Assignment

Assignment Submission Requirements

For this assignment you must submit a single Acrobat PDF document / Hardcopy (depending on your lecturer decision)

Detailed Specification

This is an individual assignment. You must design and develop a database system for sports tournaments season (any, such as the English Premier League, London Tennis, etc.).

The database must consist of <u>at least</u> six tables that have been populated with data. The database is to support queries that would typically be submitted to the system for the topical area that you have chosen. You must do the following:

 Self-investigation for the requirement of the system. Listed them all as form of reports, business rules.

·   Using UML, Chen's or Crow's Foot notation or any case tool to create an Entity Relationship (ER) model for your relational database. All entity types, their attributes and relationships must be clearly shown. You will also be required to show all cardinality and participation constraints. You should use some enhanced ER features in your conceptual model where it makes sense to do so.

Map the EER model devised in part (1) into a relational data model. It must be normalised up to at least 3rd Normal Form.

Using appropriate SQL commands create a set of database tables in MS SQL Server 2008+. You should also show all constraints used in the creation of the tables.

Populate the database with a small amount of data. The data should be meaningful but does not need to be extensive. The following sites may be useful for quickly generating data:

- http://www.databasetestdata.com/
- http://www.generatedata.com/

Your database must contain one view, one trigger, on store procedure and an index (describe why).

Create 10 sample queries that demonstrate the expressiveness of your database system. Your queries must demonstrate different aspects of the system.

Final Report

You must submit a <u>brief</u> final report which must include the following:

a)   A brief description of the database including any assumptions made during the design (THIS IS VERY IMPORTANT TO CLERIFY THE ASSUMTIONS in form of business rules).

b)   An ERD (Entity Relationship Diagram) that fully describes the database (giving descriptions on your work would be appreciated).

c)   The relational schema derived from the ERD that is at least in 3NF (Any detail of the process would be appreciated).

d)   The set of database statements used to create the tables used in your database. You do NOT need to include all the data and insert statements.

e)   *10 queries that demonstrate the usefulness of the database. Also state why and when each query would be used. The following must be demonstrated by at least one of your queries:*

o   A query that uses ORDER BY

o   A query that uses INNER JOINS

o   A query that uses aggregate functions

o   A query that uses the GROUP BY and HAVING clauses

o   A query that uses a sub-query as a relation

o   A query that uses a sub-query in the WHERE clause

o   A query that uses partial matching in the WHERE clause

o   A query that uses a self-JOIN

f)   *The trigger, store procedure, and the index should be added (explain why you make it)*

Demonstration

You will be required to briefly demonstrate your system in one of the laboratory sessions prior to submission of the report.

Self-Assessment:

You will find a self-assessment sheet attached to this assignment. You are to complete this sheet and submit it with your assignment. The grade that you award yourself is **NOT** the final grade that you will be awarded. Your assignment will still be graded by an academic member of staff. There are 5 marks allocated for accurate self-assessment. These marks are available for accurately assessing how well you completed the assignment, so be as objective as possible when completing the form.

Self-Assessment Sheet

(Place a tick in the box that you deem to be most indicative of the quality of the work)

	%	No Attempt to Very Poor	Poor	Fair	Good	Very Good	Excellent

Conceptual Database Design (EER)	25						
Relational schema	15						
Database Implementation	10						
Views and Queries	15						
Data Used	5						
Database Objects Implementation	15						
Demonstration Quality	15						
Total	100						

Note: You must submit this self-assessment as part of the final report. The boxes in bold are for examiner use only.

General Assessment criteria:

Use the following descriptions to guide your self-assessment