

## CS4400: Introduction to Database Systems

"Hints" for Practicing SQL Queries (v3 – last updated on Sun, 24 May 2020)

### Practice Queries from the Textbook: All Categories

**practiceQuery0:** [book 0] Retrieve the birth date and address of the employees whose name is 'John Smith'.

| Result Grid  |                         | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|--------------|-------------------------|--|---------|
| bdate        | address                 |  |         |
| ▶ 1965-01-09 | 731 Fondren, Houston TX |  |         |

**practiceQuery1:** [book 1] Retrieve the first name, last name and address of all employees who work for the 'Research' department.

| Result Grid |         | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|---------|--|---------|
| fname       | lname   | address  |         |
| ▶ John      | Smith   | 731 Fondren, Houston TX                            |         |
| Franklin    | Wong    | 638 Voss, Houston TX                               |         |
| Joyce       | English | 5631 Rice, Houston TX                              |         |
| Ramesh      | Narayan | 975 Fire Oak, Humble TX                            |         |

**practiceQuery2:** [book 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.

Result Grid

Filter Rows:

Q

Search

Export:

| pnumber | dnum | lname   | address                | bdate      |  |
|---------|------|---------|------------------------|------------|--|
| ▶ 10    | 4    | Wallace | 291 Berry, Bellaire TX | 1941-06-20 |  |
| 30      | 4    | Wallace | 291 Berry, Bellaire TX | 1941-06-20 |  |

**practiceQuery3:** [book 3] Find the names of employees who work on all the projects controlled by department number 5.

| Result Grid |       | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|-------|--|---------|
| fname       | lname |  |         |
|             |       |  |         |

**practiceQuery4:** [book 4] Make a list of 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.

| Result Grid |  | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|--|--|---------|
| pno         |  |  |         |
| ▶ 1         |  |  |         |
| 2           |  |  |         |

**practiceQuery5:** [book 5] List the names of all employees with two or more dependents.

| Result Grid |       | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|-------|--|---------|
| fname       | lname |  |         |
| ▶ John      | Smith |  |         |
| Franklin    | Wong  |  |         |




**practiceQuery6:** [book 6] Retrieve the names of employees who have no dependents.

| Result Grid |         | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|---------|--|---------|
| fname       | lname   |  |         |
| ▶ Joyce     | English |  |         |
| Ramesh      | Narayan |  |         |
| James       | Borg    |  |         |
| Ahmad       | Jabbar  |  |         |
| Alicia      | Zelaya  |  |         |




**practiceQuery7:** [book 7] List the names of managers who have at least one dependent.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |                |  |  |
|--|----------------|--|---|
| fname  | lname          |  |   |
| ▶ <b>Franklin</b>  | <b>Wong</b>    |  |   |
| <b>Jennifer</b>  | <b>Wallace</b> |  |   |




**practiceQuery8:** [book 8] For each employee, retrieve the employee's first and last name and the first and last name of his or her immediate supervisor.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |                |                 |                |  |  |
|--|----------------|-----------------|----------------|--|---|
| A_fname  | A_lname        | B_fname         | B_lname        |  |   |
| ▶ <b>John</b>  | <b>Smith</b>   | <b>Franklin</b> | <b>Wong</b>    |  |   |
| <b>Joyce</b>   | <b>English</b> | <b>Franklin</b> | <b>Wong</b>    |  |   |
| <b>Ramesh</b>  | <b>Narayan</b> | <b>Franklin</b> | <b>Wong</b>    |  |   |
| <b>Franklin</b>  | <b>Wong</b>    | <b>James</b>    | <b>Borg</b>    |  |   |
| <b>Jennifer</b>  | <b>Wallace</b> | <b>James</b>    | <b>Borg</b>    |  |   |
| <b>Ahmad</b>   | <b>Jabbar</b>  | <b>Jennifer</b> | <b>Wallace</b> |  |   |
| <b>Alicia</b>  | <b>Zelaya</b>  | <b>Jennifer</b> | <b>Wallace</b> |  |   |
| <b>James</b>   | <b>Borg</b>    | NULL            | NULL           |  |   |

**practiceQuery9:** [book 9] Select all of the employee's Social Security Numbers.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |  |  |
|--|--|---|
| ssn  |  |   |
| ▶ <b>123456789</b>   |  |   |
| <b>333445555</b>   |  |   |
| <b>453453453</b>   |  |   |
| <b>666884444</b>   |  |   |
| <b>888665555</b>   |  |   |
| <b>987654321</b>   |  |   |
| <b>987987987</b>   |  |   |
| <b>999887777</b>   |  |   |

**practiceQuery10:** [book 10] Select all possible combinations of the employee's Social Security Numbers and department names.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |                       |  |  |
|--|-----------------------|--|---|
| ssn  | dname                 |  |   |
| ▶ <b>123456789</b>   | <b>Headquarters</b>   |  |   |
| <b>123456789</b>   | <b>Administration</b> |  |   |
| <b>123456789</b>   | <b>Research</b>       |  |   |
| <b>333445555</b>   | <b>Headquarters</b>   |  |   |
| <b>333445555</b>   | <b>Administration</b> |  |   |
| <b>333445555</b>   | <b>Research</b>       |  |   |
| <b>453453453</b>   | <b>Headquarters</b>   |  |   |
| <b>453453453</b>   | <b>Administration</b> |  |   |
| <b>453453453</b>   | <b>Research</b>       |  |   |
| <b>666884444</b>   | <b>Headquarters</b>   |  |   |
| <b>666884444</b>   | <b>Administration</b> |  |   |
| <b>666884444</b>   | <b>Research</b>       |  |   |
| <b>888665555</b>   | <b>Headquarters</b>   |  |   |
| <b>888665555</b>   | <b>Administration</b> |  |   |
| <b>888665555</b>   | <b>Research</b>       |  |   |
| <b>987654321</b>   | <b>Headquarters</b>   |  |   |
| <b>987654321</b>   | <b>Administration</b> |  |   |
| <b>987654321</b>   | <b>Research</b>       |  |   |
| <b>987987987</b>   | <b>Headquarters</b>   |  |   |
| <b>987987987</b>   | <b>Administration</b> |  |   |
| <b>987987987</b>   | <b>Research</b>       |  |   |
| <b>999887777</b>   | <b>Headquarters</b>   |  |   |
| <b>999887777</b>   | <b>Administration</b> |  |   |
| <b>999887777</b>   | <b>Research</b>       |  |   |

