

## Solutions for Some of the Queries Problems in Lab 4

Lab 4. If you have been reading the book, you know that the whole thing shows up at p.183.

5.17(e). Find the professors whose salaries are at least 10% higher than the average salary of all professors.

**A solution:** The following defines a view to find out the average salary of the professors.

```
Create View AvgSal(AvgSal) AS
  Select AVG(P.Salary)
  From Professor P
```

With this view in hand, you can then find out the wanted professors with the following query:

```
Select P.Id
From Professor P, AvgSal A
Where P.Salary > 1.1 * A.AvgSal;
```

5.17(f). Find all professors whose salaries are at least 10% higher than the average salary of all professors in their departments. (Hint: Use views, as in (5.39).)

**A solution:** This is quite similar to the previous one, except that this time we want to find out the average salaries of the respective departments. The `group by` clause should be handy.

```
Create View DeptAvgSal(DeptId, AvgSal) AS
  Select P.DeptId, AVG(P.Salary)
  From Professor P
  Group by P.DeptId
```

We can then get the result as follows:

```
Select P.Id
From Professor P, DeptAvgSal D
Where P.DeptId = D.DeptId AND P.Salary > 1.1 * D.AvgSal
```

5.27. Using the relations `Teaching` and `Professor`, create a view of `Transcript` containing only rows corresponding to classes taught by John Smyth.

**A solution:**

```
Create View SmythCourses(StudId, CrsCode, Semester, Grade) AS
Select T.StudId, T.CrsCode, T.Semester, T.Grade
From Teaching R, Transcript T, Professor P
Where T.CrsCode = R.CrsCode AND T.Semester = R.Semester
      AND R.ProfId = P.Id AND P.Name = 'John Smyth'
```