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My Screencast Videos

- ✓ CSCI381 Erwin Data Modeling – Playlist:
<https://www.screencast.com/t/qDBIBs1yq>
- ✓ CSCI381 Erwin DM Tips – Playlist:
<https://www.screencast.com/t/K9utn3UQSgn>

Non-technical Project Objective

	A	B	C	D	E	F	G	H
1	To-do list							
2								
3	To be completed by:					Name		
4	Deadline:					Date		
5								
6	Project 1							
7	% done	Phase	Start By	Original Due By	Revised Due By	Number Of Days	Revision Notes	
8	100%	Planning						
9	75%	Preparation						
10	50%	Task a						
11	25%	Task b						
12	0%	Task c						
13	0%	Task d						
14	0%	Paperwork						
15	0%	Hand-off						
16	0%	Follow-up						

1. It is important to learn how work as a team (collaborating).
2. Support each other to meet the mutually agreed upon deliverables.
3. Learn how to work in virtual meetings using Microsoft Team, Zoom, GoToMeeting, etc.
4. Industry is looking for team players. Individuals that are reliable and meet their deadlines.

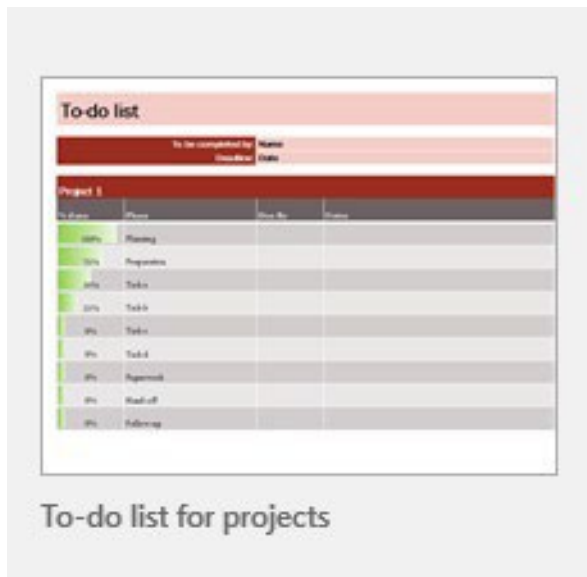
5. Each team member show provides their individual models of what they are contributing to the group project.
6. Make sure all objects are commented and generate reports to demonstrate “no comments are missing “
 - ✓ Meeting notes and planning discussed at each meeting
 - ✓ Make sure to document your meeting and agendas.¹

Creating a Project plan with an Executive Overview

Feel your way around and understand the benefits of doing a project plan.

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.
4. 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.



Use the CSCI381 Project Plan Specification.docx for creating your group's project plan

The project plan will tie to your To-do list (See attached "Group Number – Gantt project 1 planner.xlsx")

Project overview to convert RawEuropeanCarManufacturer into a PDM of your final Normalized Database

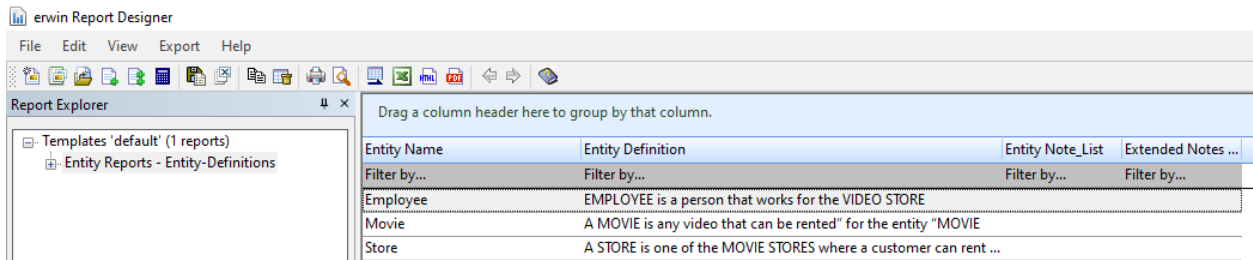
You will show the features and techniques that you have learned this semester

1. Extensive use of subject areas and diagrams within each subject area
2. Create fully qualified objects
 - a. SchemaName that describes objects within the subsystem. No "dbo" schema names
 - b. Use of PascalCase instead of camelCase for this project
 - c. Use of PascalCase for the following objects within your model:
 - i. Tables/Entities
 - ii. Columns/Attributes
 - iii. Foreign keys/ Relationships (Convention: FY_ChildParent_ParentTable
 - iv. Default convention: DF_Template_DefaultName
 - v. Validation Convention: CK_Template_Name
 - vi. Liberal use of indexing for query purposes and validation constraints
 - vii. Create a template with your domains and use the Archetype color coding theme for Entity\Table Style

Create the RawEuropeanCarManufacturer CDM

Create a definition for each of the entities in your model.

