VINAY TECH

Data Analytics

● Power BI ● Advanced Excel ● SQL Server ● Python

- 👤 **Sessions from Industry Experts**
- ⏱ **90 hrs, Daily 1 hour**
- 🎬 **Daily Class Videos Shared**
- 💰 **Rs. 20,000 (Online / Offline)**
- 📅 **Multiple Batches Available**

MODULE	DURATION	FEE	WHA YOU'LL LEARN
Power BI	30 days	--------	Reports, Dashboards, KPIs, Modelling, DAX
Excel	20 days	--------	Basics to Advanced, Excel Analytics
SQL Server	20 days	--------	Querying databases, Important SQL constructs
Python	20 days	--------	Data handling, pandas, matplotlib, automation
TOTAL	90 days	₹20,000	💥 Master Data Analytics 💥

TYPES OF DATA ANALYTICS

GROWTH MARKET

Descriptive

What happened?

Diagnostic

Why did it happen?

Predictive

What will happen?

Prescriptive

How can we make it happen?

DATA ANALYTICS TYPES

Introduction to Excel

▸ A description of the interface
▸ The menu system
▸ The fundamentals of spreadsheets

Personalizing Excel

▸ Changing Excel's Default Options Using AutoCorrect and Customizing It
▸ Customizing the Ribbon

Functions

▸ Using Functions — Sum, Average, Max, Min, Count....
▸ Absolute, Mixed, and Relative Referencing

Arithmetic Functions

▸ SumIf, SumIfs CountIf, CountIfs AverageIf, AverageIfs

Text Functions

▸ Upper, Lower, Proper
▸ Left, Mid, Right
▸ Trim, Len, Exact
▸ Concatenate
▸ Find, Substitute

Proofing and Formatting

▸ Formatting Cells with Number formats, Font formats, Alignment, Borders, etc
▸ Basic conditional formatting

Protecting Excel- Excel Security

▸ File Level Protection
▸ Workbook, Worksheet Protection

Printing Workbooks

▶ Setting Up Print Area
▶ Customizing Headers & Footers
▶ Designing the structure of a template
▶ Print Titles -Repeat Rows / Columns

Advance Paste Special Techniques

▶ Paste Formulas, Paste Formats
▶ Transpose Tables
▶ Paste Validations

Time and Date Functions

▶ Today, Now
▶ Date, Date if, DateAdd

▶ Day, Month, Year
▶ Month, Weekday

New in Excel 2013 / 2016 & 365

▶ New Charts — Tree map & Waterfall
▶ Combo Charts — Secondary Axis
▶ Sunburst, Box, and whisker Charts
▶ Using Power Map and Power View
▶ Adding Slicers Tool in Pivot & Tables
▶ Sparklines -Line, Column & Win/ Loss
▶ Forecast Sheet
▶ Smart Lookup and manage Store
▶ New Controls in Pivot Table — Field, Items, and Sets
▶ Using 3-D Map
▶ Auto complete a data range and list
▶ Various Time Lines in Pivot Table
▶ Quick Analysis Tool

Filtering and Sorting

▶ Filtering on Text, Numbers & Colors
▶ Sorting Options
▶ Advanced Filters on 15-20 different criteria(s)

Printing Workbooks

▶ Setting Up Print Area
▶ Print Titles -Repeat Rows / Columns
▶ Designing the structure of a template
▶ Customizing Headers & Footers

What-If Analysis

▶ Goal Seek
▶ Data Tables (PMT Function)
▶ Solver Tool
▶ Scenario Analysis

Data Validation

▶ Number, Date & Time Validation
▶ Dynamic Dropdown List Creation using Data Validation -— Dependency List
▶ Custom validations based on a formula for a cell
▶ Text and List Validation

Logical Analysis

▶ If Function
▶ Complex if and or functions
▶ Nested If
▶ How to Fix Errors — iferror

Arrays Functions

▶ What are the Array Formulas, Use of the Array Formulas?
▶ Array with if, len, and mid functions formulas.
▶ Basic Examples of Arrays (Using ctrl+shifttenter).
▶ Advanced Use of formulas with Array.
▶ Array with Lookup functions

Lookup Functions

▶ Vlookup / HLookup
▶ Vlookup with Helper Columns
▶ Creating Smooth User Interface
▶ Index and Match
▶ Reverse Lookup using Choose Function
▶ Nested VLookup
▶ Worksheet linking using Indirect

Pivot Tables

▶ Creating Simple Pivot Tables
▶ Classic Pivot table
▶ Basic and Advanced Value Field Setting
▶ Calculated Field & Calculated Items
▶ Grouping based on numbers and Dates

Slicers and Charts

▶ Using SLICERS, Filter data with Slicers
▶ Various Charts i.e. Bar Charts / Pie Charts / Line Charts
▶ Manage Primary and Secondary Axis

