Contents

Overview of the project to RECREATE THE BICLASS DATABASE START SCHEMA

The submission should include the following:

1. Track the project responsibilities that were delegated to the team.
    a. Have a primary project leader and a backup project leader.
    b. Each team member must have a shared copy of the project work.
    c. Taking attendance, minutes and action items for the individual tasks
    d. Create the to-do list assignment for the team members with detailed notes for changes to the project plan
    e. Track the team members assignments and their due dates on the Gant Chart
2. Create a PowerPoint Presentation that should include the Non-technical Project Objective:
    a. Identify the work of each of the individual members.
    b. PowerPoint document should be named Class Time - Group Number – Group Project 1pptx
        i. Demonstrate the effectiveness of meetings with an agenda and attendance
        ii. Show the to-do list
        iii. Show the project plan
3. You will re-create the BIClass Database Star Schema using the FileUpload.OriginallyLoadedData table[1].
4. **You will add additional columns to all tables in this project once!**
5. **You will modify all of the tables primary keys to eliminate the identity key and use sequence objects in their place. Use the following convention to create the sequence objects:**
    a. SchemaName: PkSequence
    b. SequenceObjectName: TableName + SequenceObject
    c. Fully qualified Sequence object: PkSequence.TableNameSequenceObject
6. You will create the following tables:
    a. Process.WorkflowSteps

[1] The FileUpload.OriginallyLoadedData will have to be joined with 3 dimensional tables to get their surrogate key to populate the fact table/

   b. DbSecurity.UserAuthorization
   c. [CH01-01-Dimension].[DimProductCategory]
   d. [CH01-01-Dimension].[DimProductSubcategory]
7. Document your stored procedures in the SQL code as well as the PowerPoint presentation
8. You create a stored procedure called Process.usp_TrackWorkFlow
9. You will create stored procedures to load each of the individual tables into the star schema.
10. Completion create a stored procedure Process.usp_ShowWorkflowSteps of a query of the Process.WorkflowSteps table.
11. You will provide an analysis by writing queries of your work flow steps:
    a. What was the total execution time to load the star schema?
    b. What was the total execution time of each group member and the total number of stored procedures worked on?
12. Create a PowerPoint with voice annotation describing the work
        i. Show the analysis from question 11 and load the output into JTable for presentation in the video
13. Create a PowerPoint with voice annotation describing the work in two MP4 videos
    a. Explaining the complete system lifecycle from the Project Tracking techniques documentation to the execution of all of tasks required for this project using SSMS (minimum 12 minutes)
    b. Explaining the execution of all of the tasks required for this project using your JDBC Class Library (minimum 8 minutes)
        i. Use the JDBC class library to execute the two stored procedures
            1. Project2.LoadStarSchema
            2. Process.usp_ShowWorkflowSteps and load the output into JTable for presentation in the video
14. Your final database changes should be loaded into the your group database "GClassTime_Group Number" Example: G9_2 for Group 9:15_ Group 2. It must work correctly like your two MP4 presentations demonstrate.

15. Use Redgate SQLDoc and generate the complete document as a pdf to be submitted with the VHDX file.
16. Make sure that VHDX file has a logical folder structure for the files used in this project.
17. All work will be submitted in a VHDX file with the naming convention of Group Name Semester Year Class Time.vhdx
18. The