Create show the CDM in your diagram and have an Erwin report listing using Entity Reports - Entity-Definitions



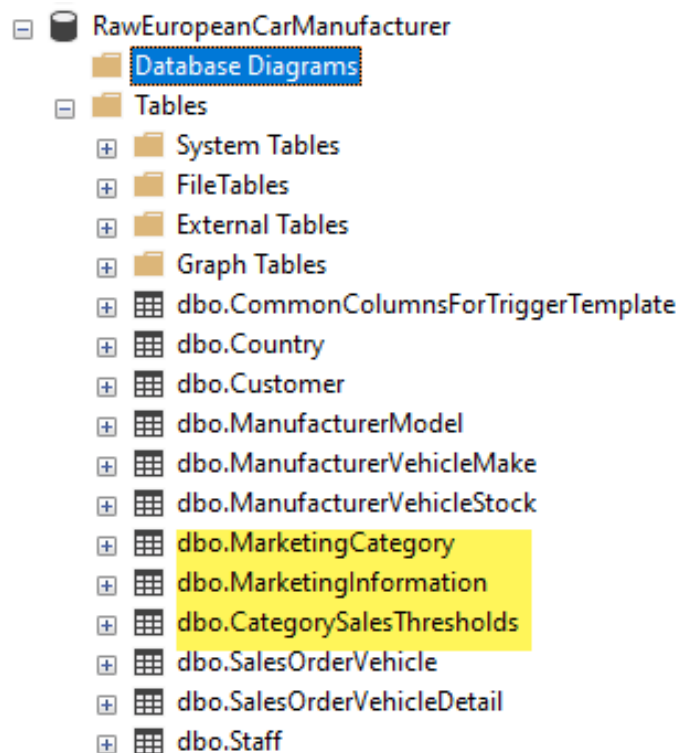
Create the RawEuropeanCarManufacturer LDM

You will create LDM:

- Create your Columns with spaces between the attribute names
- Build a report in Erwin show your tables and attributes

Create the RawEuropeanCarManufacturer PDM

Database tables to be Normalized

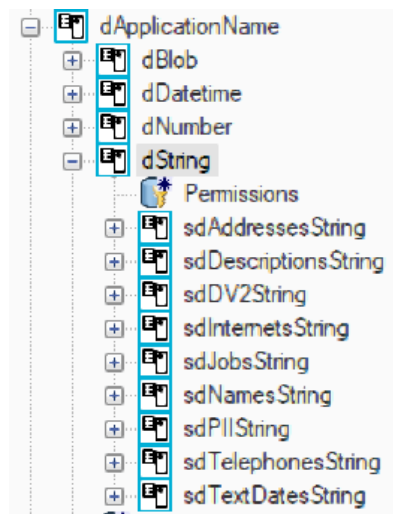


- Highlighted in yellow are tables that can be made into lookup tables or create computed columns in the other tables that will absorb them or totally eliminate them.

- i. There are fully qualified views that need to be created plus 5 additional custom views.
2. Every table not highlighted; you will create audit table triggers.
3. Create views and Inline table valued functions using the excel spreadsheet attached

Pushing the limits of Domain based modeling

1. Create detailed sections describing your domain/Subdomain Hierarchy below:
 - a. Every application column will be defined with customized reusable domain \ fully qualified domain.
 - b. Create a comment to describe the purpose of the domains
 - c. Refine the existing fully qualified UDT (user defined datatypes) into an application name which is equivalent to the Default root domain using a PascalCase convention.
 - i. dApplicationName for top level domains (see Example below) and SchemaName. Sub-domaining your taxonomies with sdSubDomain.UDTobject name topic:



- d. Create a 1 to 1 or 1 to many for one for all of the application columns in the database.