Excel Dashboard

▶ Planning a Dashboard
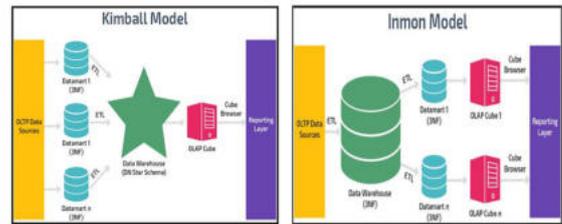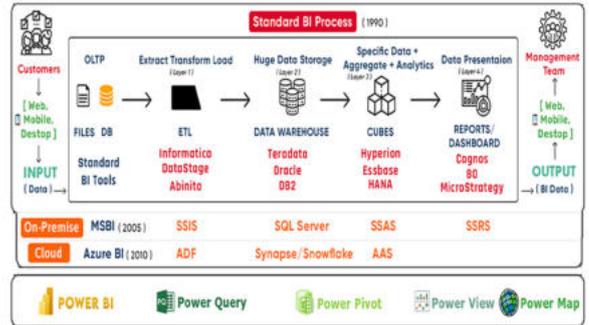▶ Adding Dynamic Contents to Dashboard
▶ Adding Tables and Charts to Dashboard

MANDATORY TOPIC 1: POWER BI DEMO & DATA WAREHOUSE FUNDAMENTALS

◉ **Power BI Demo content**
▸ Data, Data Availability types in IT
▸ IT data storage areas [File stream, Database]
▸ Data warehouse, BI definitions and layers
▸ Power BI existence in IT, Product services
▸ Power BI Tools and Components
▸ On-Premise vs. Cloud
▸ OLAP vs. OLTP vs. Insights and Analytics

◉ **Data warehouse Fundamentals**
▸ Data warehouse, Data mart and differences
▸ Types of data marts and real-time usage
▸ DWH Life Cycles, DWH principles
▸ DWH Approaches (INMON and KIMBALL)
▸ Data Granularity, Data movement stages

MANDATORY TOPIC 2: DATA MODEL THEORY AND PRACTICAL

◉ **[Theory and detailed practical with real-scenarios]**
▸ Data model, use of data model in Power BI
▸ Business, Conceptual, Logical, Physical models
▸ Dimension, Dimension table & types
   (Conformed, Roleplay, Degenerated, Junk, SCD)
▸ Measures & Types
   (fully additive, semi additive, non additive)
▸ Fact table & Types
   (Snapshot, Incremental, Factless fact)
▸ Schemas (Star, Snow Flake, Galaxy & Hybrid)
▸ Surrogate key and usages in real time
▸ 1:1, 1: Many, Many: Many relationships
▸ Active, Inactive relationships
▸ Single and Bi-directional, Cross filter
▸ Advanced properties of fields
   (sort order, date category, aggregators)
▸ Snow Flake schema exmaples

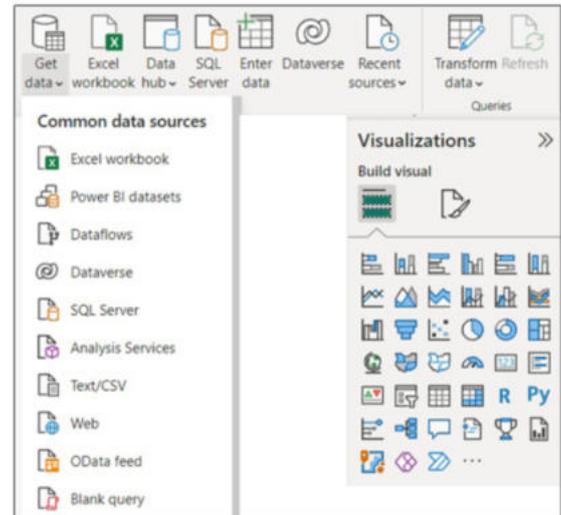## TOPIC 1: INSTALLATION [POWER BI DESKTOP, GATEWAY, SERVER, REPORT BUILDER & DAX STUDIO]

▸ Power BI Cloud / Report Server Desktop installation
▸ DAX Studio installation, Gateway Installation
▸ Report Server Installation
▸ Paginated Report Builder Installation

TOPIC 2: WORKING WITH POWER BI DESKTOP AND CONNECTING TO MULTIPLE DATA SOURCES

◉ **[Theory and Complete Practical]**

▸ Desktop over view and building blocks of PBI Desktop
▸ Connecting to various sources and retrieving data
  1. Flat, CSV, JSON, Excel files
  2. Databases (SQL Server & Oracle)
  3. Web
  4. Multiple files load at a time
  5. Azure SQL database and DWH
  6. Analysis Services Models
  (Tabular & ulti-dimensional)
  7. Python Script
  8. M-Retrieval

TOPIC 3: WORKING WITH DATABASES, CUBES, MODES & CHANGING MODES

▸ Working on data modes[very detailed]
  a)Import b)Direct Query c)Connect Live d) Mixed mode e) Chanding modes
▸ Differences between Load and Edit options.
▸ Retrive date from related data bases and cube