**practiceQuery11:** [book 11] Retrieve the distinct salaries of all of the employees.

Result Grid

Filter Rows:

Q Search

Export:

| salary  |  |
|---------|--|
| ▶ 30000 |  |
| 40000   |  |
| 25000   |  |
| 38000   |  |
| 55000   |  |
| 43000   |  |

**practiceQuery12:** [book 12] Retrieve the first and last names of all employees whose address is in Houston, Texas.

| Result Grid |         |  | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|---------|--|--|---------|
| fname       | lname   |  |  |         |
| ▶ John      | Smith   |  |  |         |
| Franklin    | Wong    |  |  |         |
| Joyce       | English |  |  |         |
| James       | Borg    |  |  |         |
| Ahmad       | Jabbar  |  |  |         |

**practiceQuery13:** [book 13] Show the first and last names and resulting salaries if every employee working on the 'ProductX' project is given a 10% raise.

| Result Grid |         |          |  | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|---------|----------|--|--|---------|
| fname       | lname   | salary   |  |  |         |
| ▶ Franklin  | Wong    | 40000.00 |  |  |         |
| Ramesh      | Narayan | 38000.00 |  |  |         |
| James       | Borg    | 55000.00 |  |  |         |
| Jennifer    | Wallace | 43000.00 |  |  |         |
| Ahmad       | Jabbar  | 25000.00 |  |  |         |
| Alicia      | Zelaya  | 25000.00 |  |  |         |
| John        | Smith   | 33000.00 |  |  |         |
| Joyce       | English | 27500.00 |  |  |         |

**practiceQuery14:** [book 14] Retrieve all information for employees in department 5 whose salary is between \$30,000 and \$40,000.

| Result Grid |         |           |            |                         |     |        |           |     |  | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|---------|-----------|------------|-------------------------|-----|--------|-----------|-----|--|--|---------|
| fname       | lname   | ssn       | bdate      | address                 | sex | salary | superssn  | dno |  |  |         |
| ▶ John      | Smith   | 123456789 | 1965-01-09 | 731 Fondren, Houston TX | M   | 30000  | 333445555 | 5   |  |  |         |
| Franklin    | Wong    | 333445555 | 1955-12-08 | 638 Voss, Houston TX    | M   | 40000  | 888665555 | 5   |  |  |         |
| Ramesh      | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak, Humble TX | M   | 38000  | 333445555 | 5   |  |  |         |

**practiceQuery15:** [book 15] Retrieve a list of department names, employee first and last names, and the project names they are working on, ordered by department and, within each department, ordered alphabetically by last name, then first name.

| Result Grid    | Filter Rows: | Search   | Export:         |
|----------------|--------------|----------|-----------------|
| dname          | lname        | fname    | pname           |
| Headquarters   | Borg         | James    | Reorganization  |
| Research       | English      | Joyce    | ProductX        |
| Research       | English      | Joyce    | ProductY        |
| Administration | Jabbar       | Ahmad    | Computerization |
| Administration | Jabbar       | Ahmad    | Newbenefits     |
| Research       | Narayan      | Ramesh   | ProductZ        |
| Research       | Smith        | John     | ProductX        |
| Research       | Smith        | John     | ProductY        |
| Administration | Wallace      | Jennifer | Reorganization  |
| Administration | Wallace      | Jennifer | Newbenefits     |
| Research       | Wong         | Franklin | ProductY        |
| Research       | Wong         | Franklin | ProductZ        |
| Research       | Wong         | Franklin | Computerization |
| Research       | Wong         | Franklin | Reorganization  |
| Administration | Zelaya       | Alicia   | Computerization |
| Administration | Zelaya       | Alicia   | Newbenefits     |

**practiceQuery16:** [book 16] Retrieve the name of each employee who has a dependent with the same first name and is the same sex as the employee.

| Result Grid | Filter Rows: | Search | Export: |
|-------------|--------------|--------|---------|
| fname       | lname        |        |         |
|             |              |        |         |

**practiceQuery17:** [book 17] Retrieve the Social Security numbers of all employees who work on project numbers 1, 2 or 3.

| Result Grid | Filter Rows: | Search | Export: |
|-------------|--------------|--------|---------|
| ssn         |              |        |         |
| 123456789   |              |        |         |
| 333445555   |              |        |         |
| 453453453   |              |        |         |
| 666884444   |              |        |         |

**practiceQuery18:** [book 18] Retrieve the names of all employees who do not have supervisors.

| Result Grid | Filter Rows: | Search | Export: |
|-------------|--------------|--------|---------|
| fname       | lname        |        |         |
| James       | Borg         |        |         |

**practiceQuery19:** [book 19] Find the sum of the salaries of all employees, the maximum salary, the minimum salary, and the average salary.

| Result Grid | Filter Rows: | Search      | Export:     |
|-------------|--------------|-------------|-------------|
| sum(salary) | max(salary)  | min(salary) | avg(salary) |
| 281000      | 55000        | 25000       | 35125.0000  |


**practiceQuery20:** [book 20] Find the sum of the salaries of all employees of the 'Research' department, as well as the maximum salary, the minimum salary, and the average salary in this department.

| Result Grid | Filter Rows: | Search      | Export:     |
|-------------|--------------|-------------|-------------|
| sum(salary) | max(salary)  | min(salary) | avg(salary) |
| 133000      | 40000        | 25000       | 33250.0000  |

**practiceQuery21:** [book 21] Retrieve the total number of employees in the company.

| Result Grid |  | Filter Rows: <input type="text" value="Q Search"/> | Export:  |
|-------------|--|--|---|
| count(*)    |  |  |   |
| ▶ 8         |  |  |   |

**practiceQuery22:** [book 22] Retrieve the total number of employees in the 'Research' department.

| Result Grid |  | Filter Rows: <input type="text" value="Q Search"/> | Export:  |
|-------------|--|--|---|
| count(*)    |  |  |   |
| ▶ 4         |  |  |   |


**practiceQuery23:** [book 23] Count the number of distinct salary values in the database.

| Result Grid            |  | Filter Rows: <input type="text" value="Q Search"/> | Export:  |
|------------------------|--|--|---|
| count(distinct salary) |  |  |   |
| ▶ 6                    |  |  |   |


