Programming Fundamentals

Mphasis
The Next Applied

- ✓ Software Engineering & SDLC Phases

- ✓ Flow Chart and Pseudocode

- ✓ Architecture and Normalization Concepts

- ✓ ER Diagram

- ✓ Git Essentials

- ✓ Introduction to SQL

- ✓ Database Connection

- ✓ DDL Commands

Session Plan

- ✓ Query Clauses

- ✓ Query Multiple Tables

- ✓ Functions in SQL

- ✓ SQL Subqueries

- ✓ Advanced Queries

Day 1   SDLC, Flow Chart, Pseudocode

- Evolution of Software

- Life Cycle Phases

- Planning Analysis

- Requirements Analysis

- Design and Prototyping

- Development of the Application

- Testing and Deployment

- Project Management

- Pre-code planning

- Pseudocode

- Verify Algorithm

- Flowchart

Day 2

Normalization, ER Diagram

- DBMS, its components, and advantages for users

- Features and characteristics of flat-file, hierarchical, and XML database models

- Levels of a DBMS architecture

- Types of constraints

- Normalization.

- Perform first normal form

- Perform second normal form

- Perform third normal form

- Perform BCNF

- Describe entity-relationship modeling for a RDBMS

- Define Entities, Attributes, Relationships

- Degree of relationships

Day 3   ER Diagram, Git Essentials

- Cardinality of relationships

- Relational Database Model

- Create an ERD for a database based on a Scenario.

- What is Git?

- How to Install Git on Windows?

- What is GitHub?

- Git commands.

- Git vs. GitHub.

- What is GitLab?

- Git Clone Commands.

- Git Push Commands.

- Git Pull Commands.

- Git History

- Branching and Merging

- Resolve Merge Conflicts in Git

Day 4

SQL

- What is a Database?

- What is SQL?

- What is MySQL?

- SQL Commands

- Launch MySQL Workbench

- Connect to MySQL Server

- Creating a new Database

- Data Types

- CAST or CONVERT

- Keys in SQL

- Constraints

- DDL Commands

- Add table to Database

- Describe Table

- Alter Table

- Modify and Drop Clause

- Data manipulation

- Database schema

- Import Data

- Query Clauses

- Column Alias

- Table Alias

- Introduction to joins

- Types of joins

- Inner Join

- Left Outer Join

- Right Outer Join

Day 5

Query Multiple Tables

Functions in SQL

- Full outer Join

- ANSI Join Syntax

- Self-Join

- Equi and non-equi Join

- Set Operations

- String Functions

- Numeric Functions

- Date Functions

- Aggregate Functions

- Generate Groups

Day 6

SQL Subqueries, Advanced Queries

- SQL subqueries

- Correlated subqueries

- Non-correlated subqueries

- Views

- Index

- Transaction Control Commands

- Stored procedures

- Difference between Procedure and Function

- Creating a Procedure

- Creating a Function

THANK YOU

About Mphasis

Mphasis (BSE: 526299; NSE: MPHASIS) applies next-generation technology to help enterprises transform businesses globally. Customer centricity is foundational to Mphasis and is reflected in the Mphasis' Front2Back™ Transformation approach. Front2Back™ uses the exponential power of cloud and cognitive to provide hyper-personalized ($C=X2C^2_{TM}=1$) digital experience to clients and their end customers. Mphasis' Service Transformation approach helps 'shrink the core' through the application of digital technologies across legacy environments within an enterprise, enabling businesses to stay ahead in a changing world. Mphasis' core reference architectures and tools, speed and innovation with domain expertise and specialization are key to building strong relationships with marquee clients. Click here to know

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