ETL TestingTraining

This course is designed to equip participants with essential skills in testing Extract, Transform, and Load (ETL) processes. Through practical exercises and real-world case studies, students gain hands-on experience with industry-standard ETL testing tools and frameworks. By mastering ETL testing techniques, graduates are prepared to ensure the integrity of data pipelines and support decision-making processes in data-driven organisations.

Course Duration   : 45 Days

Course Language : English/Hindi/Telugu

Classroom   : Offline/Online Training/Hybrid Training

Description

The ETC (Exploratory Testing Course) is an immersive training program designed to equip participants with the essential skills and techniques required to conduct thorough and effective exploratory testing sessions. Through a combination of theoretical instruction and hands-on exercises, this course delves into the principles, methodologies, and best practices of exploratory testing. Participants will learn to approach testing with a dynamic and adaptive mindset, emphasising real-time learning and experimentation.

The curriculum covers a range of topics essential to mastering exploratory testing. Participants will explore different techniques such as session-based testing, scenario-based testing, and freestyle exploration, gaining practical insights into when and how to apply each approach. Additionally, the course delves into the nuances of test design and execution, equipping participants with strategies for crafting test charters, generating session reports, and conducting productive debriefing sessions.

Throughout the program, participants will also learn best practices for managing exploratory testing efforts within projects. This includes techniques for prioritising testing activities, analysing coverage, and mitigating risks effectively. By the conclusion of the ETC Testing Course, participants will emerge with a comprehensive understanding of exploratory testing principles and methodologies, along with the practical skills needed to apply them across a variety of software projects.

Skills you get

- Understanding of ETL Processes
- Data Extraction and Transformation Testing
- Data Loading and Validation Testing
- Error Handling and Logging
- Performance and Scalability Testing

- Integration Testing with Source and Target Systems

Course Contents

Introduction to ETL and Data Warehousing

- Overview of data warehousing and ETL process
- Importance of ETL testing
- Data Warehousing Concepts (Dimensions, Facts, Schemas)
- ETL Tools overview (Informatica, Talend, DataStage, SSIS)

Exercises:

- Create a simple data warehouse schema
- Install and explore an ETL tool (e.g., Talend Open Studio)

ETL Process and Workflow

- ETL Process: Extraction, Transformation, Loading
- Source and target data systems
- ETL workflow components
- Data Mapping and Transformation Rules

Exercises:

- Design an ETL workflow for a sample dataset
- Define data mapping and transformation rules

Fundamentals of ETL Testing

- Types of ETL Testing (Production Validation, Source to Target Count, Data Transformation, Data Quality, Performance Testing)
- ETL testing life cycle
- ETL test planning and design
- Common challenges in ETL testing

Exercises:

- Develop a test plan for an ETL process
- Identify potential challenges in a given ETL scenario

Data Extraction Testing

- Source data verification
- Data extraction methods
- Testing data extraction logic
- Handling data extraction errors

Exercises:

- Validate data extraction from a sample source system
- Test different extraction methods (full, incremental)

Data Transformation Testing

- Transformation logic verification
- Data cleansing and standardisation
- Aggregation and calculation testing
- Handling null values and duplicates

Exercises:

- Test transformation rules on a sample dataset
- Verify data cleansing and standardisation processes

Data Loading Testing

- Data loading techniques (Full, Incremental, CDC)
- Target data verification
- Performance testing of data loading
- Data reconciliation

Exercises:

- Validate data loading into a target system
- Perform data reconciliation between source and target

ETL Testing Techniques and Tools

- ETL testing techniques (Manual vs. Automated Testing)
- Introduction to ETL testing tools (QuerySurge, Informatica DVO, Talend)
- Writing SQL Queries for ETL Testing
- Data comparison and validation tools

Exercises:

- Write and execute SQL queries for data validation
- Use an ETL testing tool to automate testing tasks

Data Quality and Integrity Testing

- Data quality dimensions (Accuracy, Completeness, Consistency)
- Data profiling and data quality checks
- Referential integrity testing
- Handling data quality issues

Exercises:

- Perform data profiling on a sample dataset
- Implement data quality checks and validate results

Performance and Scalability Testing

- Importance of performance testing in ETL
- Load testing and stress testing
- Performance optimization techniques
- Scalability considerations

Exercises:

- Conduct a performance test on an ETL process
- Analyse and optimise ETL performance

ETL Testing Best Practices

- ETL testing best practices
- Test data management
- Documentation and reporting
- Case studies and real-world scenarios

Exercises:

- Develop best practice guidelines for an ETL testing project
- Create documentation and test reports for a given ETL process

This course structure ensures that learners get a thorough understanding of ETL testing, from basic concepts to advanced techniques, along with practical, hands-on experience using industry-standard tools and methodologies.