

# INFOSOFT IT SOLUTIONS

## Training | Projects | Placements

Revathi Apartments, Ameerpet, 1<sup>st</sup> Floor, Opposite Annapurna Block, Info

soft it solutions Software Training& Development 905968394,918254087

## ETL TESTING

### Introduction to ETL Processes:

- Overview of ETL architecture
- Importance of ETL testing in data warehousing

### ETL Testing Fundamentals:

- Types of data (structured, semi-structured, unstructured)
- Key challenges in ETL testing

### ETL Testing Strategies:

- Incremental vs. Full Load testing
- Data completeness testing
- Data transformation testing
- Data quality testing

### Tools and Techniques for ETL Testing:

- Overview of ETL testing tools (e.g., Informatica, Talend, IBM Info Sphere DataStage)
- Automation of ETL testing processes
- Performance testing in ETL processes
-

# **ETL TESTING**

## **Introduction to ETL Processes:**

- Overview of ETL architecture
- Importance of ETL testing in data warehousing

## **ETL Testing Fundamentals:**

- Types of data (structured, semi-structured, unstructured)
- Key challenges in ETL testing

## **ETL Testing Strategies:**

- Incremental vs. Full Load testing
- Data completeness testing
- Data transformation testing
- Data quality testing

## **Tools and Techniques for ETL Testing:**

- Overview of ETL testing tools (e.g., Informatica, Talend, IBM Info Sphere DataStage)
- Automation of ETL testing processes
- Performance testing in ETL processes
- 

## **Data Verification Techniques:**

- Source-to-target data mapping
- Data reconciliation
- Data validation against business rules

## **Error Handling and Exception Testing:**

- Exception handling scenarios
- Error logging and error reporting

### **Regression Testing in ETL:**

- Impact analysis of ETL changes
- Regression test suite creation and execution

### **Security and Compliance Testing:**

- Data privacy and protection
- Compliance with regulations (e.g., GDPR, HIPAA)

### **Best Practices and Case Studies:**

- Industry best practices for ETL testing
- Case studies illustrating ETL testing challenges and solutions

### **ETL Testing Documentation:**

- Test plan preparation
- Test case design and execution
- Test summary and defect reporting

### **• Advanced Data Integration Concepts:**

- Real-time ETL vs. Batch ETL
- Change Data Capture (CDC) techniques
- Data virtualization and federation

### **• ETL Performance Testing:**

- Performance metrics and benchmarks
- Stress testing and load testing
- Tuning ETL processes for optimal performance

### **• Data Quality Assurance:**

- Data profiling techniques
- Data cleansing and enrichment strategies
- Data deduplication and normalization
- **Advanced Data Transformation Techniques:**
  - Complex transformation scenarios (e.g., hierarchical data, nested structures)
  - Transformation rule validation
  - Handling data skew and distribution
- **ETL Testing in Big Data Environments:**
  - Challenges and considerations in testing Big Data ETL processes
  - Tools and frameworks for testing Big Data ETL (e.g., Hadoop, Spark)
- **ETL Testing in Cloud Environments:**
  - Cloud-based ETL tools and platforms (e.g., AWS Glue, Azure Data Factory)
  - Security and scalability testing in cloud-based ETL
- **Data Lineage and Impact Analysis:**
  - Tracking data lineage across ETL processes
  - Impact analysis of ETL changes on downstream systems
  -
- **Metadata Testing:**
  - Validation of metadata accuracy and consistency
  - Metadata-driven testing approaches
- **ETL Automation and DevOps Integration:**

- Continuous integration and continuous deployment (CI/CD) for ETL pipelines
- Automation frameworks and scripting for ETL testing
- **Advanced Error Handling and Recovery Testing:**
  - Handling transient errors and retry mechanisms
  - Failover and disaster recovery testing in ETL processes
- **Compliance and Regulatory Testing:**
  - Data governance and compliance testing (e.g., GDPR, CCPA)
  - Auditing and traceability in ETL processes