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|-----|----------------------|---------|

**Homework #5: Relational Algebra, Subqueries, and Joins**          **(2191)**
**Due Date:  Sunday 11/10/2019 @ 6:00pm**

Unions, Intersections and differences   All topics of Homework #5.

Note: submissions must be made to the appropriate dropbox – see below.

In this lab you will utilize the JOBS database to explore the use of relational algebra, subqueries, and joins within MySQL. This exploration will help you to formulate strategies for query composition when a specified set of data needs to be found within a database.

## Download and install the JOBS database

In my Courses section - Script files SOURCE download the file **createJOBS.sql**
Run the script file

Familiarize yourself with the structure of the JOBS database by examining the 'createJOBS.sql' script as well as reviewing the information provided in appendix A.

## Query the database

For each of the tasks that follow you will write a SQL statement that will answer the question given the specifications provided. The results you should achieve are shown after each task (if your records appear in a different order but the content is the same, that is fine). The SQL statements for ALL questions should be placed in **one script** that follows the format '*yourlastname_HW5.sql.* After your script file is error free and you have the MySQL –VERBOSE option on, create a tee file yourlastname_HW5.txt.  Run your script file once this tee file is open.

## Submitting your work

To get credit for this homework you will need to upload your script file and log (TEE) file to the ASSIGMENT drop box HW#5.  The deadline for submission is given at the top of this handout. Please don't put them in a zip file.

1. Write a SQL statement that will UNION the following two queries together using the UNION keyword:
   a. Show the companyname, division, and listing for those interviews where a listing was posted (indicated by a 'y').
   b. Show the companyname, division, and listing for those interviews where a listing was not posted (indicated by a 'n').

```
+-----------------------------+------------------+---------+
| companyname                 | division         | listing |
+-----------------------------+------------------+---------+
| Braddock Information Assoc.  | Payroll          | n       |
| Vegas Programming and Design | Development      | n       |
| Cameron Industries          | Management       | n       |
| Cameron Industries          | Customer Support | n       |
| CCC Software                | Production       | n       |
| DC Security Applications    | RandD            | n       |
| Davis-Klein Software        | RandD            | n       |
| Flordia Software Designs    | RandD            | n       |
| Rochester Software Design   | Development      | n       |
| Jersey Computer Services    | Customer Support | n       |
| Flordia Software Designs    | Development      | n       |
| Sandy Hook Software         | Development      | n       |
| Virginia Software Industries | Production      | n       |
| Acme Information Source     | Customer Support | y       |
| Ajax Software, Inc.         | Production       | y       |
| Ajax Software, Inc.         | RandD            | y       |
| Bay Software Inc.           | Production       | y       |
| Mountainside Magic Software | Management       | y       |
| Mountainside Magic Software | Customer Support | y       |
| Focused Applications, Inc.  | Production       | y       |
| Georgia Software Design     | RandD            | y       |
| ApplDesign                  | RandD            | y       |
| Long Island Apps, Inc.      | Development      | y       |
| Manhattan-Made Software     | Customer Support | y       |
| Manhattan-Made Software     | Payroll          | y       |
| Nantucket Applications, Inc. | RandD           | y       |
| PennState Programming, Inc. | Management       | y       |
| Buffalo Software Assoc.     | Payroll          | y       |
+-----------------------------+------------------+---------+
28 rows in set (0.00 sec)
```

2. Write a SQL INNER JOIN statement that will accomplish an intersection between the employer and the interview tables. Display the companyname, division, and statecode attributes from the employer table. (Hint: Make sure you are joining on the **ENTIRE PRIMARY** key/foreign key relationship.)

```
+-----------------------------+------------------+-----------+
| companyname                 | division         | statecode |
+-----------------------------+------------------+-----------+
| Acme Information Source     | Customer Support | OH        |
| Ajax Software, Inc.         | Production       | CA        |
| Ajax Software, Inc.         | RandD            | CA        |
| ApplDesign                  | RandD            | AL        |
| Bay Software Inc.           | Production       | CA        |
| Braddock Information Assoc. | Payroll          | MA        |
| Buffalo Software Assoc.     | Payroll          | NY        |
| Cameron Industries          | Customer Support | TX        |
| Cameron Industries          | Management       | TX        |
| CCC Software                | Production       | NY        |
| Davis-Klein Software        | RandD            | NY        |
| DC Security Applications    | RandD            | VA        |
| Flordia Software Designs    | Development      | FL        |
| Flordia Software Designs    | RandD            | FL        |
| Focused Applications, Inc.  | Production       | SC        |
| Georgia Software Design     | RandD            | GA        |
| Jersey Computer Services    | Customer Support | NJ        |
| Long Island Apps, Inc.      | Development      | NY        |
| Manhattan-Made Software     | Customer Support | NY        |
| Manhattan-Made Software     | Payroll          | NY        |
| Mountainside Magic Software | Customer Support | CO        |
| Mountainside Magic Software | Management       | CO        |
| Nantucket Applications, Inc.| RandD            | MA        |
| PennState Programming, Inc. | Management       | PA        |
| Rochester Software Design   | Development      | NY        |
| Sandy Hook Software         | Development      | CT        |
| Vegas Programming and Design| Development      | NV        |
| Virginia Software Industries| Production       | VA        |
+-----------------------------+------------------+-----------+
28 rows in set (0.00 sec)
```