Project tracking for a group project only

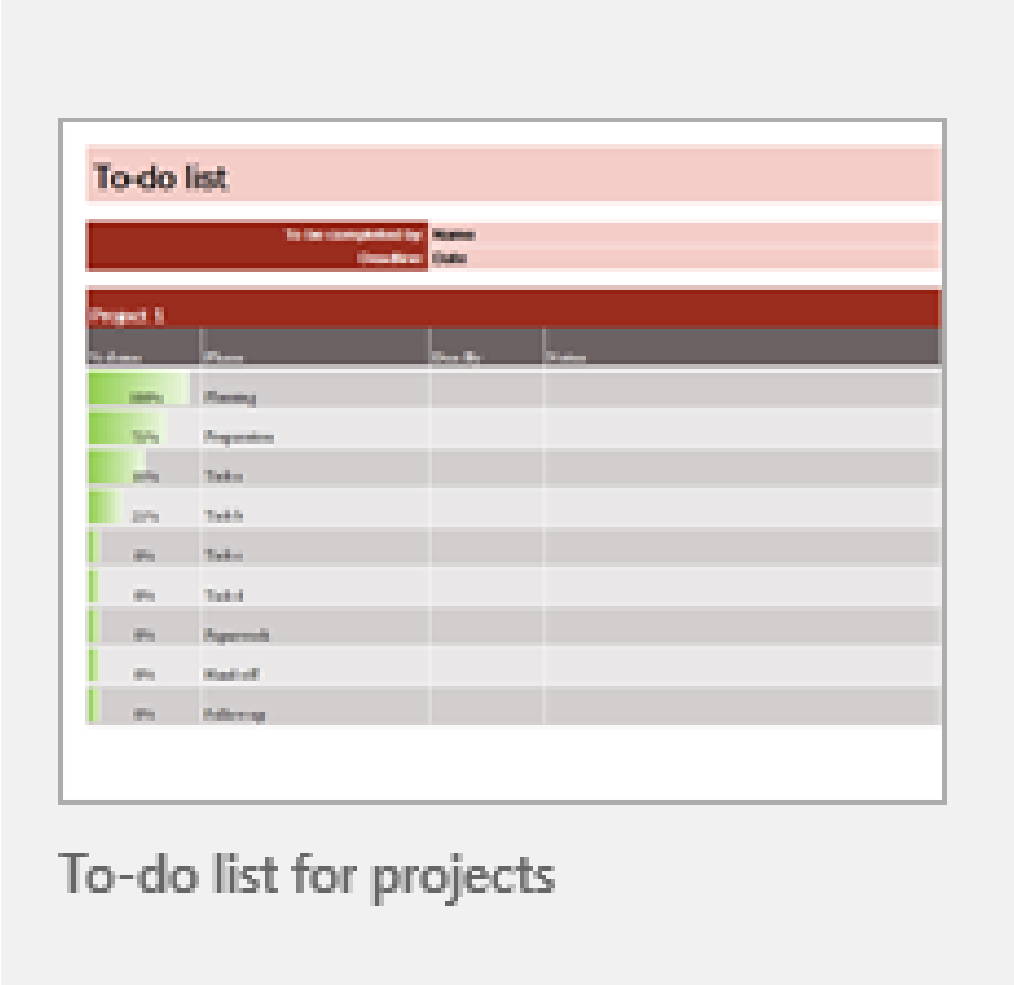
Non-technical Project Objective

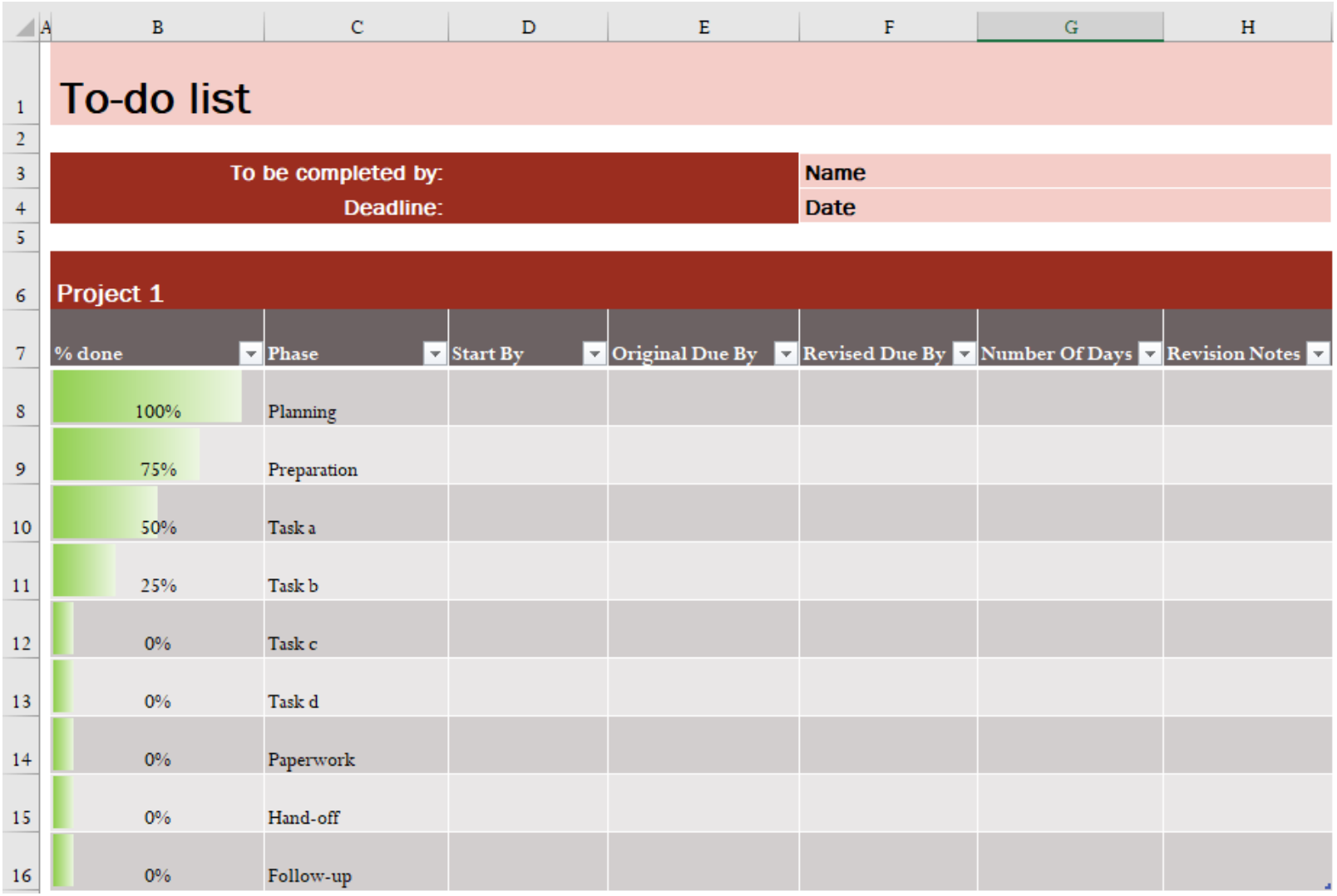
It is important to learn how work as a team (collaborating). Support each other to meet the mutually agreed upon deliverables. Learn how to work in virtual meetings using Microsoft Team, Zoom, GoToMeeting, etc.

Industry is looking for team players. Individuals that are reliable and meet their deadlines.

Project Tracking techniques documentation using Excel and Word

1. **Provide meeting notes (word document) with an agenda and attendance**
2. **Develop a to-do list for the team members using the To-do list. Each project in the worksheet will be the name of the group member and their responsibilities for the project and due dates.**
3. **Track the deliverables by original due date and revise due by with notes explaining the delay.**