TOPIC 4: WORKNG ON POWER BI DESKTOP COMPONENTS

▸ Power Query, Power Pivot, Power View, Power Map

TOPIC 5: POWER VIEW MENU TAB OPTIONS–RIBBON OPTIONS & REAL-TIME

◉ **File Tab [All options-Detailed Practical]**

  a)New, Open, Save report
  b)Export **Power BI Template** (PBIT), PDF
  c)Import Power BI Template, Power Query, View, Model, Visual files
  d)Options and Settings & About

◉ **Home Tab [All options- Detailed Practical]**

  a)External Data:
      Get Data, Recent Sources, Enter Data
  b) Transform data & edit parameters
  c) Publishing to cloud service
  d) Prop data AI (2025)
  e) Quick sources f) Sensitivity

◉ **View Tab [All options -Detailed Practical]**

▸ Report **Phone Layout** / Desktop View Show Gridlines, Snap Objects to Grid Locking Objects on the surface
▸ **Bookmarks** creation, viewing, & using in Dashboard Selection Pane [Hiding and showing objects]
▸ **Slicer and Sync Slicers** explanation with practical Performance analyzer test run
▸ **Scale to fit:** Page view, **Mobile:** Mobile layout, Page options
▸ **Show panes:** Filters, Bookmarks, Selection, Performance Analyzer, Sync slicers

◉ **Insert Tab** [All options - Detailed Practical]

▸ **Visuals:** New Page, New Visual, More Visuals
▸ **AI Visuals:** Key Influencers, Decomposition Tree, Smart Narrative, Q & A
▸ **Elements:** Text box, Buttons, Shapes, Image
▸ **Power Platform:** Paginated Report, Power Apps, Power Automate
▸ **Sparklines:** Add a Sparkline

◉ **Format Tab** [All options-Detailed Practical]

a) Edit interactions for the visual for **cross highlighting, cross filtering**, and none options.

b) Bring forward, send backward etc... visual option **(Z-Order)**

◉ **Data / Drill Tab** [All options-Detailed Practical]

a) Drill down report creation
b) Drill one level down, multiple levels, & data drill
c) Visual table, Data point table

◉ **Modeling Tab** [All options-Detailed Practical]

a) **Relationships:** Manage Relationsips
b) Create roles and implement **row-level security** & **dynamic row-level security**
Page Refresh: Change detection
Parameters: New parameter
Security: Manage roles, View as
Calculations: New measure, Quick measure, New column, New table
Q & A: Language, Lunguistic Schema

◉ **HELP Tab** [All options-Detailed Practical]

a) Guided learning, documentation, training videos, **blogs, communities**, Power BI for developers, **support** and consulting services
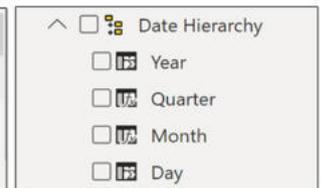
◉ **External tools tab**

DAX studio

◉ **Optimize tab (2024)**
Refresh, Pause, Preset, Optimization

TOPIC 6: POWER BI DATASET PROPERTIES

▸ Create hierarchies and analyzing data
▸ Create Groups (List, Bin)
▸ Hide / Unhide columns usage in real-time
▸ Consider table as Date Table
▸ Expand and collapse columns
▸ Incremental refresh & manage aggregations

	grp_bin count_DiscountValue
	grp_bin size_Actual_Fee
	grp_CourseID
	grp_list_Actual_Fee

∧ □ Date Hierarchy
□ Year
□ Quarter
□ Month
□ Day

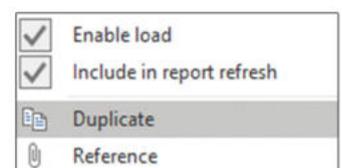## TOPIC 7: POWER QUERY PROPERTIES [8 types of properties and M-Language]

◉ **Queries properties** [All options –Detailed Practical]

a) Practical on duplicates & references
b) Create groups to classify tables
c) Refreshing table data, Creating reusable functions

◉ **Query Properties**

a) Data transformations by adding, removing & retaining columns, duplicates, error
b) Working on reusable functions
c) Merging & Joining multiple queries

Copy
Paste
Delete
Rename

✓ Enable load
✓ Include in report refresh
Duplicate
Reference

->

◉ Column Properties

Data types, types of transforms
- Numeric, text, date tranforms

◉ Filter properties

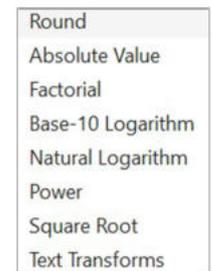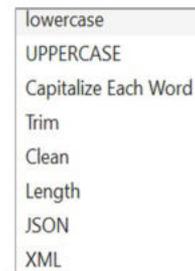- Numeric, text & date tranforms
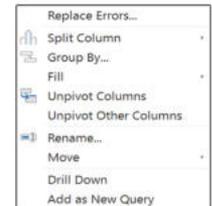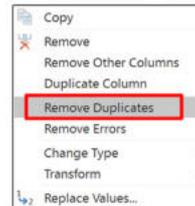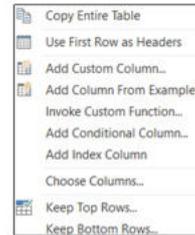
◉ Parameters properties

