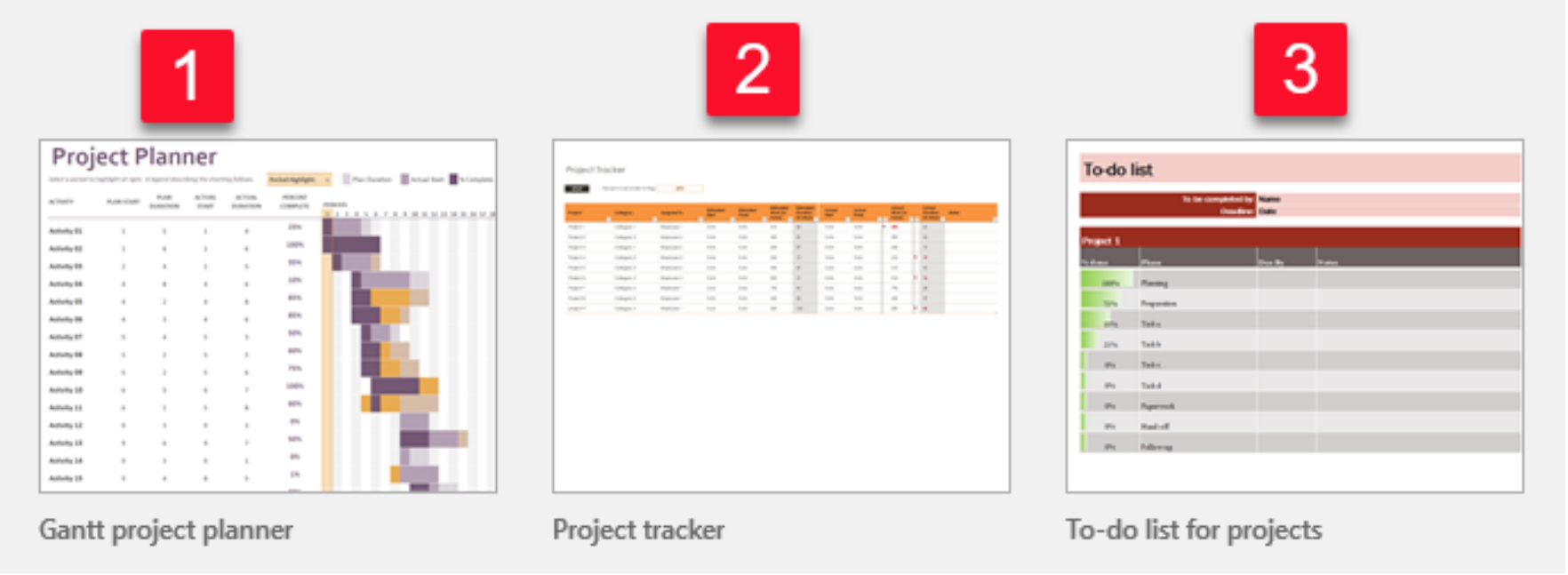
Contents

Project tracking for a group project only

As part of the project, take attendance of the meeting and share the minutes with the team. Look at what is available in excel to help you manage and document your workflow.



Overview of the project to RECREATE THE BICLASS DATABASE START SCHEMA

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 and minutes
    d. Create the to-do list assignment for the team members
    e. Track the team members assignments and their due dates on the Gant Chart
2. You will re-create the BIClass Database Star Schema using the FileUpload.OriginallyLoadedData table[1].
3. **You will add additional columns to all tables in this project once!**
4. **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
5. You will create the following tables:
    a. Process.WorkflowSteps
    b. DbSecurity.UserAuthorization
    c. [CH01-01-Dimension].[DimProductCategory]
    d. [CH01-01-Dimension].[DimProductSubcategory]
6. Document your stored procedures in the SQL code as well as the PowerPoint presentation

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

7. You create a stored procedure called Process.usp_TrackWorkFlow
8. You will create stored procedures to load each of the individual tables into the star schema.
9. Completion create a stored procedure Process.usp_Show WorkflowSteps of a query of the Process.WorkflowSteps table.
10. 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?
11. Create a PowerPoint with voice annotation describing the work
    a. Use the JDBC class library to execute the two stored procedures
        i. Project2.LoadStarSchema
        ii. Process.usp_Show WorkflowSteps and load the output into JTable for presentation in the video
        iii. Show the analysis from question 10 and load the output into JTable for presentation in the video