- e. Explain your Domain\User Defined Type:
 - i. Naming convention that is self-documenting name describing the SQL datatype.
 1. Example: SurrogateKeyInt as Integer
 2. Example: sdAddressesString.Address nvarchar (60) where sdAddressesString is the Subdomain and on the physical side sdAddressesString be a SchemaName for fully qualified domain.
 - ii. Analyze how many times is it being reused in?
 - iii. Why you choose this datatype?
 - iv. Create a comment to describe the purpose of the domain.
2. Extensively use various types of domains on each table
 - a. Create constraints in each of the tables for a provide high data integrity at column and table level.
 - b. Default values
 - c. Required or optional
 - d. Unique columns
 - e. Business rule template validations that are reusable (refer to the assignment on domains chapter 15) and over validate on the column and table level
 - f. Create a comment to describe the purpose of the domains

Create constraints and defaults in every one of the tables to provide high quality data integrity

- i. Default values
- ii. Define whether the Column/Attribute is required or optional

- iii. Unique columns indexes to avoid duplication
- iv. Create indexing on the tables for better queries for navigation.
- v. Business rule validations need to be implemented at a column or table level.
- vi. Create a comment to describe the purpose of the defaults, check constraints, require or optional columns

Create audit table triggers or Temporal versioning¹ and load the data in the SQL Server Version


- a. Create the triggers in PostgreSQL² and MySQL
- b. Load the data into PostgreSQL and MySQL
- c. Review your data cleansing strategy and handling of data anomalies

Additional Columns and a new Table

- Add a RowLevelHashKey varbinary (32) to all of the application tables and audit tables. It is now part of the **“CommonColumnsForTriggerTemplate”**.

¹ It appears that MySQL and PostgreSQL does not support System Versioned Tables like Microsoft.

² <https://wiki.postgresql.org/images/6/64/Fosdem20150130PostgresqlTemporal.pdf>

ManufacturerVehicleStock	
	ManufacturerVehicleStockId
	StockId
	StockCode
	ModelID
	Cost
	RepairsCharge
	PartsCharge
	DeliveryCharge
	IsPremiumRoadHandlingPackage
	VehicleColor
	CusomerComments
	PurchaseDate

The highlighted columns in this table are to be hashed for the RowLevelHashKey

- You can exclude “**CommonColumnsForTriggerTemplate**” from the DbSecurity.UserAuthorization table.

Create a new table DbSecurity.UserAuthorization in this project to add the following columns and apply the new fully qualified domain:

- new table DbSecurity.UserAuthorization (fully Qualified Table: SchemaName.TableName)
 - UserAuthorizationId INT NOT NULL, -- primary key
 - ClassTime nchar (5) Null Default ('9:15')
 - Individual project nvarchar (60) null default ('CSCI381

Midterm Project')

- d. GroupMemberLastName nvarchar (35) NOT NULL,
 - e. GroupMemberFirstName nvarchar (25) NOT NULL,
 - f. GroupName nvarchar (20) NOT NULL
 - g. SysStartTime datetime2(7) null default sysdatetime ()
 - h. SysEndTime datetime2(7) null default sysdatetime ()
2. Alter all of the tables in this project and add the following columns to each of the tables:
- a. UserAuthorizationId INT NOT NULL
 - b. SysStartTime datetime2 null default sysdatetime ()
 - c. SysEndTime datetime2 null default sysdatetime ()

Create the RawEuropeanCarManufacturer PDM

1. You have the discretion to add or subtract columns to any of the tables in this database to enhance your design.
2. Upload the final design and implementation into your database as backup file (.bak)

Final Project Submission

Project eight videos MP4 Explanations minimum 12 minutes each

Create a folder Project Videos with the subfolder for each MP4 and various documents used in the individual videos as documented backup.

Try to distribute the responsibility of the video creation to the individuals in the group so that everyone has an opportunity to create at least one.