Working on Any, List & Query parameters
Working on multiple & cascading parameters

◉ Miscellaneous Transformations

Transpose rows, reverse rows, Pivot & Unpivot
Quality Transforms [profiling, quality, distribution]

◉ Mash up (M) language

Syntax, protocols, variables & conventions
Let, In, semicolon, and other functions

| Copy Entire Table |
| Use First Row as Headers |
| Add Custom Column... |
| Add Column From Examples... |
| Invoke Custom Function... |
| Add Conditional Column... |
| Add Index Column |
| Choose Columns... |
| Keep Top Rows... |
| Keep Bottom Rows... |

| Keep Range of Rows... |
| Keep Duplicates |
| Keep Errors |
| Remove Top Rows... |
| Remove Bottom Rows... |
| Remove Alternate Rows... |
| Remove Duplicates |
| Remove Errors |
| Merge Queries... |
| Append Queries... |

| Copy |
| Remove |
| Remove Other Columns |
| Duplicate Column |
| Remove Duplicates |
| Remove Errors |
| Change Type |
| Transform |
| Replace Values... |

| Replace Errors... |
| Split Column |
| Group By... |
| Fill |
| Unpivot Columns |
| Unpivot Other Columns |
| Rename... |
| Move |
| Drill Down |
| Add as New Query |

| lowercase |
| UPPERCASE |
| Capitalize Each Word |
| Trim |
| Clean |
| Length |
| JSON |
| XML |

| Round |
| Absolute Value |
| Factorial |
| Base-10 Logarithm |
| Natural Logarithm |
| Power |
| Square Root |
| Text Transforms |

TOPIC 8: POWER BI VIEWS, FILTERS, VISUALS AND VISUAL FORMATING OPTIONS

◉ Types of views in PBI Desktop

a) Report b) Data c) Relationship d) DAX Query

◉ Working with different level of filters

a) Visualization b) Page c) Report

◉ Data Display Visuals

Card, Multi-row, Table, Matrix, New -card (2024)

◉ Simple KPI visuals

KPI, Gauge, Bullet Chart

◉ More categories visuals

Charts
Rounded charts : Pie, donut
Bar: Stacked, Clustered, 100% Stacked
Trend: Line, Area, Stacked Area, Ribbon, Mixed, Treemap,
        Funnel, Scatter, Waterfall
Maps (Bubble, Filled, Shape, ARCGis, Azure map 2024)
AI Visuals: Key-influencer, De-composition, Smart Narrative, QA
Others: Sparklines, Metric, Paginated Report, R, Python

◉ Custom Visuals

a) Bullet Chart b) Chiclet Slicer c) Hierarchy Slicer
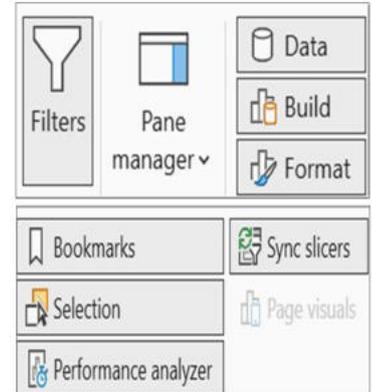   d) Gantt Chart e) Histogram Chart f) Dual KPI g) Scroller

Build visual

Report view
Table view
Relationship view
DAX Query view

->

Non field visuals

a) Image b) Textbox c) Shapes d) Button actions
Actions: Bookmark, page navigation, back , QA,
URL, apply slicers & clear slicers

Visual Interactions

a) Slicers: types, usages, sync slicer
b) Filers & types
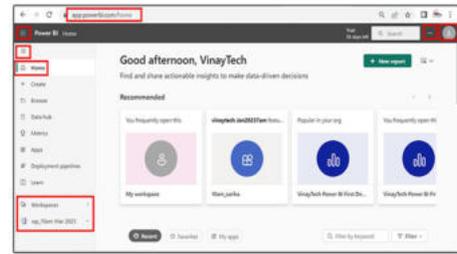c) Edit Interactions
d) Parameters & What-if parameters

TOPIC 9: POWER BI CLOUD SERVICE (app.powerbi.com)

WEB PORTAL NAVIGATIONS

1) Navigation pane, Portal URL
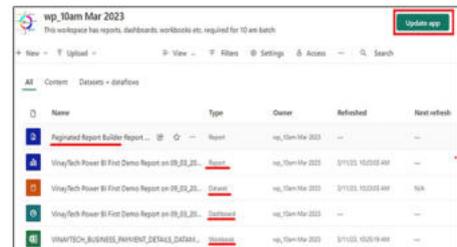2) App Launcher, Settings, Help & Support
3) Feedback, Account Information

WORKSPACES

▶ My workspace and properties
▶ User app workspaces and properties
▶ Workspace Settings and Roles
▶ Workspace Access

