

# Relational Database

CS 3520

Database Theory

## HW # 4

1. Create the tables for the company database and enter the data as given to you (Handout).
2. Print all your tables to make sure you have entered correct data.
3. Write the following queries in Oracle Express Edition and run them using the company database. For each query you need to show:
  - The English statement
  - The SQL statement
  - The result of the query.

The Queries are:

- Q 0. Retrieve the birth date and address of the employee(s) whose name is:  
‘John B. Smith’.
- Q 1. Retrieve the birth date and address of the employee(s) who work for the:  
‘Research’ department.
- Q 2. For every project located in ‘Stafford’, list the project number, the controlling department number and the department manager’s last name, address and birth date.
- Q 3. Retrieve all employees whose address is in Houston, Texas.
- Q 4. Make a list of all project numbers for projects that involve an employee whose last name is ‘Smith’ either as a worker or as a manager of the department that controls the project.
- Q 5. Find all employees who were born during the 1950s.
- Q 6. Retrieve all employees in department 5 whose salary is between \$30000 and \$40000.
- Q 7. Show the resulting salaries if every employee working on the ‘ProductX’ project is given a 10 percent raise.
- Q 8. Retrieve a list of employees and the projects they are working on, ordered by department and, within each department, ordered alphabetically by last name, first name.

- Q 9. Retrieve the name of all employees who do not have supervisor.
- Q10. Retrieve the social security numbers of all employees who work on project numbers 1, 2, or 3.
- Q11. Find the sum of the salaries of all employees, the maximum salaries, the minimum salaries and the average salaries.
- Q12. Retrieve (find) the number of employees in the 'Research' department.
- Q13. For each project, retrieve the project number, the project name, and the number of employees who work on that project.
- Q14. For each project *on which more than two employees work*, retrieve the project number, the project name, and the number of employees who work on the project.
- Q15. For each project retrieve the project number, the project name, and the number of employees from department 5 who work on the project.