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()) ,
- ClassTime CHAR(5) NULL DEFAULT ('07:45' OR '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.

```
-- ================================================
-- 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,
    @ UserAuthorization 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.

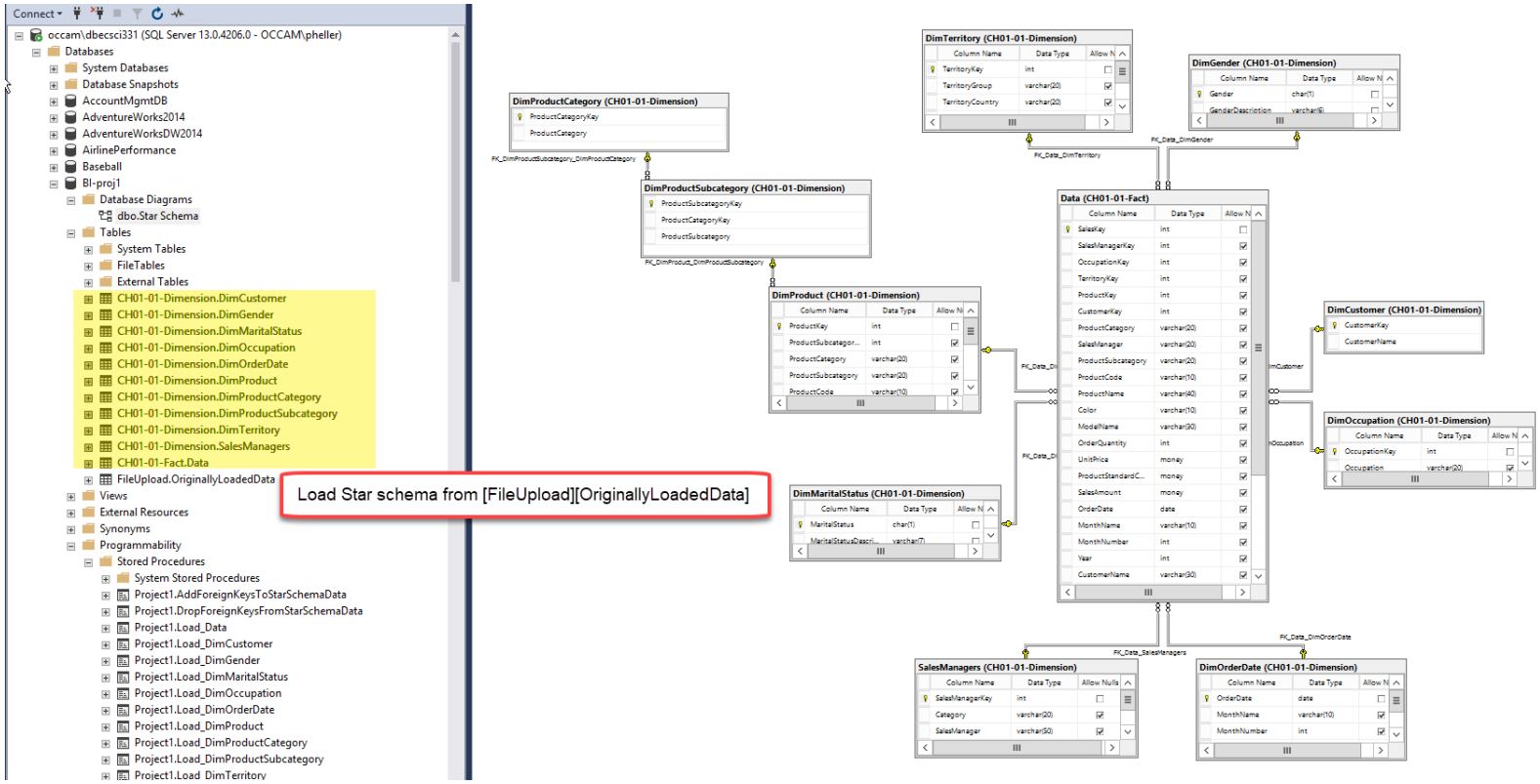
Please be aware of referential integrity[2] issues when deleting/ inserting. The assignment is customizable to the way that you envision the design. This will be an individual and group project.

Create a group PowerPoint presentation that describes the efforts of the team with voice annotation[3] as well as text. Choice the best design of the team with contributions by each individual.

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

[3] 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
```

[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;
```