Coursework

Module code: **SE2DB11 Databases**
Lecturer responsible: **Frederic Stahl**
Coursework description: **Database Design and Implementation for a Horseracing Media Centre**

Work to be submitted on-line via Blackboard by 10:30 am on: 9th of December
Work will be marked and returned by: 8th of January

NOTES:

This coursework should be submitted on-line through Blackboard Learn in pdf format.

By submitting this work you are certifying that it is all your own work and that use of material from other sources has been properly and fully acknowledged in the text. You are also confirming that you have read and understood the University's Statement of Academic Misconduct, available on the University web-pages.

If your work is submitted after the deadline, *10%* of the maximum possible mark will be deducted for *each* working day (or part of) it is late. A mark of zero will be awarded if your work is submitted more than 5 working days late. You are strongly recommended to submit work by the deadline as a late submission on one piece of work can impact on other work.

If you believe that you have a valid reason for failing to meet a deadline then you should complete an Extenuating Circumstances form and submit it to the Student Information Centre *before* the deadline, or as soon as is practicable afterwards, explaining why.

DATA MODEL FOR HORSERACING MEDIA CENTER

Scenario
An application is required for keeping track of information about racehorses. Specifically, a horse will have an owner, stable, trainers, and parents (sire and dam – also racehorses). We also wish to know which races and racecourses the horse has run at, their placement in each race, and the jockey who rode the horse. You should include relevant information for each entity (e.g. names and addresses; dates for meetings; name(s) and times for races, and so forth).

The simplest set of queries that should be supported include:

- Where has a given horse raced in the last 6 weeks?
- Who has ridden the winners this year?
- Produce a league table of winning trainers.
- Which trainers are suspected of doping?

More complex queries could be:

- List all winners of the Derby and the St. Leger in the same year.
- Find the pedigree (to 4 generations) of a given horse.
- Who has ridden both a horse and its child to a top-three place in any race?

Tasks
The coursework consists of 4 tasks. On the basis of the scenario above, please:

1. Prepare an E-R model of the data, using the convention adopted in the lecture notes. Don't forget that the model requires the listing of entities and attributes, and the inclusion of constraints (business rules) and assumptions. Your answer should use one of the graphical notations introduced in Lectures 2 and 3.
2. Using the E-R model from part 1 create a normalised Relational Model using the conventions from Lecture 4, similar to the Codd notation to show your relations.
3. Implement a Postgres schema based on the **Placement database model** you developed in part 2 (and 1). For this develop a set of related Postgres tables, using constraints as appropriate. Each table should be populated with at least 2 rows for testing. Here I expect a text file comprising the DDL statements, insert statements and screenshots of the populated tables.
4. Write a project report.

You may ask questions about the assignment during practical sessions. I do not expect you to develop stored procedures.

MARKING CRITERIA

a) The table below shows what is typically expected of the work to obtain a given mark. The assignment carries 50% of the total course marks.

Classification Range	Typically the work should meet these requirements
First Class (>= 70%)	The coursework demonstrates: • An exceptional understanding of the principles of data modelling. • Professional use of modelling notation(s). • Excellent technical skills in implementing and testing a database model. • Clear presentation of the coursework.
Upper Second (60..69)	The coursework demonstrates: • Good and deep understanding of the principles of data modelling. • Appropriate use of modelling notation(s). • Good technical skills in implementing and testing a database model. • Clear presentation of the coursework.
Lower Second (50..59)	The coursework demonstrates: • Basic understanding of the principles of data modelling. • Basic use of modelling notation(s). • Moderate technical skills in implementing and testing a database model. • Clear presentation of the coursework.
Third (40..49)	The coursework demonstrates: • Satisfactory understanding of the principles of data modelling. • Satisfactory use of modelling notation(s). • Satisfactory technical skills in implementing and testing a database model.
Pass (30..39)	The coursework demonstrates: • Satisfactory understanding of the principles of data modelling needs considerable improvement. • Satisfactory use of modelling notation(s), but needs considerable improvement. • Satisfactory technical skills in implementing and testing a database model, but needs considerable

	improvement.
Fail (<30)	The coursework fails to demonstrate understanding of modelling techniques, modelling notations and implementation and testing of a database model.

b) The table below shows the mark scheme for the assessment

Part of Submission	**Marks Available**	**Contribution to Mark in %**
Task 1	• model notation and model design • detail of model • chosen entities • chosen attributes • constraints and assumptions	10 6 6 6 8
	Total task 1	**36**
Task 2	• correctness of model and notation • normalisation and argumentation	16 20
	Total task 2	**36**
Task 3	• implementation is correct and reflects model • test of Implementation	6 6
	Total task 3	**12**
Task 4	• writing a technical report, presenting an argued case for the database design, implementation and testing.	16
	Total task 4	**16**
	Total coursework	**100**

WRITING REPORT

You are required to submit your work in the form of a report outlining your work/results on the 3 tasks, but also to include accompanying information such as constraints and assumptions. In order to achieve marks on the report it is important that the report is well structured, written coherently and presents an argued case for your design and implementation. It is recommended to include an abstract, introduction and conclusions. The report must be maximum 7 pages long including figures, references and code. It is important that the report is written in a professional style and language.