1. SQL Server
 - a. Your Domain\User defined type Taxonomy with comments describing the purpose the of each of the Domain\User defined type objects
 - i. Adding 2 or 3 Erwin reports
2. Your CDM, LDM and PDM Normalized
 - a. CDM definitions shown and explained
 - i. Adding 2 or 3 Erwin reports
 - b. LDM Overview entities, attributes and relationships with comments
 - i. Adding 2 or 3 Erwin reports
3. PDM decisions for table, columns and foreign keys with comments
 - a. Adding 2 or 3 Erwin reports
 - b. Create a video explaining usage of Domains, Validations and Indexing
 - i. Adding 2 or 3 Erwin reports
4. Create a video demonstrating your implementation of the triggers and minimized CRUD through the usage of Views, Domains, Validations and Indexing with testing.
 - a. Each group member will create three views of consisting of two or more tables.
 - b. Adding 2 or 3 Erwin reports

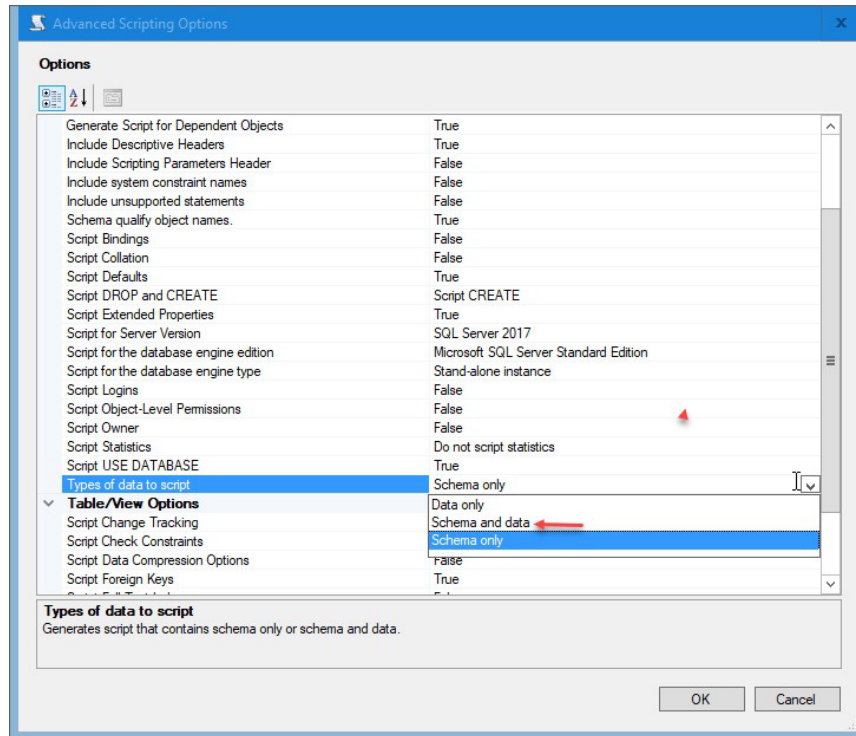
5. Create a PostgreSQL demonstrating the porting your SQL Server model to PostgreSQL. Testing the Triggers and creating an ERD in DBeaver.
 - a. Adding 2 or 3 Erwin report
6. Create a MySQL demonstrating the porting your SQL Server model to MySQL. Testing the Triggers and creating an ERD in DBeaver.
 - a. Adding 2 or 3 Erwin report
7. Create a MongoDB model demonstrating the porting your SQL Server model to MongoDB.
 - a. Using correlate subqueries to create JSON that can be loaded into Compass.
 - b. Adding 2 or 3 Erwin report
8. Create a summary video of your project planning and the benefits that you have learned about collaboration in a group (team) environment.

Save all of your work in GitHub

Show the git status short commits as part of the video.

Add anything additional that will enhance your presentation to separate your group from the other groups

1. Export the Script and Data from SSMS



2. Create a backup of your final database solution
(ClassTimeLastNameFirstNameNameBIClass.bak)

The submission should include the following:

1. **Create a VHDX³ file as a submission format with a directory structure.**
2. Create a folder for each video and associated files under a Folder called Final Project Videos.
3. Create a folder hierarchy for all of the members work (group And Individual) and the group's collaborative of all of the

³ **Zip files or RAR files are not acceptable.**

- documents.
4. Submit all of the project tracking techniques documentation
 5. PowerPoint documents should be named for each of MP4 using the following format
(CSCI381 - Group Number – Project Name.pptx with a voice annotated MP4)
 6. Demonstrate the effectiveness of meetings with an agenda and attendance
 7. Show the to-do list
 8. Show in the project plan
 - a. CDM
 - b. LDM & Business Objects
 - c. PDM