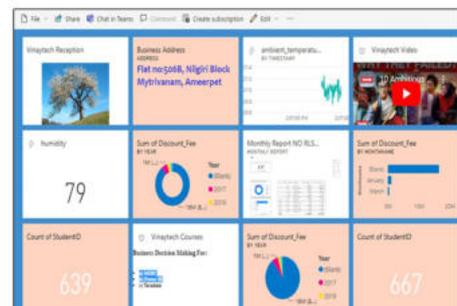## DASH BOARD TEMPLATE

▶ Create dashboards
▶ Add the below tiles
Image, Textboc, Video, Streaming,
Live page, Visual, Bookmark, Workbook,
Insight, Usage metrics
▶ Share and Subscribe dash board
▶ Refresh Dashboard
▶ Manage Alerts

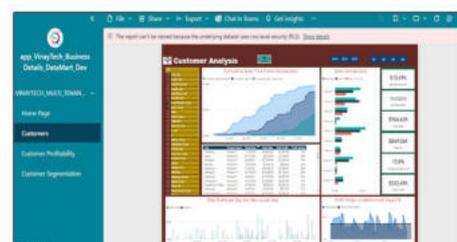## APP WORKSPACES (or) CONTENT PACK

▶ Create, modify, and delete appspace
▶ Add content (show or hide)
▶ Audience (organization or users)
▶ Additional Settings (copy, build)
▶ Publish and Update app
▶ Browse App in Web, Desktop and Mobile
▶ END USER EXPERIENCE PROVIDED

Report Server (On-Premise) operations

▶ Report Server Desktop and
Report Server install and practice.

TOPIC 10: DAX - The below are the DAX categories, a few important functions covered for 6-7 hours

DAX Language General Topics & Advanced
- Syntax and usage
- Naming conventions, parameters
- Operators, functions (15 categories)
- **Context transition (row, column, filter, multi-row)**
- DAX Queries, DAX Studio and SSMS
- DAX FAQS, Optimization & Standards

DAX Functions [Very Detailed Practice]
- Good material provided for all the functions
  a) Date b) Filter c) Math & Trig d) Statistical
  e) Table Manipulated f) Informational
  g) Relationship h) Logical i) Parent Child
  j) Time Intelligence j) INFO Function
  h) Windows Functions (2022 Dec)
  i) NEW Functions (2024)
  Statements: Evaluate, Define, Var, Order By

DATE FUNCTIONS
- Calendar, Calendarauto, Day, Month, Year YearFrac, Date, Time, DateValue, TimeValue, Edate, EOMonth, Weekday, WeekOfMonth Today, UTCToday, Now, UTCNow, DateDiff

TIME INTELLIGENCE FUNCTIONS
- DatesBetween, DatesInPeriod, ClosingBalanceofmonth, Quarter, Year OpeningBalanceOfMonth, Quater, Year Datesytd, Datesqtd, Datesmtd, Totalqtd, Totalmtd, Totalytd ,FirstDate, LastDate, FirstNonBlankDate, Lastnonblankdate, NextDay, NextMonth, NextYuarter, NextYear, ParallelPeriod, SamePeriodLastYear, PreviousDay, PreviousMonth, Quarter, Year StartOfMonth, Quarter Year

LOGICAL FUNCTIONS
- And, Or, Not, Iferror, If, Switch, In, True , False, Coalesce

PARENT & CHILD FUNCTIONS
- Path, Pathlength, Pathcontains, Pathreverse, PathItem

INFO FUNCTIONS
- INFO- View.Measures, View.Columns, View.Tables

WINDOWS FUNCTIONS (2022)
- Index, Offset, Partition, Window

FILTER FUNCTIONS
- Addmissingitems, Filter, Filters,Distinct, Values, Countrows, All, Allexcept, Earlier, Earliest, KeepFilters, Remove filters, Calculate, Calculatetable, AllSelected, AllNoBlankRow

RELATIONSHIP FUNCTIONS
- Related, Relatedtable, UseRelationship, Crossfilter, ContainsStringExact

INFORMATION FUNCTIONS
- ContainsRow, Contains, ContainsString, Iseven, Isodd, Istext, UserName, UserPricipalName, LookUpValue, IsError, IsNonText, IsNumber, IsLogical, Isinscope, Isonorafter,Hasonefilter, IsCrossFiltered

AGGREGATE FUNCTIONS
- Sum, Sumx, Average, AverageX, AverageA, Max,MaxX,MaxA, Min, Minx,MinA,Count, CountX, CountA, CountBlank, DistantCount, DistantCountNoBlank, Product, ProductX, Courtrows, Approximate, Distinctcount

MATH AND TRIG FUNCTIONS
- Round, MRound, Roundup, Rounddown, Rand, RandBetween , Sqrt, Trunc, In, Ceiling, Floor, Gcd, Lcd, Exp, Fact, Even, Odd, ABS, Convert, Currency, Sign

STATISTICAL FUNCTIONS
- Permut, Rank.eq, Rankx, Sampl, Statistical data, Operation functions
  MORE DA STATICAL FUNCTIONS COVERED