To-do list
To-do list for projects



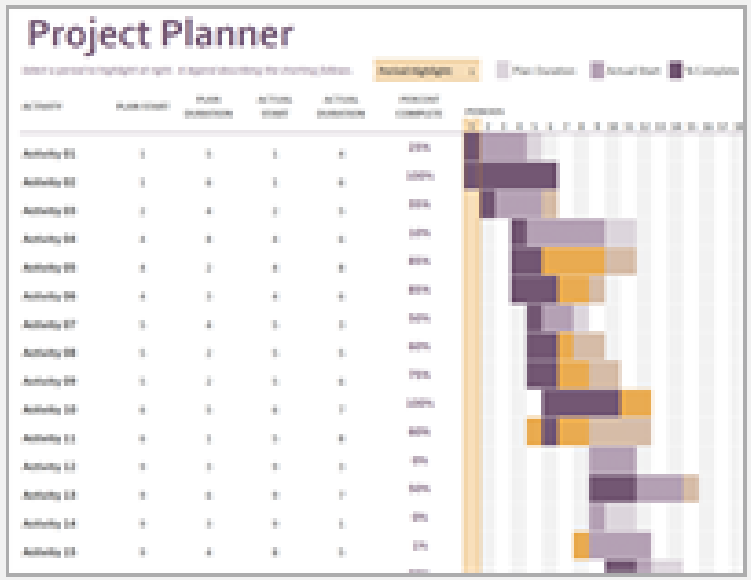
To-do list

To be completed by:	Name
Deadline:	Date

Project 1

% done	Phase	Start By	Original Due By	Revised Due By	Number Of Days	Revision Notes
100%	Planning					
75%	Preparation					
50%	Task a					
25%	Task b					
0%	Task c					
0%	Task d					
0%	Paperwork					
0%	Hand-off					
0%	Follow-up					

1. **Use Gantt Project planner to track the summarized progress of the project. It will be managed by the project manager and shared with the group team2. The activity will be the individual tasks for each group member. Devise your own convention to include tracking delays.**



Gantt project planner

[2] See attached "Group Number – Gantt project 1 planner.xlsx"

Create a new table DbSecurity.UserAuthorization in this project to add the following columns

- ✓ **UserAuthorizationKey INT NOT NULL, -- primary key**
- ✓ **ClassTime nchar(5) Null Default either ('7:45' or '9:15')**
- ✓ **Individual project nvarchar (60) null default('PROJECT 2 RECREATE THE BICLASS DATABASE STAR SCHEMA')**
- ✓ **GroupMemberLastName nvarchar(35) NOT NULL,**
- ✓ **GroupMemberFirstName nvarchar(25) NOT NULL,**
- ✓ **GroupName nvarchar(20) NOT NULL,**
- ✓ **DateAdded datetime2 null default sysdatetime()**

Alter all of the tables in this project and add the following columns to each of the tables:

- **UserAuthorizationKey INT NOT NULL**
- **DateAdded datetime2 null default sysdatetime()**
- **DateOfLastUpdate datetime2 null default sysdatetime()**

An example below:

```
create table [CH01-01-Dimension].[DimCustomer](
    [CustomerKey] [int] identity(1,1) not null,
    [CustomerName] [varchar](30) not null,
    [UserAuthorizationKey] [int] not null,
    [DateAdded] [datetime2](7) null,
    [DateOfLastUpdate] [datetime2](7) null,
 constraint [PK_DimCustomer] primary key clustered
(
    [CustomerKey] asc
)with (pad_index = off, statistics_norecompute = off,
      ignore_dup_key = off, allow_row_locks = on,
      allow_page_locks = on) on [PRIMARY]
) on [PRIMARY]
go

alter table [dbo].[DimCustomer]
    add  constraint [DF_DimCustomer_DateAdded]  default (sysdatetime()) for [DateAdded]
go

alter table [dbo].[DimCustomer]
    add  constraint [DF_DimCustomer_DateOfLastUpdate]  default (sysdatetime()) for [DateOfLastUpdate]
go
```

Document your stored procedures

```
-- ================================================
-- Author:		Your Name
-- Procedure:		Your stored procedure name
-- Create date:		The date
-- Description:		Define the actions of the stored procedure
-- ================================================
```

Create the table Process.WorkflowSteps table with the following columns

- WorkFlowStepKey INT NOT NULL, -- primary key
- WorkFlowStepDescription NVARCHAR(100) NOT NULL,
- WorkFlowStepTableRowCount INT NULL DEFAULT (0),
- StartingDateTime DATETIME2(7) NULL DEFAULT (SYSDATETIME()) ,
- EndingDateTime DATETIME2(7) NULL DEFAULT (SYSDATETIME()) ,
- Class Time CHAR(5) NULL DEFAULT ('09:15' OR '10:45'),
- UserAuthorizationKey INT NOT NULL

Create a stored procedure Process.usp_TrackWorkFlow to track each of the steps of your entire workflow of your project

This stored procedure will be incorporated within each of the stored procedures that you create to load the start schema. You have to design this stored procedure.