**practiceQuery24:** [book 24] For each department, retrieve the department number, the number of employees in the department, and their average salary.

| Result Grid |            | Filter Rows: <input type="text" value="Q Search"/> | Export:  |
|-------------|------------|--|---|
| dnumber     | count(ssn) | avg(salary)  |   |
| ▶ 5         | 4          | 33250.0000   |   |
| 1           | 1          | 55000.0000   |   |
| 4           | 3          | 31000.0000   |   |


**practiceQuery25:** [book 25] For each project, retrieve the project number, the project name, and the number of employees who work on that project. (Null employees will be interpreted as zero employees).

| Result Grid |                 | Filter Rows: <input type="text" value="Q Search"/> | Export:  |
|-------------|-----------------|--|--|
| pnumber     | pname           | count(distinct essn)                               |  |
| ▶ 10        | Computerization | 3  |  |
| 30          | Newbenefits     | 3  |  |
| 1           | ProductX        | 2  |  |
| 2           | ProductY        | 3  |  |
| 3           | ProductZ        | 2  |  |
| 20          | Reorganization  | 3  |  |

**practiceQuery26:** [book 26] 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.

| Result Grid |                 | Filter Rows: <input type="text" value="Q Search"/> | Export:  |
|-------------|-----------------|--|---|
| pnumber     | pname           | count(distinct essn)                               |   |
| ▶ 10        | Computerization | 3  |   |
| 30          | Newbenefits     | 3  |   |
| 2           | ProductY        | 3  |   |
| 20          | Reorganization  | 3  |   |



**practiceQuery27:** [book 27] For each project, retrieve the project number, the project name, and the number of employees from department 5 who work on the project.

| Result Grid |                 | Filter Rows: <input type="text" value="Q Search"/> | Export:  |
|-------------|-----------------|--|---|
| pnumber     | pname           | count(distinct essn)                               |   |
| ▶ 10        | Computerization | 1  |   |
| 30          | Newbenefits     | 0  |   |
| 1           | ProductX        | 2  |   |
| 2           | ProductY        | 3  |   |
| 3           | ProductZ        | 2  |   |
| 20          | Reorganization  | 1  |   |



**practiceQuery28:** [book 28] For each department that has less than four\* employees, retrieve the department number and the number of its employees who are making more than \$25,000\*. (Less than four employees instead of more than five, and \$25,000 instead of \$40,000 to make the results more fruitful.)

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |            |  |
|--|------------|--|
| dno  | count(ssn) |  |
| ▶ 1  | 1          |  |
| 4  | 1          |  |



**practiceQuery29:** [book 1c] Retrieve all of the attribute values for any employee who works in department 5.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |         |           |            |                         |     |        |           |     |
|--|---------|-----------|------------|-------------------------|-----|--------|-----------|-----|
| fname  | lname   | ssn       | bdate      | address                 | sex | salary | superssn  | dno |
| ▶ John   | Smith   | 123456789 | 1965-01-09 | 731 Fondren, Houston TX | M   | 30000  | 333445555 | 5   |
| Franklin   | Wong    | 333445555 | 1955-12-08 | 638 Voss, Houston TX    | M   | 40000  | 888665555 | 5   |
| Joyce  | English | 453453453 | 1972-07-31 | 5631 Rice, Houston TX   | F   | 25000  | 333445555 | 5   |
| Ramesh   | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak, Humble TX | M   | 38000  | 333445555 | 5   |



**practiceQuery30:** [book 1d] Retrieve all of the attributes for each employee and the department for which he or she works.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |         |           |            |                |     |        |           |     |                 |         |           |              |
|--|---------|-----------|------------|----------------|-----|--------|-----------|-----|-----------------|---------|-----------|--------------|
| fname  | lname   | ssn       | bdate      | address        | sex | salary | superssn  | dno | dname           | dnumber | mgrssn    | mgrstartdate |
| ▶ John   | Smith   | 123456789 | 1965-01-09 | 731 Fondren... | M   | 30000  | 333445555 | 5   | Research        | 5       | 333445555 | 1988-05-22   |
| Franklin   | Wong    | 333445555 | 1955-12-08 | 638 Voss, ...  | M   | 40000  | 888665555 | 5   | Research        | 5       | 333445555 | 1988-05-22   |
| Joyce  | English | 453453453 | 1972-07-31 | 5631 Rice, ... | F   | 25000  | 333445555 | 5   | Research        | 5       | 333445555 | 1988-05-22   |
| Ramesh   | Narayan | 666884444 | 1962-09-15 | 975 Fire O...  | M   | 38000  | 333445555 | 5   | Research        | 5       | 333445555 | 1988-05-22   |
| James  | Borg    | 888665555 | 1937-11-10 | 450 Stone, ... | M   | 55000  | NULL      | 1   | Headquarters    | 1       | 888665555 | 1981-06-19   |
| Jennifer   | Wallace | 987654321 | 1941-06-20 | 291 Berry, ... | F   | 43000  | 888665555 | 4   | Administrati... | 4       | 987654321 | 1995-01-01   |
| Ahmad  | Jabbar  | 987987987 | 1969-03-29 | 980 Dallas...  | M   | 25000  | 987654321 | 4   | Administrati... | 4       | 987654321 | 1995-01-01   |
| Alicia   | Zelaya  | 999887777 | 1968-01-19 | 3321 Castl...  | F   | 25000  | 987654321 | 4   | Administrati... | 4       | 987654321 | 1995-01-01   |



**practiceQuery31:** [book 12a] Find the first name, last name and birthdate of the employees who were born during the 1950s.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |       |            |  |
|--|-------|------------|--|
| fname  | lname | bdate      |  |
| ▶ Franklin   | Wong  | 1955-12-08 |  |

**practiceQuery32:** [book 6\_10a] Retrieve the first and last names of all employees in department 5 who work more than 10 hours per week on the ProductX project.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |         |  |
|--|---------|--|
| fname  | lname   |  |
| ▶ John   | Smith   |  |
| Joyce  | English |  |






**practiceQuery33:** [book 6\_10b] List the first and last names of all employees who have a dependent with the same first name as themselves.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |       |
|--|-------|
| fname  | lname |
|  |       |






**practiceQuery34:** [book 6\_10c] Find the first and last names of all employees who are directly supervised by 'Franklin Wong'.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |         |
|--|---------|
| fname  | lname   |
| ▶ John   | Smith   |
| Joyce  | English |
| Ramesh   | Narayan |

