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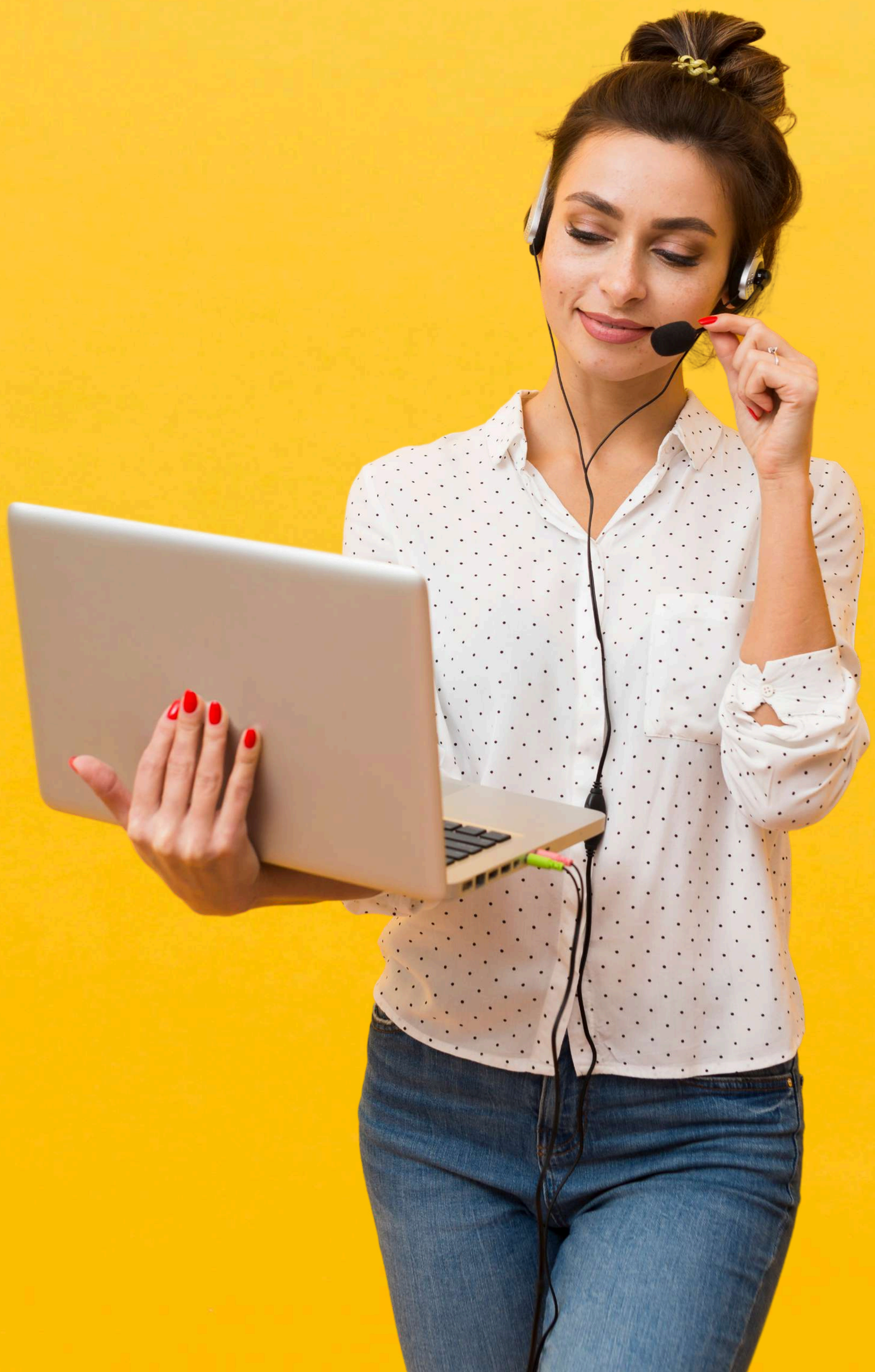
Software Training & Placements

Power BI



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Power BI Curriculum

Foundation:

1. Introduction to Power BI:

-Overview of Power BI Desktop and Power BI Service
-Understanding the Power BI ecosystem (Desktop, Service, and Mobile)
-Key features and components