How define your input source to the target table

Part of the design is to create either a view or Inline Table Value function for the source input query to load the specific table using your group name as a schema name.

```
-- ================================================
-- Author:          Your Name
-- Procedure:       [Process].[usp_TrackWorkFlow]
-- Create date:     The date
-- Description:     Define the actions of the stored procedure
-- ================================================
ALTER PROCEDURE [Process].[usp_TrackWorkFlow]
    -- Add the parameters for the stored procedure here
    @StartTime DATETIME2,
    @WorkFlowDescription NVARCHAR(100),
    @WorkFlowStepTableRowCount int,
    @ UserAuthorizationKey int
```

Create stored procedures to load the individual table of the star schema

They will be executed within one stored procedure which will pass one parameter to that may truncate all of the data except from the FileUpload.OriginallyLoadedData table.

You add two new tables:

1. **[CH01-01-Dimension].[DimProductCategory]**
2. **[CH01-01-Dimension].[DimProductSubcategory]**

The table will be related to the product table using the grandparent to parent to child relationship below:

1. **[CH01-01-Dimension].[DimProductCategory]**
    a. **[CH01-01-Dimension].[DimProductSubcategory]**
        i. **[CH01-01-Dimension].[DimProduct]**

The stored procedures are stubs where you fill in the appropriate SQL. Please document the each of the procedures.

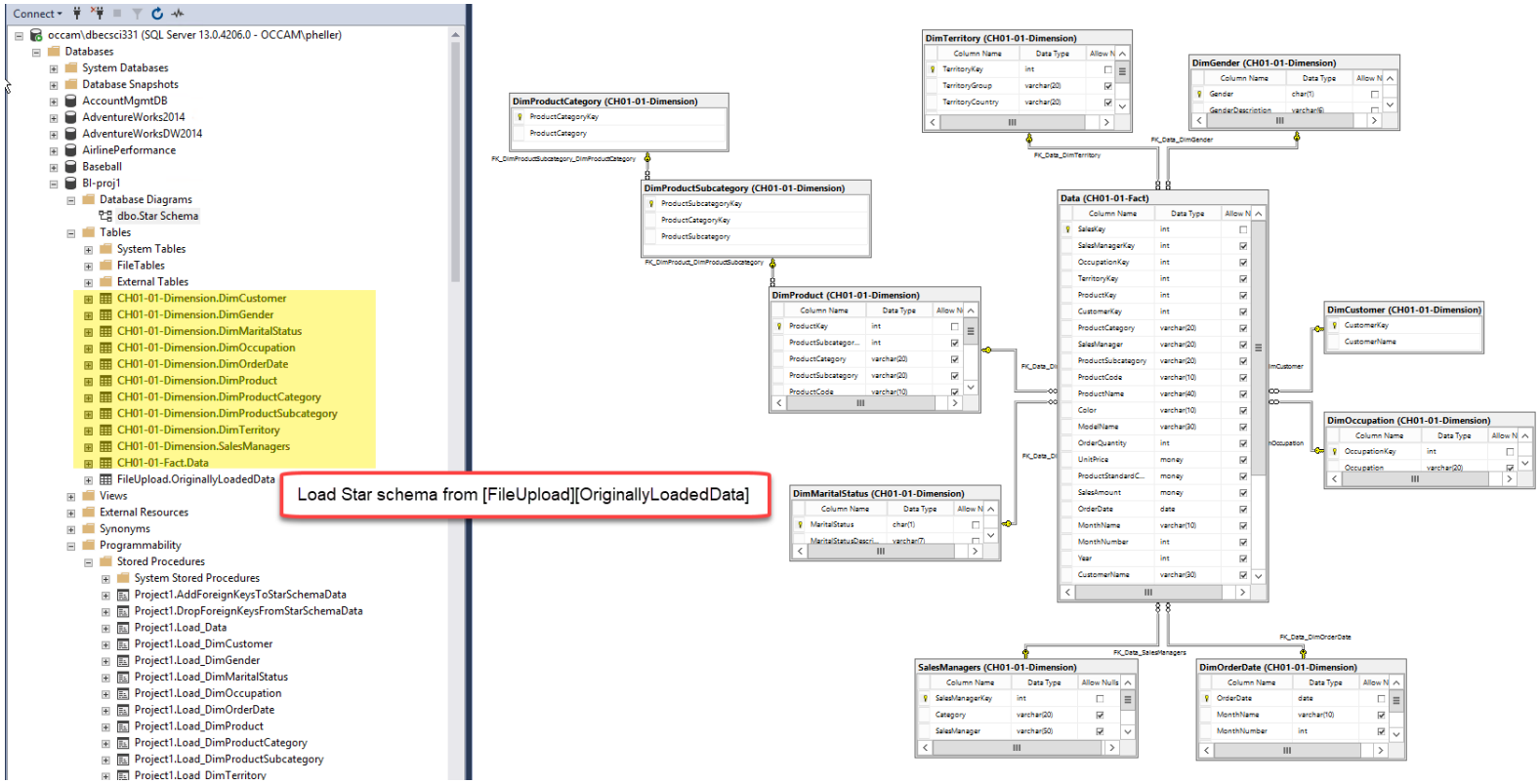
Please be aware of referential integrity[3] issues when deleting/ inserting. The assignment is customizable to the way that you envision the design. This will be an individual and group project.