**practiceQuery35:** [book 7\_7a] Retrieve the first and last names of all employees who work in the department that has the employee with the highest salary among all employees.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export:  |             |  |  |
|--|-------------|--|---|
| fname  | lname       |  |   |
| ▶ <b>James</b>   | <b>Borg</b> |  |   |

**practiceQuery36:** [book 7\_7b] Retrieve the first and last names of all employees whose supervisor's supervisor has '888665555' for their SSN.






| Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export:  |                |  |  |
|--|----------------|--|---|
| fname  | lname          |  |   |
| ▶ <b>John</b>  | <b>Smith</b>   |  |   |
| <b>Joyce</b>   | <b>English</b> |  |   |
| <b>Ramesh</b>  | <b>Narayan</b> |  |   |
| <b>Ahmad</b>   | <b>Jabbar</b>  |  |   |
| <b>Alicia</b>  | <b>Zelaya</b>  |  |   |

**practiceQuery37:** [book 7\_7c] Retrieve the first and last names of employees who make at least \$10,000 more than the employee who is paid the least in the company.






| Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export:  |                |  |  |
|--|----------------|--|---|
| fname  | lname          |  |   |
| ▶ <b>Franklin</b>  | <b>Wong</b>    |  |   |
| <b>Ramesh</b>  | <b>Narayan</b> |  |   |
| <b>James</b>   | <b>Borg</b>    |  |   |
| <b>Jennifer</b>  | <b>Wallace</b> |  |   |

### Practice Queries: Introductory Level Select Only

**practiceQuery40:** Display the words 'Hello World!'

| Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export:  |  |  |  |
|--|--|--|---|
| Hello World!   |  |  |   |
| ▶ <b>Hello World!</b>  |  |  |   |






**practiceQuery41:** Display the words 'Hello World!' as a 'greeting'

| Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export:  |  |  |  |
|--|--|--|---|
| greeting   |  |  |   |
| ▶ <b>Hello World!</b>  |  |  |   |

**practiceQuery42:** Display the sum of 4 and 6

| Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export:  |  |  |  |
|--|--|--|---|
| 4 + 6  |  |  |   |
| ▶ <b>10</b>  |  |  |   |

**practiceQuery43:** Display the sum of 4 and 6, the product of 3 and 7, and the difference of 9 and 5

| Result Grid   Filter Rows: <input type="text" value="Q Search"/>  Export:  |            |               |  |
|--|------------|---------------|---|
| my_sum   | my_product | my_difference |   |
| ▶ <b>10</b>  | <b>21</b>  | <b>4</b>      |   |

**practiceQuery44:** Display the entire contents of the employees table



| Result Grid |         |           |            |                         |     |        |           |     |  | Filter Rows: | Q Search | Export: |  |
|-------------|---------|-----------|------------|-------------------------|-----|--------|-----------|-----|--|--------------|----------|---------|--|
| fname       | lname   | ssn       | bdate      | address                 | sex | salary | superssn  | dno |  |              |          |         |  |
| John        | Smith   | 123456789 | 1965-01-09 | 731 Fondren, Houston TX | M   | 30000  | 333445555 | 5   |  |              |          |         |  |
| Franklin    | Wong    | 333445555 | 1955-12-08 | 638 Voss, Houston TX    | M   | 40000  | 888665555 | 5   |  |              |          |         |  |
| Joyce       | English | 453453453 | 1972-07-31 | 5631 Rice, Houston TX   | F   | 25000  | 333445555 | 5   |  |              |          |         |  |
| Ramesh      | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak, Humble TX | M   | 38000  | 333445555 | 5   |  |              |          |         |  |
| James       | Borg    | 888665555 | 1937-11-10 | 450 Stone, Houston TX   | M   | 55000  | NULL      | 1   |  |              |          |         |  |
| Jennifer    | Wallace | 987654321 | 1941-06-20 | 291 Berry, Bellaire TX  | F   | 43000  | 888665555 | 4   |  |              |          |         |  |
| Ahmad       | Jabbar  | 987987987 | 1969-03-29 | 980 Dallas, Houston TX  | M   | 25000  | 987654321 | 4   |  |              |          |         |  |
| Alicia      | Zelaya  | 999887777 | 1968-01-19 | 3321 Castle, Spring TX  | F   | 25000  | 987654321 | 4   |  |              |          |         |  |

## Practice Queries: Select – From – Where – Order By

**practiceQuery50:** Display the first name, last name and address of all employees.

| Result Grid |         |                         | Filter Rows: <input type="text" value="Search"/> | Export: |  |
|-------------|---------|-------------------------|--|---------|--|
| fname       | lname   | address                 |  |         |  |
| John        | Smith   | 731 Fondren, Houston TX |  |         |  |
| Franklin    | Wong    | 638 Voss, Houston TX    |  |         |  |
| Joyce       | English | 5631 Rice, Houston TX   |  |         |  |
| Ramesh      | Narayan | 975 Fire Oak, Humble TX |  |         |  |
| James       | Borg    | 450 Stone, Houston TX   |  |         |  |
| Jennifer    | Wallace | 291 Berry, Bellaire TX  |  |         |  |
| Ahmad       | Jabbar  | 980 Dallas, Houston TX  |  |         |  |
| Alicia      | Zelaya  | 3321 Castle, Spring TX  |  |         |  |

**practiceQuery51:** Display the last name in a column titled 'Last Name', first name in a column titled 'First Name', and address in a column titled 'Residence Location' for all employees.

| Result Grid |            | Filter Rows: <input type="text" value="Search"/> | Export:  |  |
|-------------|------------|--|---|---|
| Last Name   | First Name | Residence Location                               |   |   |
| ► Smith     | John       | 731 Fondren, Houston TX                          |   |   |
| Wong        | Franklin   | 638 Voss, Houston TX                             |   |   |
| English     | Joyce      | 5631 Rice, Houston TX                            |   |   |
| Narayan     | Ramesh     | 975 Fire Oak, Humble TX                          |   |   |
| Borg        | James      | 450 Stone, Houston TX                            |   |   |
| Wallace     | Jennifer   | 291 Berry, Bellaire TX                           |   |   |
| Jabbar      | Ahmad      | 980 Dallas, Houston TX                           |   |   |
| Zelaya      | Alicia     | 3321 Castle, Spring TX                           |   |   |