TABLE MANIPULATION FUNCTIONS
- AddColumns, AddMissingItems, CrossJoin, CurrentGroup, DataTable, DetailRows, DistinctColumn, DistinctTable, Except,Filters, Generate, GenerateSeries, Groupby, DataTable, Except, Intersect, Union, Symmarize, Summarizecolumn, GenerateSeries, NaturalInnerJoin, NaturalLeftOuterJoin, Crossjoin, Treatas, Isempty, Row SelectColumns, Values,

TEXTUAL FUNCTIONS
- Blank, Code,Unichar,Concatenate, Combinevalues, Cacatinatex, Trim, Rept, Replace, Substitute, Find, Search, Format, Mid, Left, Right, Value, Upper, Lower

NEW FUNCTIONS (2024)
- First, Last, Previous, Next, Rank, Rownumber, Lineast, Match

MANDATORY Topic 1: DATA, DATABASE AND DATAWAREHOUSE FUNDAMENTAL

◉ **Data and Database Fundamentals**
▸ Data, Data Availability types in IT
▸ Database, Data Warehouse, and RDBMS
▸ Data storage areas [structured, semi and unstructured
▸ RDBMS real-time projects and areas
▸ Components of RDBMS
▸ Normalized and de-normalized databases [BI and non-BI]
▸ SQL Versus T-SQL [MS SQL]
▸ Other popular database in IT [ORACLE and TERADATA] and differences
▸ SQL Server Job Market and Opportunities
▸ Power BI History, releases and blogs

◉ **Data warehouse Fundamentals**
▸ Data warehouse, Data Mart and differences
▸ Types of data marts and real-time usage
▸ ODS, Stage, EDW, and DW definitions
▸ Data Lake and Blob Storages
▸ DWH Life Cycles
▸ Data Granularity, Data movement stages

TOPIC 1: INSTALLATION [SQL Server Instance, Editions, Databases, and Tables]

▸ Installing SQL Server Instance and multiple Instances
▸ SSMS Installation, Azure Data Studio, SQL Developer and Operations Studio
▸ SQL Server Service Starting
▸ Server name or Instance name & authentication
▸ Versions and Editions in SQL Server
▸ Connections [Local and Remote]
▸ Editions of SQL Server - Enterprise Edition, Standard Edition, Developer Edition, Work Group Edition, Express Edition

TOPIC 2: DATABASES AND TABLES

▸ System Defined Databases & usages - Master, MSDB, TEMPDB and others real-time usage
▸ User defined databases and usages
▸ Database creation GUI and Code [MDF & LDF files]
▸ Differences between command and query
▸ Query and command execution in SQL Server
▸ Parser, Compiler, Syntaxer, Optimizer, and CLRA
▸ Storage Engine [SQL Engine]

TOPIC 2: SQL SUB LANGUAGES

▸ SQL Server Data Definition Language [DDL]
▸ SQL Server Data Manipulation Language [DML]
▸ SQL Server Data Control Language [DCL]
▸ SQL Server Transaction Dictionary Language [TCL]
▸ SQL Server Data Retrieval Language [DRL]

TOPIC 3: DML [DATA MANIPULATION LANGUAGE]

▸ Inserting data into table [SELECT, INSERT and SELECT]
▸ Single Insert and Multiple Inserts
▸ Modifying table data [UPDATE]
▸ Removing table data [DELETE]
▸ BULK INSERT and BCP [Bulk Copy Program]
▸ MERGE command operation and Incremental Load [SCD and CDC]
▸ SQL Server Data Types
▸ Insert table from another table

TOPIC 4: DCL [DATA CONTROL LANGUAGE]

▸ Providing privileges [GRANT]
▸ Removing privileges [REVOKE AND DENY]

TOPIC 5: TCL [TRANSACTION CONTROL LANGUAGE]

▸ Saving work [COMMIT]
▸ Restore work [ROLLBACK]
▸ Saving period of work [SAVEPOINT]

TOPIC 6: DRL [DATA RETRIEVAL LANGUAGE]

▸ Working on SELECT statement
▸ Working on WHERE, GROUP BY, HAVING, and ORDER BY
▸ Column and Table Aliases usage

TOPIC 7: DATA FILTERING CLAUSES

▸ =, !=, <>, >, <, <=, =< etc... comparison Operators
▸ AND, OR, NOT Logical operators
▸ +, -, *, / , Mod, Exp etc...Mathematical Operators
▸ Order By, Top, Where, From and Like
▸ Group by and Having
▸ IN, NOT IN, BETWEEN and NOT BETWEEN
▸ ISNULL and NOT ISNULL

TOPIC 8: MULTI TABLE OPERATIONS [COLUMN-WISE]

▸ Simple Sub Query
▸ Correlated Sub Query
▸ Differences between simple and correlated
▸ Nested Sub Query
▸ BULK INSERT and BCP [Bulk Copy Program]

TOPIC 9: MULTI TABLE OPERATIONS [ROW-WISE SET THEORY]

▸ Set theory generic protocols
▸ INTERSECT
▸ UNION
▸ UNION ALL
▸ EXCEPT
▸ Working on incremental loading