Create a group PowerPoint presentation that describes the efforts of the team with voice annotation[4] as well as text. Choice the best design of the team with contributions by each individual.

[3] Hint, the have to drop and recreate the foreign keys as part of the load process.

[4] https://youtu.be/wlha2MaoJEk

Database Information (use Project2 in place of Project1)



Sample Stored Procedure

Each stored procedure will pass as a parameter the **UserAuthorizationKey** of the group member that did the work (@GroupMemberUserAuthorizationKey)

```
USE [BIClass]
GO
/****** Object:  StoredProcedure [Project2].[Load_Data]    */
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
-- =============================================
-- Author:      YourName
-- Create date:
-- Description:
--
-- @GroupMemberUserAuthorizationKey is the
-- UserAuthorizationKey of the Group Member who completed
-- this stored procedure.
--
-- =============================================
ALTER PROCEDURE [Project2].[Load_Data]
    @GroupMemberUserAuthorizationKey int
AS
BEGIN
    -- SET NOCOUNT ON added to prevent extra result sets from
    -- interfering with SELECT statements.
    SET NOCOUNT ON;
    /****** Script for SelectTopNRows command from SSMS  ******/
PRINT 'insert your statements within the Begin\End block which is the equivalentof the Java { \ }'
END;
```

Sample Join to load the fact table

```
 INSERT INTO [CH01-01-Fact].Data
    (SalesManagerKey, OccupationKey,
    TerritoryKey, ProductKey, CustomerKey,
    ProductCategory, SalesManager, ProductSubcategory, ProductCode, ProductName, Color, ModelName, OrderQuantity, UnitPrice,
    ProductStandardCost, SalesAmount, OrderDate, MonthName, MonthNumber, Year, CustomerName, MaritalStatus, Gender, Education,
     Occupation, TerritoryRegion, TerritoryCountry, TerritoryGroup)
SELECT
    old.SalesManagerKey, old.OccupationKey,
    dt.TerritoryKey, dp.ProductKey, dc.CustomerKey,
    old.ProductCategory, old.SalesManager, old.ProductSubcategory, old.ProductCode, old.ProductName, old.Color,old.ModelName, old.OrderQuantity, old.UnitPrice,
    old.ProductStandardCost, old.SalesAmount, old.OrderDate, old.MonthName, old.MonthNumber, old.Year, old.CustomerName, old.MaritalStatus, old.Gender,
    old.Education, old.Occupation, old.TerritoryRegion, old.TerritoryCountry, old.TerritoryGroup
FROM
    FileUpload.OriginallyLoadedData AS old INNER JOIN
    [CH01-01-Dimension].DimProduct AS dp
            ON dp.ProductName = old.ProductName INNER JOIN
    [CH01-01-Dimension].DimTerritory AS dt
            ON dt.TerritoryCountry = old.TerritoryCountry AND
               dt.TerritoryGroup = old.TerritoryGroup AND
               dt.TerritoryRegion = old.TerritoryRegion INNER JOIN
    [CH01-01-Dimension].DimCustomer AS dc
            ON dc.CustomerName = old.CustomerName
END;
```

