Homework 5 – Lanz Compala

1. Give three specific examples why the QAInternalTestTool database does not meet 3NF requirements.  
   Answer:

* Address Line(s), City, State and Zip Code columns are in a single table (dbo.MemberAddress). City and State column should be in a separate table linked to the zip code
* Stores table includes Region, Address Line(s), City, State and Zip Code information. Table should be broken down to separate City and State column linked to the zip code.
* In Product table, Brand should be in a separate table with its on Primary key as it is dependent on the Products primary key. It will be useful when applying promotions/discounts to products by brand.

2. List five things a tester needs to consider and plan for when ETL/Data Migration testing and which phase of the process it’s in.  
Answer:

* Data extraction - Identifying which relevant data from the source database to be copied.
* Data extraction - Verifying if all copied data was copied correctly. Performed after the data extraction.
* Data extraction - Documentation of rejected data and the reasons.
* Data Loading - Verifying all data extracted has been loaded and if it functions the same as the destination database
* Data Loading - Verifying new tables and columns and testing the expected behavior.

4. Explain the differences between local and global variables. Explain the differences between local and global temp tables.  
Answer:

* The differences between local and global variables are declaration and usage. Local variables are declared by the user and starts with @ while global variables are pre-defined system variables that starts with @@. Local variables are used to assign values to be used in procedures or queries while global variables are used to retrieve session related information.
* Local temp tables are only available to the connection that created it and are deleted after the user disconnects from SQL Server. Global temp tables are available to any user or connection after the global temp table is created and is only deleted once all users that have reference have disconnected.

8. Map the migration of the fields. Using a chart like the one below, determine what columns need to be migrated from the source data into our current system (the destination database) – this is a planning document, it does not need to be exact but should describe where the data will be moved to during the migration. Map the columns that should move with the source data in order to fit into our current database.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Source Table** | **Source Column** | **Comments** | **Destination Table** | **Destination Column** |
| Facilities | FacilityID | Will gain new Id upon migration | dbo.Stores | StoreID |
| Facilities | StoreCode | Values from the source needs adjustment to 3 characters and the first character should be set based on region ex. 1 = NE | dbo.Stores | StoreCode |
| Facilities | StoreName |  | dbo.Stores | StoreName |
| Facilities | Region | Values needs to be updated to 2 characters | dbo.Stores | Region |
| Facilities | AddressLine1 |  | dbo.Stores | AddressLine1 |
| Facilities | AddressLine2 |  | dbo.Stores | AddressLine2 |
| Facilities | City |  | dbo.Stores | City |
| Facilities | StateAbb | Values will be updated to its full State name | dbo.Stores | State |
| Facilities | Zip |  | dbo.Stores | Zip |
| Facilities | StoreStatus |  | dbo.Stores | StoreStatus |
| Products | ProductID | Will gain new Id upon migration | dbo.Product | ProductID |
| Products | ProductName |  | dbo.Product | Name |
| Products | ProductDescription |  | dbo.Product | Description |
| Products | SKU |  | dbo.Product | SKU |
| Products | Department |  | dbo.ProductDepartment | DepartmentName |
| ProductStatus | QuantityInStock |  | dbo.Product | QuantityInStock |
| ProductStatus | ProductPrice |  | dbo.Product | Price |
| ProductStatus | IsEnabled |  | dbo.Product | IsEnabled |

9. What issues do you foresee with the data migration? List 10 potential problems, be specific with what data.  
Answer:

1. Migrating StoreCode value due to the format in the destination column where value is related to Region column value.
2. Converting State abbreviation to its state name.
3. Missing Brand from source, all new products from source will be NULL when merged.
4. Since Department column is part of the Product table in source, when merged same Department names will be duplicated with the Department from source having null Description.
5. Products from source will have null values to the following columns(QuantityInStock, Price, IsEnabled) in destination table since those column belong to another table in the source. A join or union needs to be executed between Products and ProductStatus tables in the source before migration.
6. Duplicate products in the same Department upon migration due to missing DepartmentID from the source.
7. Precision loss in Product Price due to difference of maximum digits in source column (ProductPrice decimal (20,2)) and destination column (Price decimal (18,2)).
8. AddressLine1 from the source does not have a specific format example: Rd. vs Rd and needs to be updated to match the format followed in the destination column.
9. AddressLine2 values stored values are not consistent and no format ex. (other name “aka” or former name “formerly”)
10. Since Suite column has no corresponding column in the destination table, the data would either be lost or me combined to AddressLine1 and data should be transformed to match formatting in destination table.

10. What data is not relevant for migration? List at least 8 rows and/or columns.  
Answer:

1. **District** column in Facilities table
2. **Suite** column in Facilities table
3. **Phone** column in Facilities table
4. **BuildingOwnershipID** column in Facilities table
5. **ProductStatusID** foreign key column in Products table
6. **ProductStatusID** primary key column in ProductStatus table
7. **ProductTax** column in ProductStatus table
8. **RecallFlag** column in ProductStatus table

Submission 2

10. What data is not relevant for migration? List at least 8 rows and/or columns.  
Answer:

1. **District** column in Facilities table
2. **BuildingOwnershipID** column in Facilities table
3. **ProductStatusID** foreign key column in Products table
4. **ProductStatusID** primary key column in ProductStatus table
5. **ProductTax** column in ProductStatus table
6. **StoreCode** column in Facilities table  
   - since the datatype is set to Varchar(5) wherein the destination table the StoreCode column is set to Varchar(3)
7. **FacilityID** column in Facilities table  
   - since FacilityID column does not exist in the destination table, values in FacilitiesID cannot also be migrated as StoreID due to potential conflict if FacilityID of a store is already used as StoreID in the destination table
8. **StateAbb** column in Facilities table  
   - since the column does not exist in the destination table and values in StateAbb column cannot be migrated in State column in the destination table as it contains full name of the state.