Database/Datawarehouse/BI/ETL Testing

Duration: 45 Hours
Pre-requisites: Manual Testing, Database

Syllabus

Module–I: SQL

❖ **SQL Overview**
- About Database
- Database Operation
- Table
- Normalization
- DBMS, RDBMS, ORDBMS

❖ **Introduction to SQL**
- About SQL
- Connect using Tools
- Data Types
- SQL Commands
- SELECT Statement
- Restricting and Sorting Data/Records
- Wildcard Uses
- Different Types of Operators
- Keywords
- Dual Table
- Pseduo Column
- Release Format
- Common Table Expression
- SQL Clauses
- Operators

❖ **SQL Statements**
- Data Definition Language (DDL)
- Data Manipulation Language (DML)
- Transaction Control Language (TCL)
- Data Control language (DCL)

❖ **Join**
- Inner/Equi Join
- Non-Equi/Cross Join
- Self Join
- Outer Join

❖ **Constraints**
- Primary Key Constraint
- Foreign Key Constraint
- Unique Key Constraint
- Not Null Constraint
- Default Constraint
- Check Constraint

❖ **Sub Query**
- Sub/Inner Query
- Correlated Sub Query
- Nested Sub Query

❖ **Object**
- Index
- Synonym
- View
- Tablespace

❖ **Set Operator**
- Union
- Union All
- Intersection
- Minus

❖ **Built-in Functions**
- Aggregate Functions
- Character Function
- String Functions
- Case Manipulation Functions
- Date Functions
- Analytical Functions

Module–II: Datawarehouse/ETL

❖ **Datawarehouse Fundamental**
- Datawarehouse Overview
- DWH Characteristics and benifits
- Data Mart
- Database vs Data Warehouse
- DWH Architecture

❖ **Datawarehouse Terminologies**
- Data Cleansing
- Partitioning
- Staging area
- Metadata
- OLTP, OLAP, ROLAP, MOLAP
- Surrogate Key
- Snapshot, View and Materialized View
- Data Mining
- Data Cube

- ❖ **Dimension Modeling**
  - ↳ Facts and Dimensions
  - ↳ Hierarchies and Levels
  - ↳ Measures
  - ↳ DWH Schema
  - ↳ Star, Snow-flake and Galaxy Schema

- ❖ **ETL Overview**
  - ↳ Process Flow of ETL
  - ↳ Types of Sources and Target
  - ↳ ETL Data Load types
  - ↳ Active vs Passive Transformation
  - ↳ Extraction Methods in ETL
  - ↳ Introduction to ETL Tool
  - ↳ Tracing Level
  - ↳ Types of Data used for ETL Process

- ❖ **Slowly Changing Dimension**
  - ↳ What is Slowly Changing Dimension ?
  - ↳ SCD Types : Type-1, Type-2, Type-3

- ❖ **ETL Testing Process**
  - ↳ Categories of ETL Testing
  - ↳ How to create ETL Test Case
  - ↳ Types of ETL Bugs/Defects
  - ↳ Database Testing vs ETL Testing
  - ↳ Responsibilies of ETL Tester
  - ↳ Compare Source and Trarget Data

- ❖ **OBIEE/BI/Report**
  - ↳ Introduction to OBIEE
  - ↳ Business Intelligence Basics
  - ↳ Dashboard vs Report
  - ↳ Slice and Dice
  - ↳ Roll-up and Drill-down
  - ↳ Pivot
  - ↳ Report Terminologies
  - ↳ Report UI Usecase

- ❖ **ETL/Report Testing Documents**
  - ↳ Business Requirement
  - ↳ Mapping Document
  - ↳ Calculation Logic Sheet
  - ↳ Dashboard/Report UI Design
  - ↳ Test Scenarios and Test Cases

Module–III: Data Quality Testing

- ❖ **Database/Backend Testing**
  - ↳ What is Database/Backend Testing ?
  - ↳ How to do Backend Testing ?
  - ↳ Areas to cover in Database Testing

  - ↳ Database Testing
  - ↳ Database Testing Test Scenarios
  - ↳ Front-end vs Back-end Testing

- ❖ **Migration Testing**
  - ↳ Overview of Data Migration
  - ↳ What is Migration Testing?
  - ↳ Types of Migration
  - ↳ Migration Testing Phases
  - ↳ Challenges in Data Migration Testing
  - ↳ Data Migration Testing Strategy

- ❖ **Application and Data Centric Testing**
  - ↳ Types of Testing
  - ↳ Reasons caused for Data Centric

- ❖ **Testing on Store Procedure**
  - ↳ What is Store Procedure?
  - ↳ Steps for testing Store Procedure
  - ↳ Benefits of Store Procedure
  - ↳ Disadvantages of Store Procedure
  - ↳ Store Procedure vs Function
  - ↳ Execute Procedure with Parameter

- ❖ **NoSQL Concept**
  - ↳ What is NoSQL?
  - ↳ When to use SQL and NoSQL ?
  - ↳ SQL vs NoSQL
  - ↳ Differences between SQL and NoSQL

Module–IV: Informatica Power Center

- ❖ **Informatica Power Center Tool Overview**
  - ↳ Introduction to Informatica
  - ↳ How developers work on Power Center
  - ↳ Different components and uses
  - ↳ Tasks/Session
  - ↳ Mapping,   Worklet,   Workflow, Mapplet
  - ↳ Naming Conventions

- ❖ **Designer Component**
  - ↳ Working with Sources and Targets
  - ↳ Working with Flat Files
  - ↳ Source and Target
  - ↳ Uses of Mapping Wizards

- ❖ **Workflow Manager Component**
  - ↳ Uses of Workflow Wizard
  - ↳ Worklet Designer
  - ↳ Creating and Configuring Task
  - ↳ Link Workflow and Session

- Validating Tasks and Workflows
- Scheduling and Running Workflows

❖ **Workflow Monitor Component**
- Uses of Workflow Monitor
- Working with Tasks and Workflows
- Workflow and Task Status
- Using Gantt Chart and Task Views
- Session and Workflow Logs

❖ **Transformation**
- Source Qualifier Transformation
- Aggregator Transformation
- Expression Transformation
- Filter Transformation
- Sorter Transformation
- Sequence Generator Transformation
- Normalizer Transformation
- Router Transformation
- Union Transformation
- Rank Transformation
- Joiner Transformation

Module–V: Miscellaneous

❖ **Project Guidance**
- Real time Project Overview
- Import and Export DB Data
- Real Environment Used
- Handling Challenging Tasks
- Testing Entry/Exit Criteria

❖ **Interview Preparation**
- Resume Formats and Design
- Technical FAQ discussion
- Non-Technical Q&A
- Roles and Responsibilities