Truncate Tables Example

Also, recreate the sequence objects in this stored procedure.

```
USE [BIClass]
GO
/****** Object:  StoredProcedure [Project2].[Load_Data]    */
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
-- =============================================
-- Author:      YourName
-- Create date:
-- Description:
--
-- @GroupMemberUserAuthorizationKey is the
-- UserAuthorizationKey of the Group Member who completed
-- this stored procedure.
--
-- =============================================
ALTER PROCEDURE [Project2].[Load_Data]
    @GroupMemberUserAuthorizationKey int
AS
BEGIN
    -- SET NOCOUNT ON added to prevent extra result sets from
    -- interfering with SELECT statements.
    SET NOCOUNT ON;
    /****** Script for SelectTopNRows command from SSMS  ******/
    PRINT 'insert your statements within the Begin\End block which is the equivalentof the Java { \ }'

    truncate table [CH01-01-Fact].Data
    truncate table [CH01-01-Dimension].DimCustomer
    truncate table [CH01-01-Dimension].DimGender
    truncate table [CH01-01-Dimension].DimMaritalStatus
    truncate table [CH01-01-Dimension].DimOccupation
    truncate table [CH01-01-Dimension].DimOrderDate
    truncate table [CH01-01-Dimension].DimProduct
    truncate table [CH01-01-Dimension].DimTerritory
    truncate table [CH01-01-Dimension].SalesManagers

END;
```

An example of how to drop and recreate a sequence object.

```
DROP SEQUENCE
[dbo].[EmployeesSequenceID]

CREATE SEQUENCE
[dbo].[EmployeesSequenceID]
 AS [int]
 START WITH 1
 INCREMENT BY 1
 MINVALUE 1
 MAXVALUE 2147483647
 CACHE
GO
```

An example of how to restart a sequence object after the table has been truncated

```
ALTER SEQUENCE Test.CountBy1
RESTART WITH 1;
```

[Project2].[LoadStarSchemaData]

```
-- ================================================
-- Author:      YourName
-- Create date:
-- Description:
-- ================================================
ALTER PROCEDURE [Project2].[LoadStarSchemaData]
    -- Add the parameters for the stored procedure here
AS
BEGIN
    SET NOCOUNT ON;

    --
    --  Drop All of the foreign keys prior to truncating tables in the star schema
    --
    EXEC  [Project2].[DropForeignKeysFromStarSchemaData];
    --
    --  Check row count before truncation
    EXEC    [Project2].[ShowTableStatusRowCount]
        @GroupMemberUserAuthorizationKey = -1,  -- Change -1 to the appropriate UserAuthorizationKey
        @TableStatus = N'''Pre-truncate of tables'''
    --
    --  Always truncate the Star Schema Data
    --
    EXEC  [Project2].[TruncateStarSchemaData];
    --
    --  Load the star schema
    --
    EXEC  [Project2].[Load_DimProductCategory] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_DimProductSubcategory] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_DimProduct] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_SalesManagers] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_DimGender] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_DimMaritalStatus] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_DimOccupation] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_DimOrderDate] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_DimTerritory] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_DimCustomer] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    EXEC  [Project2].[Load_Data] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
  --
    --  Recreate all of the foreign keys prior after loading the star schema
    --
    --
    --  Check row count before truncation
    EXEC    [Project2].[ShowTableStatusRowCount]
        @GroupMemberUserAuthorizationKey = -1,  -- Change -1 to the appropriate UserAuthorizationKey
        @TableStatus = N'''Row Count after loading the star schema'''
    --
   EXEC [Project2].[AddForeignKeysToStarSchemaData] @GroupMemberUserAuthorizationKey = -1;  -- Change -1 to the appropriate UserAuthorizationKey
    --
END;
```