**practiceQuery52:** Retrieve the first name, last name and address of all employees, and display the first and last name as a combined 'Whole Name'.

| Result Grid |                  |                         | Filter Rows: | Q Search | Export: |
|-------------|------------------|-------------------------|--------------|----------|---------|
| Whole Name  |                  | address                 |              |          |         |
| ▶           | John Smith       | 731 Fondren, Houston TX |              |          |         |
|             | Franklin Wong    | 638 Voss, Houston TX    |              |          |         |
|             | Joyce English    | 5631 Rice, Houston TX   |              |          |         |
|             | Ramesh Narayan   | 975 Fire Oak, Humble TX |              |          |         |
|             | James Borg       | 450 Stone, Houston TX   |              |          |         |
|             | Jennifer Wallace | 291 Berry, Bellaire TX  |              |          |         |
|             | Ahmad Jabbar     | 980 Dallas, Houston TX  |              |          |         |
|             | Alicia Zelaya    | 3321 Castle, Spring TX  |              |          |         |



**practiceQuery53:** Retrieve the department numbers for all employees.

| Result Grid | Filter Rows: <input type="text" value="Search"/> | Export: |
|-------------|--|---------|
| dno         |  |         |
| 5           |  |         |
| 5           |  |         |
| 5           |  |         |
| 5           |  |         |
| 1           |  |         |
| 4           |  |         |
| 4           |  |         |
| 4           |  |         |

**practiceQuery54:** Retrieve the unique department numbers for all employees.

| Result Grid | Filter Rows: <input type="text" value="Search"/> | Export: |
|-------------|--|---------|
| dno         |  |         |
| 5           |  |         |
| 1           |  |         |
| 4           |  |         |

**practiceQuery55:** Retrieve the salary and department number combinations for all employees.

| Result Grid | Filter Rows: <input type="text" value="Search"/> | Export: |
|-------------|--|---------|
| salary      | dno  |         |
| 30000       | 5  |         |
| 40000       | 5  |         |
| 25000       | 5  |         |
| 38000       | 5  |         |
| 55000       | 1  |         |
| 43000       | 4  |         |
| 25000       | 4  |         |
| 25000       | 4  |         |

**practiceQuery56:** Retrieve the distinct salary and department number combinations for all employees.

| Result Grid | Filter Rows: <input type="text" value="Search"/> | Export: |
|-------------|--|---------|
| salary      | dno  |         |
| 30000       | 5  |         |
| 40000       | 5  |         |
| 25000       | 5  |         |
| 38000       | 5  |         |
| 55000       | 1  |         |
| 43000       | 4  |         |
| 25000       | 4  |         |

**practiceQuery60:** Retrieve the first name, last name and address of all employees in department 5.

Result Grid

Filter Rows:

Q Search

Export:

| fname    | lname   | address                 |
|----------|---------|-------------------------|
| John     | Smith   | 731 Fondren, Houston TX |
| Franklin | Wong    | 638 Voss, Houston TX    |
| Joyce    | English | 5631 Rice, Houston TX   |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX |

**practiceQuery61:** Retrieve the first name, last name and address of all employees who are not in department 5.




Result Grid

Filter Rows:




Export:

| fname    | lname   | address                |  |
|----------|---------|------------------------|--|
| James    | Borg    | 450 Stone, Houston TX  |  |
| Jennifer | Wallace | 291 Berry, Bellaire TX |  |
| Ahmad    | Jabbar  | 980 Dallas, Houston TX |  |
| Alicia   | Zelaya  | 3321 Castle, Spring TX |  |



**practiceQuery62:** Retrieve the first name, last name and address of all employees who earn more than 30000 in salary.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                         |  |
|--|---------|-------------------------|--|
| fname  | lname   | address                 |  |
| ▶ Franklin   | Wong    | 638 Voss, Houston TX    |  |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX |  |
| James  | Borg    | 450 Stone, Houston TX   |  |
| Jennifer   | Wallace | 291 Berry, Bellaire TX  |  |




**practiceQuery63:** Retrieve the first name, last name and address of all employees who are in department 5 or earn more than 30000 in salary.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                         |  |
|--|---------|-------------------------|--|
| fname  | lname   | address                 |  |
| ▶ John   | Smith   | 731 Fondren, Houston TX |  |
| Franklin   | Wong    | 638 Voss, Houston TX    |  |
| Joyce  | English | 5631 Rice, Houston TX   |  |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX |  |
| James  | Borg    | 450 Stone, Houston TX   |  |
| Jennifer   | Wallace | 291 Berry, Bellaire TX  |  |




**practiceQuery64:** Retrieve the first name, last name and address of all employees who are in department 5 and earn more than 30000 in salary.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                         |  |
|--|---------|-------------------------|--|
| fname  | lname   | address                 |  |
| ▶ Franklin   | Wong    | 638 Voss, Houston TX    |  |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX |  |




**practiceQuery65:** Retrieve the first name, last name, address and birthdate of all employees born after January 1st, 1968.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                        |            |  |
|--|---------|------------------------|------------|--|
| fname  | lname   | address                | bdate      |  |
| ▶ Joyce  | English | 5631 Rice, Houston TX  | 1972-07-31 |  |
| Ahmad  | Jabbar  | 980 Dallas, Houston TX | 1969-03-29 |  |
| Alicia   | Zelaya  | 3321 Castle, Spring TX | 1968-01-19 |  |




**practiceQuery66:** Retrieve the first name, last name, address and birthdate of all employees born after January 1st, 1964 and before August 10th, 1970.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |        |                         |            |  |
|--|--------|-------------------------|------------|--|
| fname  | lname  | address                 | bdate      |  |
| ▶ John   | Smith  | 731 Fondren, Houston TX | 1965-01-09 |  |
| Ahmad  | Jabbar | 980 Dallas, Houston TX  | 1969-03-29 |  |
| Alicia   | Zelaya | 3321 Castle, Spring TX  | 1968-01-19 |  |