2. Getting Data:

-Importing data from various sources (Excel, CSV, SQL, Web, etc.)
-Connecting to live data sources
-Data refresh strategies

3. Data Modeling:

-Creating relationships between tables
-Building hierarchies (date, category, etc.)
-Creating and using calculated columns and measures
-Understanding star and snowflake schemas

4. Data Transformation:

-Using Power Query Editor for data cleaning and shaping
-Merging and appending queries
-Data types and transformations
-Handling errors and exceptions

5. Basic Visualizations:

-Creating standard charts (bar, line, pie, etc.)
-Building tables and matrices
-Designing maps and geographic visualizations
-Understanding slicers and filters

Intermediate:

1. DAX (Data Analysis Expressions):

-Introduction to DAX and its syntax

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-Creating calculated columns and measures
-Using time intelligence functions (YTD, QTD, MTD)
-Understanding context in DAX (row context, filter context)

1. Advanced Visualizations:
-Creating custom visuals using marketplace or R/Python visuals
-Building interactive reports with bookmarks and drill-through
-Using tooltips, conditional formatting, and what-if parameters

2. Report Layout and Formatting:
-Designing professional and user-friendly reports
-Using themes, templates, and custom visuals
-Implementing responsive design for different screen sizes
-Creating navigation using buttons and links

3. Power BI Service:
-Publishing reports to Power BI Service
-Creating and managing dashboards
-Sharing reports and dashboards with users
-Collaborating with colleagues using workspaces

Advanced:
1. Power BI Dataflows:
-Introduction to dataflows and their purpose
-Creating and managing dataflows in Power BI Service
-Reusing dataflows across multiple reports
-Integrating dataflows with other services (e.g., Azure Data Lake)

2. Power BI Embedded:
-Embedding Power BI reports into web applications
-Understanding licensing and capacity requirements for embedded
-Customizing the Power BI embedded experience
-Security and authentication for embedded reports

3. Role-Based Security:

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-Implementing row-level security (RLS) in Power BI
-Managing roles and permissions
-Testing and validating security settings
-Best practices for securing data in Power BI

1. Power BI Administration:

-Managing workspaces and organizational content packs
-Monitoring usage and performance with Power BI Admin Portal
-Setting up and managing Power BI gateways for on-premises data
-Capacity management and licensing considerations

SQL Curriculum

Foundation:

1. Introduction to Databases:
-Understanding databases and relational databases
-Basics of tables, rows, and columns
-Primary keys and foreign keys

2. Basic SQL Syntax:
-SELECT statements
-Using FROM to specify tables
-Filtering data with WHERE

3. Data Types and Operators:
-Common data types (INT, VARCHAR, DATE, etc.)
-Arithmetic, comparison, and logical operators

4. Aggregate Functions:
-COUNT, SUM, AVG, MIN, MAX
-Using GROUP BY to aggregate data

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1. Sorting Data:

-Sorting results with ORDER BY

-Sorting in ascending and descending order

2. Joining Tables:

INNER JOIN

LEFT JOIN

RIGHT JOIN

FULL OUTER JOIN

Intermediate:

1. Subqueries:

-Writing basic subqueries

-Understanding correlated subqueries

2. Common Table Expressions (CTEs):

-Introduction to CTEs

-Recursive CTEs

3. Window Functions:

-RANK, DENSE_RANK, ROW_NUMBER

-LEAD and LAG functions

-Using OVER() with PARTITION BY and ORDER BY

4. Conditional Logic:

-Implementing CASE WHEN statements

-Using CASE WHEN for complex queries

5. Indexing and Performance Optimization:

-Understanding indexes and their impact on performance

-Writing efficient queries

-Analyzing query execution plans

Advanced :

1. Advanced Joins:

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-Self joins

-Cross joins

-Natural joins

1. Data Manipulation:

-INSERT, UPDATE, DELETE

-Using transactions (COMMIT, ROLLBACK)

2. Advanced Subqueries:

-Using subqueries in SELECT, FROM, and WHERE clauses

-EXISTS and NOT EXISTS

3. Stored Procedures and Functions:

-Creating and using stored procedures

-Writing custom functions

4. Advanced Performance Optimization:

-Index maintenance (rebuilding and reorganizing)

-Query optimization techniques

-Working with large datasets

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