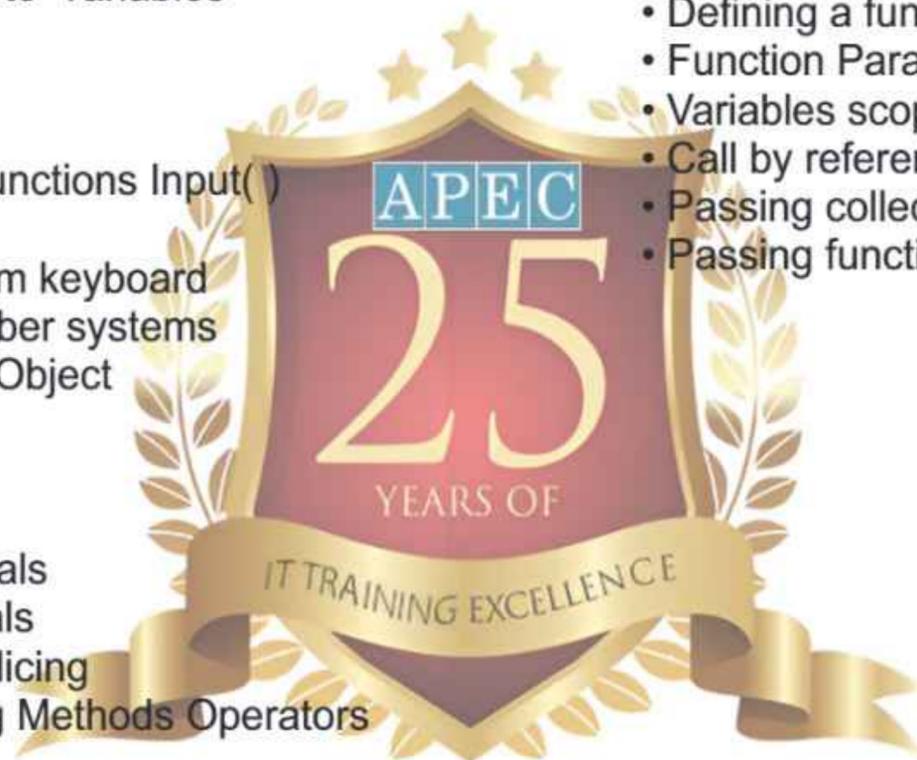- Built-in tuple functions and methods

### DICTIONARIES & SETS
- Set: what is Set, creating Set
- Built-in set functions • Built-in methods

### DICTIONARY
- Creating dictionary
- Accessing/deleting/updating dictionary elements
- Working with built-in dictionary
- Functions and methods
- Dictionary comprehension

### FUNCTIONS
- Defining a function  • Calling a function
- Function Parameters • Returning Values
- Variables scope  • Call by value
- Call by reference • Lambda function
- Passing collections to a function
- Passing functions to function

# ADV PYTHON

## MODULES
- What is a module?
- Creating user defined module
- Setting path • The import statement
- Module search path • From … Import
- Module Aliases • Dir function
- Working with Standard modules
  - Math, Random -Date and time  -Os & sys,

## ERRORS & EXCEPTION HANDLING
- Syntax Errors • What is Exception?
- Need of Exception handling
- Predefined Exceptions • Hierarchy
- Except, try, finally clause
- Handling Multiple Exceptions
- User defined Exceptions• Raise
- Assert statements

## FILE HANDLING
- Opening a file
- Closing a file
- Tell()
- Seek()
- Writing and  Reading a data from file's

## OOPS CONCEPTS
- About OO programming
- Defining Classes
- Creating object
- Class methods and data
- Static methods
- Private methods
- Constructors
- Destructors
- Inheritance
- Types of inheritances
- Polymorphism
- Over loading & over riding • Data hiding

## REGULAR EXPRESSIONS
- What is regular expression?
- Wild card characters • Greedy matches
- Forming regular expressions
- Character classes • Quantifiers
- Grouping, Match, Search functions
- Matching v/s searching
- Sub function splitting a string
- Replacing text
- Flags

## MULTI THREADING
- Defining / Starting a thread
- Threading module
- Threads synchronization
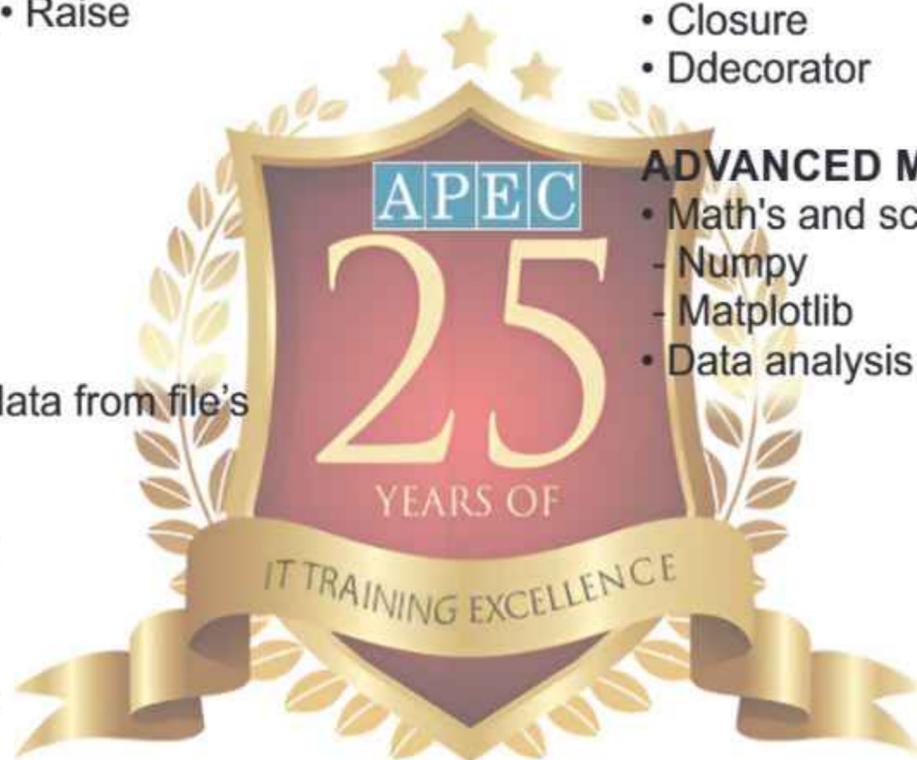- Multithreaded priority queue

## DATABASE ACCESS
- Basics of database
- Connections
- Executing queries
- Transaction management

## ADVANCED CONCEPTS
- Iterators
- Generators
- Closure
- Ddecorator

## ADVANCED MODULES
- Math's and sciences
  - Numpy
  - Matplotlib
- Data analysis (pandas)

aws

**JAVA / PYTHON / .NET**
# FULL STACK

DEV OPS

## DATA SCIENCE

python

**A Azure**
(ADMIN, DEVOPS & DATA ENGINEERING)

**DIGITAL MARKETING**

React

**A NGULAR**

**Power BI**

**WEB DESIGNING**
**WEB DEVLOPMENT**

node js

**Ui Path**

Office
W X O P

Advanced
**X Excel**
Training

**GRAPHIC DESIGN**
MASTERCLASS
Ai Ps Id

*Tally*
POWER OF SIMPLICITY
**Tally Prime**

HARDWARE &
NETWORKING

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