COSC265 Lab Test 2015

Time allowed: 90 min
Total marks: 90
Worth: 20%
Open book

There are 4 questions. The last question is optional and does not count towards your mark for the test. You should attempt that question only if you have finished all other questions.

Your answers should be clear and concise - material not relevant to the question will earn no marks whether or not it is correct.

Remember to keep saving your work as you go, as it will be impossible to retrieve your work from Oracle once you have logged out. **Create a text file, and include in it all SQL statements that you execute to answer the questions. Some questions additionally ask for the resulting data to be submitted. Include enough detail in your answer to show that what you have done is correct.**

Make sure that you submit all the work done. You can submit your answers via Learn, or on paper.

In this lab test, you will be working with a small database storing information about the gentlemen's single matches played at the Wimbledon tennis championship in 2015. First of all, you need to run the Oracle script (*tennis-script.sql*), which contains statements to create and populate two tables of this database. The OFFICIAL relation stores information about judges and referees for the matches. This table stores the unique number for each official, name, country and gender. The PLAYER relation stores information about each tennis player: his unique identifier, name, country the player represents and the seed number. Out of 128 players for gentlemen's singles, 32 are seed players selected for the tournament based on their ranking on the ATP list (Association of Tennis Players).

```
create table OFFICIAL
(No integer not null primary key,
 Name varchar(30) not null,
 Country varchar(20) not null,
 gender char(1) not null);

create table PLAYER
(Id integer not null primary key,
 Name varchar(25) not null,
 Country varchar(25) not null,
 SeedNo integer check (SeedNo between 1 and 32));
```

Question 1 (30 marks for the whole question)
The matches at Wimbledon are played over the period of two weeks: in 2015, the matches were played between June 29 and July 12, with the exception of July 5. The days are labelled from 1 to 13. The first match always includes the defending men's champion (Novak Djokovic), opening the tournament on Centre Court on the first day. The order of play is determined by draws, which are labelled first, second, third and fourth. After that, there are quarter finals, semi finals and the final match on the last day. Within each draw, matches are numbered sequentially from 1 onwards. Match duration is represented in minutes.

a) Once you log on to Oracle, please execute *set autocommit on;*

b) (16 marks) Create the MATCH relation, the schema of which is given, and add constraints where appropriate.

   MATCH (<u>Draw, No</u>, Day, Player1, Player2, Duration, Winner)

c) (4 marks) Populate the MATCH table you created with data provided in the *match.sql* file. Show the statement you used to find out the number of tuples in the table, and the result.

d) (10 marks) Create the JUDGING table, which should store for each match the information about officials involved in the match. For each match, there are several officials involved. The roles that officials have are *chair umpire, line umpire* or *referee*. There is only one chair umpire and one referee for each match, but there could be several line umpires.

Question 2 (30 marks for the whole question) Write a single SQL statement for each of the following situations (a to e):

a) (10 marks) Find country with the highest number of seed players.
b) (5 marks) Find countries with no female officials.
c) (5 marks) Find seed players who lost in the first draw matches.
d) (5 marks) Find matches where both players represent the same country.
e) (5 marks) The MATCH table does not contain the duration and the result for the final match played on Day 13, when Novak Djokovic beat Roger Federer in a match that lasted 176 minutes. Write a single SQL statement to update the table to add the duration and the winner.

Question 3 (30 marks for the whole question)

a) (10 marks) Create the PlayerStat view, which shows the name of each player, id and the number of matches he has played at the championship.
b) (5 marks) Using the PlayerStat view, find who were eliminated in the second draw.
c) (15 marks) Create a trigger for the JUDGING table which checks whether inserts to the table satisfy the rules specified in question 1.d). Show the statements you used to test your trigger.

Question 4 (No marks; a correct answer will be awarded a chocolate fish)
Write a single SELECT statement for one of the two options:

a) For each country represented at the 2015 championship, show the number of officials, the total number of players and the number of seed players.
b) Find countries that have the highest percentage of seed players.