DT228/2, DT282/2 Databases I
Getting Started with SQL

Objectives

The objectives of this lab are to:

- To understand the link between ERD creation and creating data structures

- To allow you to become more familiar with using SQL to create tables and insert data

- To allow you to become familiar with including value constraints in your create statements.

Contents

1. Build an ERD

You are building a simple database to allow the storage of a number of events scheduled in a sports competition and the competitors competing in these competitions.

Below is a simple grid outlining the enrolment in a number of sporting events:

Sport Details		Event Details						
Code	Names	EventCode	Name	Date	CompetitorNo	CompetitorName	CompetitorEmail	FinishingPosition
1	Athletics	1	Mens 100m Final	14/08/2016	1	Usain Bolt	UB@jam.com	1
					2	Justin Gatlin	JG@usa.com	2
					3	Andre De Grasse	ADG@can.com	3
1	Athletics	2	Womens 100m Final	13/08/2016	4	Elaine Thompson	ET@jam.com	1
					5	Tori Bowie	TB@usa.com	2
					6	Shelly-Ann Fraser-Price	SAFP@jam.com	3
2	Swimming	3	Mens 100m Freestyle Final	10/08/2016	7	Kyle Chambers	KC@aus.com	1
					8	Peter Timmers	PT@bel.com	2
					9	Nathan Adrian	NA@usa.com	3

- Build the logical-physical ERD
  - Hint: You should end up with 4 tables in your final physical design.
  - You need a composite key for one entity/table (competitors participating in events).

2. Create Tables and Populate them In SQL Developer

1. Work out the drop and create statements needed to create your basic table structures with primary keys included.
2. Include you foreign key constraints;
3. Add not null constraints to all relevant columns;
4. Include the following value constraints:
    a. Sport, event and competitor names cannot be null
    b. Sport name must be unique
    c. All email addresses must contain the @ symbol and end with .com
    d. All email addresses must be unique
    e. Finishing position must be between 1 and 8 (we are only interested in storing the top 8 finishers)
1. To save your work

   Use either the File menu or the Save icon to save.
   Create a directory on your U drive which you will use to store the work for this module. Save the script in there.

3. Inserting Data

Insert the data provided above

4. Testing your implementation

1. Find the details of all events.
2. Find the names of all competitors.
3. Find the Competitor no of all competitors who finished in position 1 or position 3 in their events include the position in the output.
4. Find the names of all competitors with usa in their email address. Include the email in the output.

5. Reverse Engineering a Data Model from SQL

1. Save your SQL to create the tables for Peters Pets as a .sql file.
2. Open ERWIN and create a logical/physical model.
3. Change your view to Physical/
4. From the Actions menu choose Reverse Engineer, choose logical/physical from the first dialog. The following screen will appear
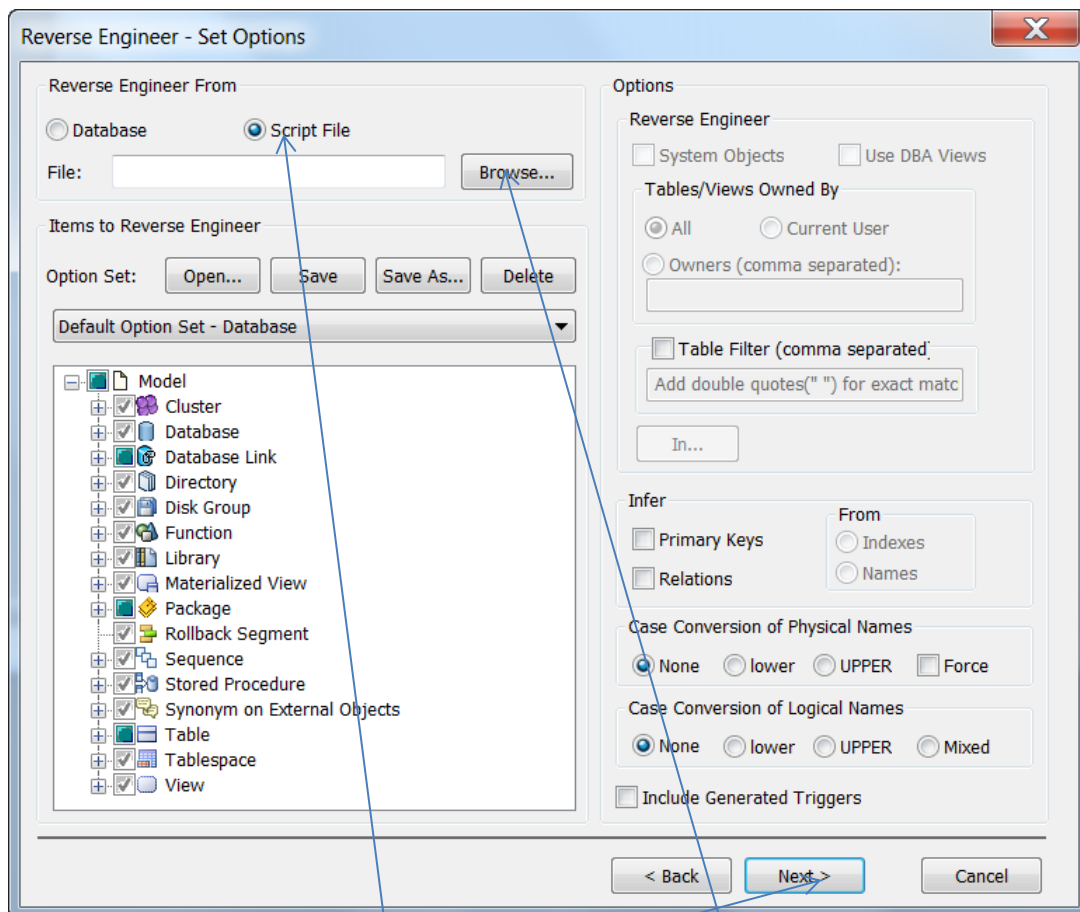
5. Click on the Script File Radio button and then click Browse. Navigate to where you have saved the SQL file and select it.
6. Click Next and ERwin will generate a data model from your Create sql.