

# Assignment 2 – More SQL

## Exercise 1 – Writing SQL queries

Specify the following queries in SQL on the COMPANY database schema shown in Figure 1.

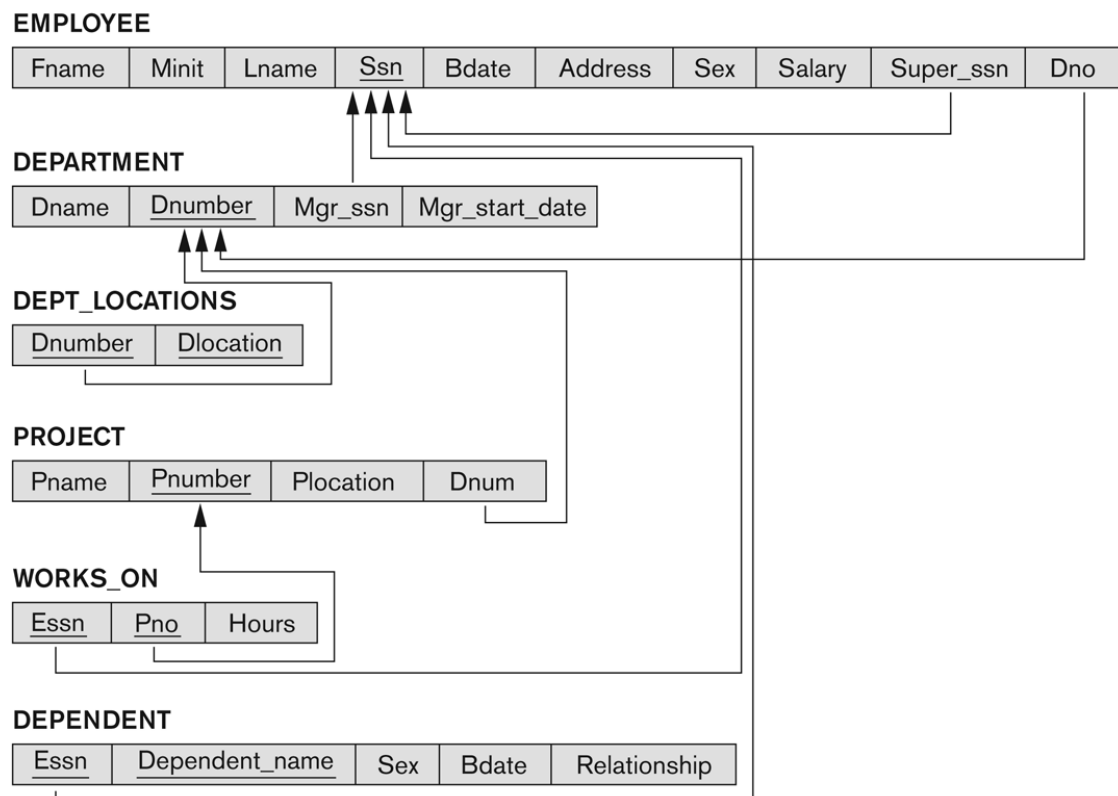


Figure 1: Relational DB Schema for the Company Database with referential integrity constraints shown.

- Retrieve the names of all employees in department 5 who work more than 10 hours per week on the ProductY project.
- List the names of all employees who have a dependent with the same first name as themselves.
- Find the names of all employees who are directly supervised by 'John Smith'.
- For each project, list the project name and the total hours per week (by all employees) spent on that project.
- Retrieve the names of all employees who **do not** work on any project.
- For each department, retrieve the department name and the average salary of all employees working in that department.
- Retrieve the average salary of all female employees.
- Find the names and addresses of all employees who work on at least one project located in Houston but whose department has no location in Houston.
- List the last names of all department managers who have no dependents.

## Exercise 2 – MyTunes

- a) List all songs from a given artist.
- b) List all songs which title or artist name contains a given search term.
- c) List all songs belonging to a given playlist. The songs must be ordered by sequence number.
- d) List all songs not currently in any playlist.
- e) List all playlists and the total number of songs for each playlist.
- f) List all songs with a duration less than 4 minutes.
- g) List all artists and the number of songs for each artist. The list must be ordered by artist name.

## Exercise 3 – MyTunes – Controlling consistency

- a) When inserting or updating an artist then make sure, the artist is not already in the system.  
Hint:  
Use the table designer to make the name attribute of the artist unique.
- b) When inserting or updating a category then make sure, the category is not already in the system.
- c) When deleting a song, make the database automatically remove the song from all playlists.  
Hint:  
open the foreign key constraint between the PlayListSong table and the Song table. Expand the property named INSERT and UPDATE spec, and set the Delete rule to Cascade.  
This means:  
if the primary key that the foreign key is referring to is deleted, then also delete this tuple.
- d) When deleting an artist, make the database automatically remove the songs from that artist.
- e) When deleting a category, make the database automatically set the relating foreign key to null.