**practiceQuery67:** Retrieve the first name, last name and address of all employees in first name order.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                         |  |
|--|---------|-------------------------|--|
| fname  | lname   | address                 |  |
| ▶ Ahmad  | Jabbar  | 980 Dallas, Houston TX  |  |
| Alicia   | Zelaya  | 3321 Castle, Spring TX  |  |
| Franklin   | Wong    | 638 Voss, Houston TX    |  |
| James  | Borg    | 450 Stone, Houston TX   |  |
| Jennifer   | Wallace | 291 Berry, Bellaire TX  |  |
| John   | Smith   | 731 Fondren, Houston TX |  |
| Joyce  | English | 5631 Rice, Houston TX   |  |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX |  |




**practiceQuery68:** Retrieve the first name, last name and address of all employees in descending last name order.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                         |  |
|--|---------|-------------------------|--|
| fname  | lname   | address                 |  |
| ▶ Alicia   | Zelaya  | 3321 Castle, Spring TX  |  |
| Franklin   | Wong    | 638 Voss, Houston TX    |  |
| Jennifer   | Wallace | 291 Berry, Bellaire TX  |  |
| John   | Smith   | 731 Fondren, Houston TX |  |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX |  |
| Ahmad  | Jabbar  | 980 Dallas, Houston TX  |  |
| Joyce  | English | 5631 Rice, Houston TX   |  |
| James  | Borg    | 450 Stone, Houston TX   |  |




**practiceQuery69:** Retrieve the first name and address of all employees in last name order (descending).

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |                         |  |  |
|--|-------------------------|--|--|
| fname  | address                 |  |  |
| ▶ Alicia   | 3321 Castle, Spring TX  |  |  |
| Franklin   | 638 Voss, Houston TX    |  |  |
| Jennifer   | 291 Berry, Bellaire TX  |  |  |
| John   | 731 Fondren, Houston TX |  |  |
| Ramesh   | 975 Fire Oak, Humble TX |  |  |
| Ahmad  | 980 Dallas, Houston TX  |  |  |
| Joyce  | 5631 Rice, Houston TX   |  |  |
| James  | 450 Stone, Houston TX   |  |  |




**practiceQuery70:** Retrieve the first name, last name and address of all employees in the order of last name and then first name.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                         |  |
|---|---------|-------------------------|--|
| fname   | lname   | address                 |  |
| ▶ James   | Borg    | 450 Stone, Houston TX   |  |
| Joyce   | English | 5631 Rice, Houston TX   |  |
| Ahmad   | Jabbar  | 980 Dallas, Houston TX  |  |
| Ramesh  | Narayan | 975 Fire Oak, Humble TX |  |
| John  | Smith   | 731 Fondren, Houston TX |  |
| Jennifer  | Wallace | 291 Berry, Bellaire TX  |  |
| Franklin  | Wong    | 638 Voss, Houston TX    |  |
| Alicia  | Zelaya  | 3321 Castle, Spring TX  |  |

**practiceQuery71:** Retrieve the first name, last name and address of all employees who live in Houston.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                         |  |
|--|---------|-------------------------|--|
| fname  | lname   | address                 |  |
| ▶ John   | Smith   | 731 Fondren, Houston TX |  |
| Franklin   | Wong    | 638 Voss, Houston TX    |  |
| Joyce  | English | 5631 Rice, Houston TX   |  |
| James  | Borg    | 450 Stone, Houston TX   |  |
| Ahmad  | Jabbar  | 980 Dallas, Houston TX  |  |

**practiceQuery72:** Retrieve the first name, last name and address of all employees who live in Dallas.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |        |                        |  |
|--|--------|------------------------|--|
| fname  | lname  | address                |  |
| ▶ Ahmad  | Jabbar | 980 Dallas, Houston TX |  |

**practiceQuery73:** Retrieve the first name, last name and address of all employees whose first names begin with the letter 'J'.

| fname    | lname   | address                 |
|----------|---------|-------------------------|
| John     | Smith   | 731 Fondren, Houston TX |
| Joyce    | English | 5631 Rice, Houston TX   |
| James    | Borg    | 450 Stone, Houston TX   |
| Jennifer | Wallace | 291 Berry, Bellaire TX  |

**practiceQuery74:** Retrieve the first name, last name and address of all employees whose last names contain the pattern 'aya'.

| fname  | lname   | address                 |
|--------|---------|-------------------------|
| Ramesh | Narayan | 975 Fire Oak, Humble TX |
| Alicia | Zelaya  | 3321 Castle, Spring TX  |

**practiceQuery75:** Retrieve the first name, last name and address of all employees whose last names contain the pattern 'aya' where the pattern is not at the end of the string.

| fname  | lname   | address                 |
|--------|---------|-------------------------|
| Ramesh | Narayan | 975 Fire Oak, Humble TX |

### Practice Queries: Select – From – Where – Group By – Having – Order By (with Aggregates)

**practiceQuery80:** Retrieve the first name, last name and salary of the employees in department number 5 if they were all given a 10% raise in salary.

| fname    | lname   | raise      |
|----------|---------|------------|
| John     | Smith   | 33000.0000 |
| Franklin | Wong    | 44000.0000 |
| Joyce    | English | 27500.0000 |
| Ramesh   | Narayan | 41800.0000 |

**practiceQuery81:** Retrieve the sum of the salaries for all employees in department number 5.

| sum(salary) |
|-------------|
| 133000      |

**practiceQuery82:** Retrieve the smallest and largest salaries for all employees in department number 5.

| min(salary) | max(salary) |
|-------------|-------------|
| 25000       | 40000       |

**practiceQuery83:** Retrieve the number of different salaries for all employees.

| count(distinct salary) |
|------------------------|
| 6                      |

**practiceQuery84:** Retrieve the number of Supervisor's Social Security Numbers (superssn) without duplicates.

| count(distinct superssn) |
|--------------------------|
| 3                        |

**practiceQuery85:** Retrieve the number of employees whose superssn is equal to 333445555.

| Result Grid | Filter Rows: <input type="text" value="Search"/> | Export: |
|-------------|--|---------|
| count(*)    |  |         |
| ▶ 3         |  |         |

**practiceQuery86:** Retrieve the number of employees whose superssn is not equal to 333445555.

| Result Grid | Filter Rows: <input type="text" value="Search"/> | Export: |
|-------------|--|---------|
| count(*)    |  |         |
| ▶ 4         |  |         |

**practiceQuery87:** Retrieve the total number of employees.

| Result Grid | Filter Rows: <input type="text" value="Search"/> | Export: |
|-------------|--|---------|
| count(*)    |  |         |
| ▶ 8         |  |         |

**practiceQuery88:** Retrieve the minimum, average and maximum salary for the employees in each department.

Result Grid

Filter Rows: 

Search

Export:

| dno | min(salary) | avg(salary) | max(salary) |  |
|-----|-------------|-------------|-------------|--|
| ▶ 5 | 25000       | 33250.0000  | 40000       |  |
| 1   | 55000       | 55000.0000  | 55000       |  |
| 4   | 25000       | 31000.0000  | 43000       |  |
|     |             |             |             |  |

**practiceQuery89:** Retrieve the minimum, average and maximum salary for the employees in each department with less than four employees.

