TEST CASES FOR BI PROJECT

INDEX

TEST SCENARIO #1: Validate Data transfer from Online Sales Source System (OLTP) to EDW Staging Layer

TEST CASE: - Validate Schema for Source and Staging tables.

- ✓ Verify the tables with same name are created in Staging area under the schema name "Staging".
  E.g. Source table *CountryMaster* should have a similar *table Staging.CountryMaster* in staging layer.
- ✓ Verify the schema of each corresponding tables is same between Source and Staging layer.
- ✓ Check whether the following tables have data in source:
  - CountryMaster
  - CustomerMaster
  - OnlineSalesOrderDetail
  - OnlineSalesOrderHeader
  - ProductCategory
  - ProductMaster
  - SalesTerritory

TEST CASE :- Verify Data integrity between Online Sales Tables:
OnlineSalesOrderHeader vs OnlineSalesOrderDetail

- ✓ Verify whether all the SalesOrderIDs present in OnlineSalesorderHeader also exist in OnlineSalesOrderDetails.
- ✓ Verify whether all the SalesOrderIDs present in OnlineSalesOrderDetails also exist in OnlineSalesorderHeader.

TEST CASE: - Verify whether all the staging tables were truncated before Load.

- ✓ For all the staging tables the Staging _Created should be reflected as the current Date and Time (when the data was transferred.
  SELECT MIN(StagingCreatedDate) from <Staging Tables Name>

TEST CASE :- Verify Count of between Source and Staging

- ✓ Verify the count between source and staging tables for the following tables.

	Staging Table		Source(Online Sales DB)
Record count of	Staging.CountryMaster	=	CountryMaster
Record count of	Staging.CustomerMaster	=	CustomerMaster
Record count of	Staging.OnlineSalesOrderDetail	=	OnlineSalesOrderDetail
Record count of	Staging.OnlineSalesOrderHeader	=	OnlineSalesOrderHeader
Record count of	Staging.ProductCategory	=	ProductCategory
Record count of	Staging.ProductMaster	=	ProductMaster
Record count of	Staging.SalesTerritory	=	SalesTerritory

TEST CASE :- Verify Data equality between Source and Staging

- ✓ Verify whether for each table the data in source table is equivalent to the destination staging table.
  - For each table:
    - All the Key values in source vs Staging table must match. E.g. For Customers table all the CustomerIDs in *CustomerMaster* should be present in *Staging.CustomerMaster.*
    - For CustomerID all the remaining attribute values for the record should be same across Source and Destination.

TEST SCENARIO #2: Validate Data transfer from Store Sales Source System (RAW Files) to EDW Staging Layer

TEST CASE: - Validate Schema for Source and Staging tables.

- ✓ Verify schema for Staging.StoreSales which will store the data coming from delimited source file.
  Expected Schema for Staging.StoreSales:

Column Name	DataType	Nullable
SalesOrderID	INT	NOT NULL
SalesOrderDetailID	INT	NOT NULL
ProductID	INT	NOT NULL
UnitPrice	MONEY(8,19)	NOT NULL
OrderQty	SMALLINT	NOT NULL
SalesAmount	NUMERIC(17,38)	NOT NULL
ModifiedDate	DATETIME	NOT NULL
CustomerID	INT	NOT NULL
City	NVARCHAR(60)	NULL
StateProvince	NVARCHAR(100)	NULL
CountryName	NVARCHAR(100)	NULL
Staging_CreatedDate	DATETIME	NOT NULL
Staging_CreatedBy	VARCHAR(50)	NOT NULL

TEST CASE: - Validate Count and Data for Source and Staging tables.

- ✓ Verify Count is same between StoreSales File and Staging.SourceSales.
- ✓ Verify data manually for 5 -10 random SalesOrderIDs between source file and destination table.

TEST SCENARIO #3: Validate Data transfer from Staging Layer and Datawarehouse Dimensions

TEST CASE: - Verify Count between Staging and Datawarehouse for the following Dimensions:

Source (Staging)			Destination (DW)	
COUNT DISTINCT (CountryId)	Staging.CountryMaster	=	COUNT DISTINCT(CountryKey)	DimCountry (where IsActive = 1)
COUNT DISTINCT (CustomerID)	Staging.CustomerMaster	=	COUNT DISTINCT(CustomerKey)	DimCustomer (where IsActive = 1)
COUNT DISTINCT (ProductID)	Staging.ProductMaster	=	COUNT DISTINCT(ProductKey)	DimProduct (where IsActive = 1)
COUNT DISTINCT (StateProvince, City)	Staging.CustomerMaster	=	COUNT DISTINCT(LocationKey)	DimLocation (where IsActive = 1)

TEST CASE: - INSERT new record

- ✓ If data is present in source and not in target then: - **INSERT RECORD.**
- ✓ New key should be generated in the dimension table

TEST CASE: - UPDATE existing Record

- ✓ If data is present in source and present in target :- **UPDATE RECORD**
- ✓ For each key that is present in source and dimension table the corresponding attributes have to be updated accordingly in the destination.

TEST CASE: - DELETE Record

- ✓ If data is not present in source and present in target: - **SOFT DELETE** THE RECORD IN TARGET.
- ✓ Mark the IsActive flag in the destination as 0.

TEST SCENARIO #4: Transformation of data from Staging layer to Facts

TEST CASE: - Verify Count between Staging and Facts:

Source (Staging)			Destination (DW)	
COUNT DISTINCT (SalesOrderDetailID)	Staging.OnlineSalesOrderDetail	=	COUNT DISTINCT(SalesOrderDetailID)	FactOnlineSales
COUNT DISTINCT (SalesOrderDetailID)	Staging.StoreSales	=	COUNT DISTINCT(SalesOrderDetailID)	FactStoreSales

TEST CASE: - INSERT new record

- ✓ If any SalesOrderDetailID is present in source and not in target then: - **INSERT RECORD** into the FACT Table.

TEST CASE: - Verify data integrity between fact and dimension tables:

- ✓ All the keys present in the fact table should be present in the respective dimension table

TEST SCENARIO #5: Reports

TEST CASE: -Verify Connection

- ✓ Verify the connection is made with the correct data source from EXCEL/POWER BI.

TEST CASE: - Verify whether data in reports are in sync with the data warehouse tables

- ✓ For each report verify 10 random records are same as the data in the data warehouse
  E.g. Take a particular city from FactOnlineSales table and check the "SUM (SalesAmount)" for that city is reflecting correct in the report.