TOPIC 10: MULTI TABLE OPERATIONS [COLUMN WISE-JOINS]

▸ JOINS real time usage
▸ CROSS JOIN and CROSS APPLY
▸ INNER JOIN [EQUI, NON EQUI]
▸ NATURAL JOIN
▸ SELF JOIN
▸ INNER Vs. OUTER JOIN
▸ LEFT OUTER JOIN
▸ RIGHT OUTER JOIN
▸ FULL OUTER JOIN
▸ Working on ON and WHERE clauses
▸ MERGE JOIN
▸ LOOP JOIN
▸ HASH JOIN
▸ Unmatched data retrieval
▸ Incremental load in real time using Joins

TOPIC 11: BUSINESS DATA CONSTRAINTS AND DATA RULES

▸ CHECK, NOT NULL, AND DEFAULT – Domain Integrity
▸ Primary Key usage and limitations
▸ Unique Key usage and limitations
▸ Referential Integrity and FORGINE KEY
▸ Candidate key and Alternate key
▸ Normal column and Identity column
▸ Surrogate key and Identity column usage
▸ CASCADING OPTIONS
▸ ON UPDATE SET NULL, ON UPDATE SET NO ACTION(Default)
▸ ON DELETE CASCADE, ON UPDATE CASCADE, ON DELETE SET NULL,

TOPIC 12: INDEXS (BASICS-ADVANCED)

▶ Clustered Index Design and Structures
▶ Nonclustered Index Design and Structures
▶ Unique Index Design
▶ Index with Included Columns
▶ Column storage index
▶ Working on incremental loading
▶ Full-Text Index population
▶ Covering Index Design
▶ B-Tree and Online Indexes
▶ Indexed views Vs. Materialized views
▶ Fill Factor, TEMPDB, Pat_Index

TOPIC 13: SCHEMAS, SYNONYMS, SYSTEM DEFINED VIEWS AND PROCEDURES

▶ What is Schema? and real time advantages with practical.
▶ What is Synonym? and real time advantages with practical
▶ System Defined Procedures usage with examples
▶ sp_help, sp_helpdb, sp_helptext, sp_rename, sp_recompile, sp_tables
▶ System Defined Views usage with examples
▶ sys.tables sysjobactivity, sysssislog

TOPIC 14: DISTINCT, GROUP BY, ROLLUP, AND CUBE

▶ Differences between GROUP BY and DISTINCT and performance impact
▶ Differences between GROUP BY and DISTINCT and performance impact
▶ ROLLUP and CUBE usages
▶ Generating FULL TOTALS and SUB TOTALS
▶ Comparing ROLLUP, CUBE and GROUP functions

TOPIC 15: VIEWS (USER DEFINED)

▶ Advantages of Views in SQL
▶ Tables Vs. Views
▶ Simple View (Updatable View)
▶ Complex View (Non-Updatable View)
▶ Materialized View and real time usage
▶ Encrypted views Vs. Cascading views
▶ Limitations of Views

TOPIC 16: FUNCTIONS [SYSTEM, USER REFINED & ANALYTICAL]

▸ Date Functions - DATEADD, DATE DIFF, DATE PART, FLOOR, CEILING, GETUTCDATE, , GETDATE, CURRENT_TIMESTAMP, SYSDATETIME, DATE NAME, ISDATE, WEEKDAY, MONTHNAME, WEEKDAYNAME, SECOND, MINUTE, HOUR, ISDATE
▸ Other Generic Functions - COALESCE, NULL IF, CURRENT USER, IIF, COALESCE, NULL IF, CURRENT USER, IIF, SESSIONPROPERT, SYSTEM_USER, USER_NAME, FORMAT, INSTR, CONCAT
▸ Cast and Convert Functions
▸ IF, ELSE, CASE, WHEN & END
▸ PIVOT & UNPIVOT
▸ ANALYTICAL FUNCTIONS - ROW_NUMBER () and real time examples, RANK () and real time examples, DENSE RANK () and OVER () usages, NTILE advantage, PARTITION BY advantage, Using Group BY along with Analytical Partition
▸ User Defined Functions Create
▸ User Defined Functions Calling
▸ Differences between Function &Procedure

TOPIC 17: STORED PROCEDURES [USER DEFINED]

▸ Use in Real Time and Types
▸ What is Synonym? and real time advantages with practical
▸ System Defined Procedures usage with examples
▸ IN, OUT, INOUT Parameters
▸ Compare Procedures and Functions
▸ READONLY Parameters
▸ Dynamic Data Insertions with Procedures
▸ Table Variables, Cloning & Data Inserts
▸ Using TEMP tables in procedures
▸ Stored Procedure inside Stored Procedure
▸ Optimizing tips for procedure

TOPIC 18: DIFFERENT TYPES OF TABLES, VARIABLES, AND CTE

▸ Local variables vs Global variables with examples
▸ Local variables Vs. Temp variables and real time usage
▸ TEMPORARY table usages in real time
▸ Inline View Vs. Normal View
▸ CTE: Common Table Expressions
▸ CTE usage in real time
▸ Multiple examples using CTE
▸ ROW_NUMBER () with CTE Queries
▸ Recursive CTE

