

## The Company Database Schema and state (i.e., the data)

### EMPLOYEE

|       |       |       |            |       |         |     |        |           |     |
|-------|-------|-------|------------|-------|---------|-----|--------|-----------|-----|
| Fname | Minit | Lname | <u>Ssn</u> | Bdate | Address | Sex | Salary | Super_ssn | Dno |
|-------|-------|-------|------------|-------|---------|-----|--------|-----------|-----|

### DEPARTMENT

|       |                |         |                |
|-------|----------------|---------|----------------|
| Dname | <u>Dnumber</u> | Mgr_ssn | Mgr_start_date |
|-------|----------------|---------|----------------|

### DEPT\_LOCATIONS

|                |                  |
|----------------|------------------|
| <u>Dnumber</u> | <u>Dlocation</u> |
|----------------|------------------|

### PROJECT

|       |                |           |      |
|-------|----------------|-----------|------|
| Pname | <u>Pnumber</u> | Plocation | Dnum |
|-------|----------------|-----------|------|

### WORKS\_ON

|             |            |       |
|-------------|------------|-------|
| <u>Essn</u> | <u>Pno</u> | Hours |
|-------------|------------|-------|

### DEPENDENT

|             |                       |     |       |              |
|-------------|-----------------------|-----|-------|--------------|
| <u>Essn</u> | <u>Dependent_name</u> | Sex | Bdate | Relationship |
|-------------|-----------------------|-----|-------|--------------|

**Figure 3.7**

Referential integrity constraints displayed on the COMPANY relational database schema.

## The Company Database Schema and state (i.e., the data)

**Figure 3.6**

One possible database state for the COMPANY relational database schema.

### EMPLOYEE

| Fname    | Minit | Lname   | <u>Ssn</u> | Bdate      | Address                  | Sex | Salary | Super_ssn | Dno |
|----------|-------|---------|------------|------------|--------------------------|-----|--------|-----------|-----|
| John     | B     | Smith   | 123456789  | 1965-01-09 | 731 Fondren, Houston, TX | M   | 30000  | 333445555 | 5   |
| Franklin | T     | Wong    | 333445555  | 1955-12-08 | 638 Voss, Houston, TX    | M   | 40000  | 888665555 | 5   |
| Alicia   | J     | Zelaya  | 999887777  | 1968-01-19 | 3321 Castle, Spring, TX  | F   | 25000  | 987654321 | 4   |
| Jennifer | S     | Wallace | 987654321  | 1941-06-20 | 291 Berry, Bellaire, TX  | F   | 43000  | 888665555 | 4   |
| Ramesh   | K     | Narayan | 666884444  | 1962-09-15 | 975 Fire Oak, Humble, TX | M   | 38000  | 333445555 | 5   |
| Joyce    | A     | English | 453453453  | 1972-07-31 | 5631 Rice, Houston, TX   | F   | 25000  | 333445555 | 5   |
| Ahmad    | V     | Jabbar  | 987987987  | 1969-03-29 | 980 Dallas, Houston, TX  | M   | 25000  | 987654321 | 4   |
| James    | E     | Borg    | 888665555  | 1937-11-10 | 450 Stone, Houston, TX   | M   | 55000  | NULL      | 1   |

### DEPARTMENT

| Dname          | <u>Dnumber</u> | Mgr_ssn   | Mgr_start_date |
|----------------|----------------|-----------|----------------|
| Research       | 5              | 333445555 | 1988-05-22     |
| Administration | 4              | 987654321 | 1995-01-01     |
| Headquarters   | 1              | 888665555 | 1981-06-19     |

### DEPT\_LOCATIONS

| <u>Dnumber</u> | <u>Dlocation</u> |
|----------------|------------------|
| 1              | Houston          |
| 4              | Stafford         |
| 5              | Bellaire         |
| 5              | Sugarland        |
| 5              | Houston          |

### WORKS\_ON

| <u>Essn</u> | <u>Pno</u> | Hours |
|-------------|------------|-------|
| 123456789   | 1          | 32.5  |
| 123456789   | 2          | 7.5   |
| 666884444   | 3          | 40.0  |
| 453453453   | 1          | 20.0  |
| 453453453   | 2          | 20.0  |
| 333445555   | 2          | 10.0  |
| 333445555   | 3          | 10.0  |
| 333445555   | 10         | 10.0  |
| 333445555   | 20         | 10.0  |
| 999887777   | 30         | 30.0  |
| 999887777   | 10         | 10.0  |
| 987987987   | 10         | 35.0  |
| 987987987   | 30         | 5.0   |
| 987654321   | 30         | 20.0  |
| 987654321   | 20         | 15.0  |
| 888665555   | 20         | NULL  |

### PROJECT

| Pname           | <u>Pnumber</u> | Plocation | Dnum |
|-----------------|----------------|-----------|------|
| ProductX        | 1              | Bellaire  | 5    |
| ProductY        | 2              | Sugarland | 5    |
| ProductZ        | 3              | Houston   | 5    |
| Computerization | 10             | Stafford  | 4    |
| Reorganization  | 20             | Houston   | 1    |
| Newbenefits     | 30             | Stafford  | 4    |

### DEPENDENT

| <u>Essn</u> | <u>Dependent_name</u> | Sex | Bdate      | Relationship |
|-------------|-----------------------|-----|------------|--------------|
| 333445555   | Alice                 | F   | 1986-04-05 | Daughter     |
| 333445555   | Theodore              | M   | 1983-10-25 | Son          |
| 333445555   | Joy                   | F   | 1958-05-03 | Spouse       |
| 987654321   | Abner                 | M   | 1942-02-28 | Spouse       |
| 123456789   | Michael               | M   | 1988-01-04 | Son          |
| 123456789   | Alice                 | F   | 1988-12-30 | Daughter     |
| 123456789   | Elizabeth             | F   | 1967-05-05 | Spouse       |