Result Grid

Filter Rows:

Export:

| dno | min(salary) | avg(salary) | max(salary) |
|-----|-------------|-------------|-------------|
| ▶ 1 | 55000       | 55000.0000  | 55000       |
| 4   | 25000       | 31000.0000  | 43000       |

### Practice Queries: Nested Queries & Set Operations (including Union & Correlated Subqueries)

**practiceQuery100:** Retrieve the total number of employees whose salaries exceed \$25,000 in each department.

Result Grid

Filter Rows:

Export:

| dno | count(*) |  |
|-----|----------|--|
| ▶ 5 | 3        |  |
| 1   | 1        |  |
| 4   | 1        |  |

**practiceQuery101:** Retrieve the total number of employees whose salaries exceed \$25,000 in all of the departments except Headquarters.

Result Grid


Filter Rows:

Search

Export:

| dno | count(*) |  |
|-----|----------|--|
| ▶ 5 | 3        |  |
| 4   | 1        |  |

**practiceQuery102:** Retrieve the department numbers for departments where fewer than four employees work.

|             |  |  |   |   |
|-------------|--|--|---|---|
| Result Grid |  |  Filter Rows: <input type="text" value="Search"/> | Export:  |  |
| dno         |  |  |   |   |
| ▶ 1         |  |  |   |   |
| 4           |  |  |   |   |

**practiceQuery103:** Retrieve the total number of employees whose salaries exceed \$25,000 per department, but only for departments where fewer than four employees work.

Result Grid

Filter Rows:

Search

Export:

| dno | count(*) |  |
|-----|----------|--|
| ▶ 1 | 1        |  |
| 4   | 1        |  |

**practiceQuery104:** Retrieve the first name, last name and address for each employee that has a dependent daughter.

| Result Grid |       | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|-------|--|---------|
| fname       | lname | address  |         |
| ▶ John      | Smith | 731 Fondren, Houston TX                            |         |
| Franklin    | Wong  | 638 Voss, Houston TX                               |         |

**practiceQuery105:** Retrieve the first name, last name and address for each employee that is working on a project that is located in Houston.

| Result Grid |         | Filter Rows: <input type="text" value="Q Search"/> | Export: |
|-------------|---------|--|---------|
| fname       | lname   | address  |         |
| ▶ Franklin  | Wong    | 638 Voss, Houston TX                               |         |
| Ramesh      | Narayan | 975 Fire Oak, Humble TX                            |         |
| James       | Borg    | 450 Stone, Houston TX                              |         |
| Jennifer    | Wallace | 291 Berry, Bellaire TX                             |         |

**practiceQuery106:** Retrieve the Social Security Number (ssn) of employees who earn more than 25000 in salary or work on project 20.

Result Grid

Filter Rows:

Search

Export:

| ssn         |  |
|-------------|--|
| ▶ 123456789 |  |
| 333445555   |  |
| 666884444   |  |
| 888665555   |  |
| 987654321   |  |

**practiceQuery107:** Retrieve the Social Security Number (ssn) of each employee who earns more than 25000 in salary and also works on project 20.

Result Grid

Filter Rows:

Search

Export:

| ssn         |  |
|-------------|--|
| ▶ 333445555 |  |
| 888665555   |  |
| 987654321   |  |

**practiceQuery108:** Retrieve the Social Security Number (ssn) of each employee who earns more than 25000 in salary but doesn't work on project 20.

Result Grid

Filter Rows:

Q Search

Export:

ssn

▶ 123456789

666884444

## Practice Queries: Cartesian Products & Joins (Inner, Outer & Natural)

**practiceQuery120:** Display the first name, last name, address, department number (dno and dnumber) and department name for all combinations of the employee and department record sets.

| fname    | lname   | address                 | dno | dnumber | dname          |
|----------|---------|-------------------------|-----|---------|----------------|
| John     | Smith   | 731 Fondren, Houston TX | 5   | 1       | Headquarters   |
| John     | Smith   | 731 Fondren, Houston TX | 5   | 4       | Administration |
| John     | Smith   | 731 Fondren, Houston TX | 5   | 5       | Research       |
| Franklin | Wong    | 638 Voss, Houston TX    | 5   | 1       | Headquarters   |
| Franklin | Wong    | 638 Voss, Houston TX    | 5   | 4       | Administration |
| Franklin | Wong    | 638 Voss, Houston TX    | 5   | 5       | Research       |
| Joyce    | English | 5631 Rice, Houston TX   | 5   | 1       | Headquarters   |
| Joyce    | English | 5631 Rice, Houston TX   | 5   | 4       | Administration |
| Joyce    | English | 5631 Rice, Houston TX   | 5   | 5       | Research       |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX | 5   | 1       | Headquarters   |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX | 5   | 4       | Administration |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX | 5   | 5       | Research       |
| James    | Borg    | 450 Stone, Houston TX   | 1   | 1       | Headquarters   |
| James    | Borg    | 450 Stone, Houston TX   | 1   | 4       | Administration |
| James    | Borg    | 450 Stone, Houston TX   | 1   | 5       | Research       |
| Jennifer | Wallace | 291 Berry, Bellaire TX  | 4   | 1       | Headquarters   |

**truncated results shown – full result set has 24 rows**

**practiceQuery121:** Retrieve the first name, last name, address, department name and number of all employees. [USE CARTESIAN PRODUCT TECHNIQUE]

**practiceQuery122:** Retrieve the first name, last name, address, department name and number of all employees. [USE INNER JOIN TECHNIQUE]