TOPIC 19: PROGRAMMING AND ERROR HANDLING INSTRUCTIONS

▸ IF, IIF, CASE
▸ Error Handling in T-SQL
▸ WHILE, WHEN
▸ Try, Catch, Throw

TOPIC 20: DYNAMIC SQL IMPLEMENTATION

▸ Creating Dynamic SELECT statement
▸ Passing dynamic table names
▸ Create a procedure with dynamic table names and variables
▸ Normal SQL Vs. Dynamic SQL

- What is Python
- What are the popular programming languages
- Why choose python over other programming languages
- How is python perfect for Data Analytics
- Job opportunities after completion of the python course
- Different types of IDEs used for Python programming
- Python Installation

Beginning Python Basics :

- The print statement
- Comments
- Keywords
- Operators
- Variables
- Data types
- Sequences, mutable and immutable objects
- Type casting
- String operations
- Indexing and Slicing
- Simple programs with user input

Conditional statements in Python :

- Indentation
- Simple if statement
- If else statement
- Elif statement
- Nested if condition
- One line if conditions or short hand if conditions

Collections or Data Structures :

- List
- Tuple
- Set
- Dictionary
- Nested collections
- Comprehension programming on Lists and Dictionaries
- Real time examples using Collections

Functions and Modules :

▶ Built in functions
▶ User defined functions
▶ Function with no arguments and no return value
▶ Function with arguments but no return value
▶ Types of arguments
▶ Local and global variables
▶ Recursive functions
▶ Lambda function
▶ Mapping, filter and reduce
▶ Built in modules
▶ User defined modules

Exception Handling :

▶ Types of Errors
▶ User defined functions
▶ Try, except, finally
▶ Raise

Regular Expressions :

▶ Findall
▶ Tuple
▶ Split
▶ Sub
▶ Regex Functions with meta characters

Text files in Python :

▶ Open(), read(), write(), close()
▶ Export data to text files

Object Oriented Programming :

- Basic concepts of OOP
- Difference between general programming and OOP
- Classes and Objects
- init () method
- Self parameter
- Single inheritance
- Multilevel inheritance
- Multiple inheritance
- Hierarchical inheritance
- Polymorphism

Data Analytics using Pandas Library :

- Data structures in Pandas : Series and DataFrames
- Import and Export data
- Working with Excel, CSV, Json, Delimited data files
- Sorting data (Ascending/Descending)
- Loc[] and iloc[]
- Search and Filter data
- Value_Counts
- Grouping data
- Pivot tables
- Merging data
- Concatenation of data
- Data cleaning
- Remove null values
- Fill null values with mean(), median() and mode()
- Identify duplicate records
- Remove duplicate records

Data Visualization with Matplotlib library:

- Matplotlib Pyplot
- Matplotlib Plotting
- Matplotlib Markers
- Matplotlib Line
- Matplotlib Labels
- Matplotlib Grid
- Matplotlib Subplot
- Matplotlib Scatter
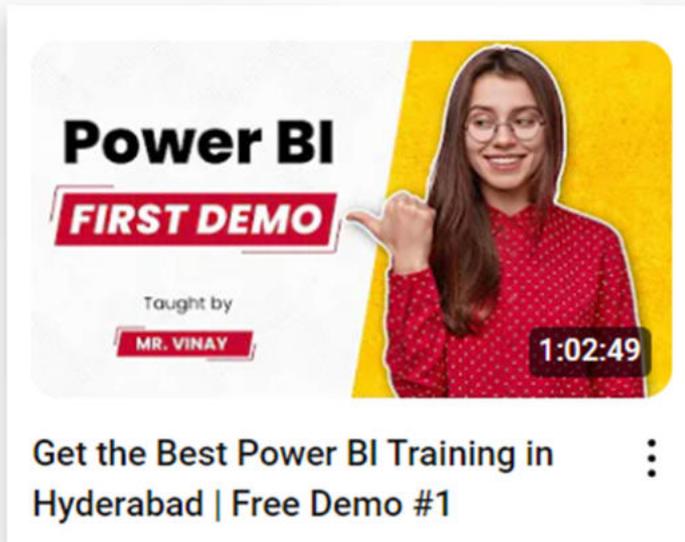- Matplotlib Bars
- Matplotlib Histograms
- Matplotlib Pie charts

Numpy Library (Numerical Python) :

▶ Creating Arrays
▶ Array indexing
▶ Array slicing
▶ 1D Arrays
▶ 2D Arrays
▶ 3D Arrays
▶ Array join
▶ Array Search
▶ Array filter

Database Connectivities :

▶ Table creation in Oracle
▶ Oracle database connection in Python
▶ Collections and documents in NoSQL
▶ NoSQL database connection in Python
▶ Creation of Database and Tables in MySQL
▶ MySQL database connection with Python
▶ Near real time examples with DB Connections

A Big Thank you

COURSES WE OFFER

- POWER BI
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- SQL SERVER
- ADE / AZURE BI
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