# ETL TESTING Course contents

## Day 1:

**Data warehouse Concepts**

- Understand data warehousing and how Business Intelligence works
- Data Warehousing Concepts (What/Why/How)
- Data Modeling (Schemas, FACTS and DIMENSIONS)
- Data Mart
- Metadata
- OLAP VS OLTP
- Dimension &Fact
- Types of Dimension tables
- Types of Fact tables
- Star Schema
- Snowflake Schema
- Slowly Changing Dimensions
- Top down and Bottom up approach

## DAY - 2

**ETL Testing - Concepts**

- Test plan & Testing strategy in data warehousing
- Report testing and Data warehousing testing
- Testing plan
- Test cases possibilities in Data warehousing
- Test summary report preparation
- Sample test cases for real time scenarios

## Day – 3

**Raising defect and tracking logs in ALM**

- Introduction to HP Quality Center.
- Release Management Module.
- Test Plan Module.
- Test Lab Module.
- Defect Management Module.
- Reports Module.

## Day – 4

### Types of ETL Testing

- Data completeness.
- Data transformation
- Data quality
- Performance and scalability
- Integration testing
- User-acceptance testing

## Day – 5

### ETL Testing Work flow activities involved

- Analyze and interpret business requirements/ workflows to Create
- Estimations and effort calculations
- Approve requirements and prepare the Test plan for the system testing
- Prepare the test cases with the help of design documents provided by the
- developer team
- Execute system testing and integration testing.
- Best practices to Create quality documentations (Test plans, Test Scripts and Test closure summaries)
- How to detect the bugs in the ETL testing
- How to report the bugs in the ETL testing
- How to co-ordinate with developer team for resolving the defects

## DAY – 6

### QA Life Cycle

- Query log sheet preparation
- Mapping validation
- Table structure validation
- Count validation
- Null validation
- Duplicate validation
- Negative scenarios
- Traceability Matrix

## DAY – 7

**Learn how to work with RDBMS (Oracle Concepts)**

2. Basic DATABASE Concept and SQL

- Basic history of database concept: DBMS, RDBMS, ORDBMS
- SQL Language overview : DQL, DML, DDL, DCL, TCL

Data Manipulation Language DML and Transaction Control Language TCL

- DML : INSERT, UPDATE, DELETE, MERGE
- TCL : COMMIT, ROLLBACK, SAVEPOINT

3. Data Definition Language - DDL

- DDL : CREATE, ALTER, RENAME, DROP, TRUNCATE
- DEFAULT OPTION.

## DAY – 8

4. Restricting and Sorting Data

- WHERE Clause - Character Strings and Dates, number
- General Comparison Conditions = > >= < <= <>
- Other Comparison BETWEEN , IN , LIKE , NULL
- Logical Conditions AND OR NOT
- ORDER BY Clause, Sorting by Column Alias , Column Position, Multiple Columns

## DAY – 9

5. Constraints

- NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY, CHECK
- Column Level Constraint, Table Level Constraint – Naming constraints and usage
- Adding a Constraint, Dropping a Constraint,

- Disabling Constraints, Enabling Constraints
- Validating Constraints

## DAY -10

6. Single-Row Functions

- Character Functions: UPPER, LOWER, INITCAP, LENGTH, SUBSTR, INSTR, LPAD, RPAD, CONCAT, LTRIM, RTRIM, TRIM, REPLACE, TRANSLATE, REVERSE
- Number Functions: ROUND, TRUNC, MOD, POWER, CEIL , FLOOR, ABS

## DAY -11

- Dates Functions: SYSDATE, MONTHS_BETWEEN, NEXT_DAY, LAST_DAY, ADD_MONTHS, ROUND, TRUNC, Arithmetic on Date
- Conversion Functions: Implicit Data-Type Conversion & Explicit Data-Type Conversion, TO_CHAR ,TO_NUMBER ,TO_DATE
- General Functions: NVL , NVL2 , NULLIF, COALESCE
- CASE Expression, DECODE
- Nested function with real-time usage

## DAY -12

7. JOINS

- EQUI JOIN / SIMPLE JOIN / NORMAL JOIN
- ANSI JOIN, LEFT OUTER, RIGHT OUTER, FULL OUTER
- INNER JOIN, JOIN ... USING clause, JOIN ... ON clause,
- CROSS JOIN, NON-EQUI JOIN, SELF JOIN
- ORACLE STANDARD OUTER JOINS.
- Multi table Joins, Complex Joins – How to simplified complex joins.

## DAY -13

8. Multi-row Functions

Group Functions Rules, SUM, MIN, MAX, COUNT, AVG

- Creating Groups of Data: GROUP BY Clause
- Filtering Group Results: The HAVING Clause

## DAY -14

9. Sub-queries

- Single-Row Subqueries- Rules, Operators : = > >= < <= <>
- Null Values in a Subquery
- Multi-Row Subqueries- Rules, Operators : IN, ANY , ALL

## DAY -15

10. Views

- Simple Views and Complex Views – Create, Drop
- Rules for Performing DML Operations on a View
- Inline Views
- Materialized View – Create, Refresh, Drop - Usage

11. Other Database Objects

- Sequence- NEXTVAL and CURRVAL

## DAY -16

12. Index

- Index - When to Create an Index, When Not to Create an Index.

13. SET Operators

- UNION ,
- UNION ALL ,
- INTERSECT ,
- MINUS

## DAY -17

**Data Ware House Life Cycle Different Types of Testing Techniques in ETL:**

- Minus Querying :What is use of testing
- What is quality & standard Responsibilities of a ETL Tester

## Day 18:

**Report testing**

- Various reporting tools in the market
- How to analyze the reports like Qlikview/Tableau/Cognos
- Data completeness and correctness
- Practical session on report analysis and writing test cases

## Day 19:

**Different ETL tools available in the market**

- Ab Initio
- Why do we need ETL tool and Why Informatica?
- IBM Data stage

## Day 20:

- Real time scenarios and test case preparation
- Test summary report preparation (TSR)