Worksheet – SQL Part 1 - Table Creation

1. Draw the table that would be created if the following statement were issued:

   CREATE TABLE ucfsxxx.STUDENTS
   (STUDENT_PRN NUMERIC(10,0) NOT NULL,
   SURNAME CHARACTER VARYING(15) NOT NULL,
   NAME CHARACTER VARYING(20) NOT NULL,
   DATE_OF_BIRTH DATE,
   TERM_ADDRESS CHARACTER VARYING(100),
   HOME_ADDRESS CHARACTER VARYING(100)
   );

2. Write out the table creation script for the following table (don't forget the schema)

   LECTURE_TOPICS

LECTURE_REF	TOPIC_TITLE	DEPARTMENT	FACULTY	LECTURER_NAME	LECTURER_SURNAME
GEOM1030	IT and Spatial Data Structures	Geomatic Engineering	Engineering	Jeremy	Morley
GEOM1040	Spatial Data Management and Display	Geomatic Engineering	Engineering	Muki	Haklay

Note that we have made a lot of assumptions as to the maximum length of the data in each field – these should be documented somewhere and ideally validated with far more data than we have here.

3. Identify the errors in the following CREATE TABLE statement (there are 6):

   CREATE TABLE ucfsxxx.TUBE_FARES
   START_ZONE CHARACTER VARYING(100),
   END_ZONE NUMERIC(5,2),
   FULL_FARE CHARACTER VARYING(20),
   STUDENT_FARE NUMERIC(3,2)
   CHILD_FARE NUMERIC(3,2),)

Worksheet – SQL Part 2 - Constraints

LECTURE_TOPICS

LECTURE_REF	TOPIC_TITLE	DEPARTMENT	FACULTY	LECTURER_NAME	LECTURER_SURNAME
GEOM1030	IT and Spatial Data Structures	Geomatic Engineering	Engineering	Jeremy	Morley
GEOM1040	Spatial Data Management and Display	Geomatic Engineering	Engineering	Muki	Haklay

LECTURE_TIMETABLE

TIME_TABLE_REF	LECTURE_REF	ROOM_ID	DAY	START_TIME	END_TIME	Hours
1	GEOM1030	B14	Wednesday	10:00	12:00	2
2	GEOM1040	B14	Friday	09:00	11:00	2
3	GEOM1040	GE Cluster	Friday	14:00	16:00	2
4	GEOM1030	GE Cluster	Tuesday	14:00	16:00	2

1. Write the SQL script that will create LECTURE_REF as the primary key for the LECTURE_TOPICS table shown above.

2. Write the script that will create TIME_TABLE_REF as the primary key for the LECTURE_TIMETABLE table shown above.

3. Write the script that will create LECTURE_REF as a foreign key in LECTURE_TIMETABLE, relating to the primary key in LECTURE_TOPICS.

Worksheet - SQL Part 3 - Data Manipulation Language

4. Write a script to insert the following values into the table created above.

LECTURE_TOPICS

LECTURE_REF	TOPIC_TITLE	DEPARTMENT	FACULTY	LECTURER_NAME	LECTURER_SURNAME
GEOM1030	IT and Spatial Data Structures	Geomatic Engineering	Engineering	Jeremy	Moreley
GEOM1040	Spatial Data Management and Display	Geomatic Engineering	Engineering	Muki	Haklay

5. Write a script to change the name of the Geomatic Engineering department to 'Geomatic and Spatial Engineering'.

6. Write a script to correct the spelling of Jeremy's surname to Morley.

7. Write a script to delete all 'Geomatic and Spatial Engineering' lectures from the above table.

Worksheet - SQL Part 4 - Queries

LECTURE_TOPICS

LECTURE_REF	TOPIC_TITLE	DEPARTMENT	FACULTY	LECTURER_NAME	LECTURER_SURNAME
GEOM1030	IT and Spatial Data Structures	Geomatic Engineering	Engineering	Jeremy	Morley
GEOM1040	Spatial Data Management and Display	Geomatic Engineering	Engineering	Muki	Haklay
GEOM1000	Introduction to UCL	University Undergraduate Group	None	Joan	Smith

LECTURE_TIMETABLE

TIME_TABLE_REF	LECTURE_REF	ROOM_ID	DAY	START_TIME	END_TIME	Hours
1	GEOM1030	B14	Wednesday	10:00	12:00	2
2	GEOM1040	B14	Friday	09:00	11:00	2
3	GEOM1040	GE Cluster	Friday	14:00	16:00	2
4	GEOM1030	GE Cluster	Tuesday	14:00	16:00	2

1. Write the query that will select all the rows from the LECTURE_TOPICS table

2. Write the query that will select data for the LECTURE_REF, TOPIC_TITLE AND LECTURE_NAME columns from the LECTURE_TOPICS table.

3. Write the query that will generate the set containing all lecturer names and all lecturer surnames.

4. Write the query that will find the total number of hours spent in class.

5. Write the query that will find the total number of hours spent in class per subject.

6. Write a query (nested / sub query) to show how many hours Jeremy lectures each week