**practiceQuery123:** Retrieve the first name, last name, address, department name and number of all employees. [USE NATURAL JOIN TECHNIQUE]

| fname    | lname   | address                 | dname          | dno |
|----------|---------|-------------------------|----------------|-----|
| John     | Smith   | 731 Fondren, Houston TX | Research       | 5   |
| Franklin | Wong    | 638 Voss, Houston TX    | Research       | 5   |
| Joyce    | English | 5631 Rice, Houston TX   | Research       | 5   |
| Ramesh   | Narayan | 975 Fire Oak, Humble TX | Research       | 5   |
| James    | Borg    | 450 Stone, Houston TX   | Headquarters   | 1   |
| Jennifer | Wallace | 291 Berry, Bellaire TX  | Administration | 4   |
| Ahmad    | Jabbar  | 980 Dallas, Houston TX  | Administration | 4   |
| Alicia   | Zelaya  | 3321 Castle, Spring TX  | Administration | 4   |



**practiceQuery124:** Retrieve the employee's first and last name and address, along with their supervisor's Social Security Number, first and last names for all employees.

| work_fname | work_lname | address                 | superssn  | fname    | lname   |
|------------|------------|-------------------------|-----------|----------|---------|
| John       | Smith      | 731 Fondren, Houston TX | 333445555 | Franklin | Wong    |
| Joyce      | English    | 5631 Rice, Houston TX   | 333445555 | Franklin | Wong    |
| Ramesh     | Narayan    | 975 Fire Oak, Humble TX | 333445555 | Franklin | Wong    |
| Franklin   | Wong       | 638 Voss, Houston TX    | 888665555 | James    | Borg    |
| Jennifer   | Wallace    | 291 Berry, Bellaire TX  | 888665555 | James    | Borg    |
| Ahmad      | Jabbar     | 980 Dallas, Houston TX  | 987654321 | Jennifer | Wallace |
| Alicia     | Zelaya     | 3321 Castle, Spring TX  | 987654321 | Jennifer | Wallace |
| James      | Borg       | 450 Stone, Houston TX   | NULL      | NULL     | NULL    |



**practiceQuery125:** Retrieve the name and birthdate of all dependents, along with the first and last name of their sponsor (employee). Include the names of all employees in your response, to include the first and last names of employees who don't have any dependents.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |            |          |         |  |
|--|------------|----------|---------|--|
| dependent_name   | bdate      | fname    | lname   |  |
| ▶ Alice  | 1988-12-30 | John     | Smith   |  |
| Elizabeth  | 1967-05-05 | John     | Smith   |  |
| Michael  | 1988-01-04 | John     | Smith   |  |
| Alice  | 1986-04-04 | Franklin | Wong    |  |
| Joy  | 1958-05-03 | Franklin | Wong    |  |
| Theodore   | 1983-10-25 | Franklin | Wong    |  |
| Abner  | 1942-02-28 | Jennifer | Wallace |  |
| NULL   | NULL       | Joyce    | English |  |
| NULL   | NULL       | Ramesh   | Narayan |  |
| NULL   | NULL       | James    | Borg    |  |
| NULL   | NULL       | Ahmad    | Jabbar  |  |
| NULL   | NULL       | Alicia   | Zelaya  |  |



**practiceQuery126:** Retrieve the first and last name, department number and department name for all department managers.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                |         |  |
|--|---------|----------------|---------|--|
| fname  | lname   | dname          | dnumber |  |
| ▶ Franklin   | Wong    | Research       | 5       |  |
| James  | Borg    | Headquarters   | 1       |  |
| Jennifer   | Wallace | Administration | 4       |  |

**practiceQuery127:** Retrieve the first and last name, department number of all employees, along with the name of the department that they manage (if applicable).




| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |         |     |                |  |
|--|---------|-----|----------------|--|
| fname  | lname   | dno | dname          |  |
| ▶ James  | Borg    | 1   | Headquarters   |  |
| Jennifer   | Wallace | 4   | Administration |  |
| Franklin   | Wong    | 5   | Research       |  |
| John   | Smith   | 5   | NULL           |  |
| Joyce  | English | 5   | NULL           |  |
| Ramesh   | Narayan | 5   | NULL           |  |
| Ahmad  | Jabbar  | 4   | NULL           |  |
| Alicia   | Zelaya  | 4   | NULL           |  |

**practiceQuery128:** Display the first and last names of employees along with the names of projects that are located in the city where they live (using the employee's address). Include the employee's address along with the project's location.

| Result Grid  Filter Rows: <input type="text" value="Q Search"/> Export:  |         |                         |                |           |  |
|--|---------|-------------------------|----------------|-----------|--|
| fname  | lname   | address                 | pname          | plocation |  |
| ▶ John   | Smith   | 731 Fondren, Houston TX | ProductZ       | Houston   |  |
| John   | Smith   | 731 Fondren, Houston TX | Reorganization | Houston   |  |
| Franklin   | Wong    | 638 Voss, Houston TX    | ProductZ       | Houston   |  |
| Franklin   | Wong    | 638 Voss, Houston TX    | Reorganization | Houston   |  |
| Joyce  | English | 5631 Rice, Houston TX   | ProductZ       | Houston   |  |
| Joyce  | English | 5631 Rice, Houston TX   | Reorganization | Houston   |  |
| James  | Borg    | 450 Stone, Houston TX   | ProductZ       | Houston   |  |
| James  | Borg    | 450 Stone, Houston TX   | Reorganization | Houston   |  |
| Jennifer   | Wallace | 291 Berry, Bellaire TX  | ProductX       | Bellaire  |  |
| Ahmad  | Jabbar  | 980 Dallas, Houston TX  | ProductZ       | Houston   |  |
| Ahmad  | Jabbar  | 980 Dallas, Houston TX  | Reorganization | Houston   |  |



**practiceQuery129:** Find the first and last names and birthdates of the employees (supervisors included) who are old as (or older than) one or more of the department managers. Include the first and last names and birthdates of the managers as well.

| Result Grid   Filter Rows: <input type="text" value="Q Search"/> Export:  |            |            |          |         |            |  |
|--|------------|------------|----------|---------|------------|--|
| work_fname   | work_lname | work_bdate | fname    | lname   | bdate      |  |
| ▶ James  | Borg       | 1937-11-10 | Franklin | Wong    | 1955-12-08 |  |
| James  | Borg       | 1937-11-10 | Jennifer | Wallace | 1941-06-20 |  |
| Jennifer   | Wallace    | 1941-06-20 | Franklin | Wong    | 1955-12-08 |  |