3. Write a SQL statement that accomplishes a difference between the state and employer tables (STATE-EMPLOYER).

```
+-----------+--------------------------------+
| statecode | description                    |
+-----------+--------------------------------+
| AK        | ALASKA                         |
| AR        | ARKANSAS                       |
| AS        | AMERICAN SAMOA                 |
| AZ        | ARIZONA                        |
| DC        | DISTRICT OF COLUMBIA           |
| DE        | DELAWARE                       |
| FM        | FEDERATED STATES OF MICRONESIA |
| GU        | GUAM                           |
| HI        | HAWAII                         |
| IA        | IOWA                           |
| ID        | IDAHO                          |
| IL        | ILLINOIS                       |
| IN        | INDIANA                        |
| KS        | KANSAS                         |
| KY        | KENTUCKY                       |
| LA        | LOUISIANA                      |
| MD        | MARYLAND                       |
| ME        | MAINE                          |
| MH        | MARSHALL ISLANDS               |
| MN        | MINNESOTA                      |
| MO        | MISSOURI                       |
| MP        | NORTHERN MARIANA ISLANDS       |
| MS        | MISSISSIPPI                    |
| MT        | MONTANA                        |
| NC        | NORTH CAROLINA                 |
| ND        | NORTH DAKOTA                   |
| NE        | NEBRASKA                       |
| NH        | NEW HAMPSHIRE                  |
| NM        | NEW MEXICO                     |
| OK        | OKLAHOMA                       |
| OR        | OREGON                         |
| PR        | PUERTO RICO                    |
| PW        | PALAU                          |
| RI        | RHODE ISLAND                   |
| SD        | SOUTH DAKOTA                   |
| TN        | TENNESSEE                      |
| UT        | UTAH                           |
| VI        | VIRGIN ISLANDS                 |
| VT        | VERMONT                        |
| WA        | WASHINGTON                     |
| WI        | WISCONSIN                      |
| WV        | WEST VIRGINIA                  |
| WY        | WYOMING                        |
+-----------+--------------------------------+
43 rows in set (0.00 sec)
```

4.  Write a SQL statement that does a projection of the location and qtrcode attributes of the quarter table.

```
+----------+---------+
| location | qtrcode |
+----------+---------+
| NY       | 19951   |
| CA       | 19953   |
| NY       | 19961   |
| MA       | 19963   |
| NY       | 19964   |
+----------+---------+
5 rows in set (0.00 sec)
```

5.  Write a SQL statement that does a selection from the quarter table showing the quarters 19951 and 19961 only.

```
+---------+----------+--------+--------+
| qtrcode | location | minsal | minhrs |
+---------+----------+--------+--------+
| 19951   | NY       |  11.00 |     40 |
| 19961   | NY       |  12.00 |     30 |
+---------+----------+--------+--------+
2 rows in set (0.02 sec)
```

6. Write a SQL statement that will show the companyname, statecode, and full state name for each employer.

```
+--------------------------------+-----------+----------------+
| companyname                    | statecode | description    |
+--------------------------------+-----------+----------------+
| ApplDesign                     | AL        | ALABAMA        |
| Ajax Software, Inc.            | CA        | CALIFORNIA     |
| Ajax Software, Inc.            | CA        | CALIFORNIA     |
| Bay Software Inc.              | CA        | CALIFORNIA     |
| Bay Software Inc.              | CA        | CALIFORNIA     |
| Mountainside Magic Software    | CO        | COLORADO       |
| Mountainside Magic Software    | CO        | COLORADO       |
| Sandy Hook Software            | CT        | CONNECTICUT    |
| Flordia Software Designs       | FL        | FLORIDA        |
| Flordia Software Designs       | FL        | FLORIDA        |
| Georgia Software Design        | GA        | GEORGIA        |
| Braddock Information Assoc.     | MA        | MASSACHUSETTS  |
| Nantucket Applications, Inc.   | MA        | MASSACHUSETTS  |
| Michigan Application Design    | MI        | MICHIGAN       |
| Jersey Computer Services       | NJ        | NEW JERSEY     |
| Vegas Programming and Design   | NV        | NEVADA         |
| Buffalo Software Assoc.        | NY        | NEW YORK       |
| CCC Software                   | NY        | NEW YORK       |
| Davis-Klein Software           | NY        | NEW YORK       |
| Long Island Apps, Inc.         | NY        | NEW YORK       |
| Manhattan-Made Software        | NY        | NEW YORK       |
| Manhattan-Made Software        | NY        | NEW YORK       |
| Midtown Software Development   | NY        | NEW YORK       |
| Rochester Application Software | NY        | NEW YORK       |
| Rochester Software Design      | NY        | NEW YORK       |
| Western New York Applications  | NY        | NEW YORK       |
| Yankee Software                | NY        | NEW YORK       |
| Yankee Software                | NY        | NEW YORK       |
| Yankee Software                | NY        | NEW YORK       |
| Acme Information Source        | OH        | OHIO           |
| PennState Programming, Inc.    | PA        | PENNSYLVANIA   |
| PSWD, Inc.                     | PA        | PENNSYLVANIA   |
| Focused Applications, Inc.     | SC        | SOUTH CAROLINA |
| Cameron Industries             | TX        | TEXAS          |
| Cameron Industries             | TX        | TEXAS          |
| DC Security Applications       | VA        | VIRGINIA       |
| Virginia Software Industries   | VA        | VIRGINIA       |
+--------------------------------+-----------+----------------+
37 rows in set (0.00 sec)
```

7. Write a SQL statement that will show the descriptions for ALL states as well as the companynames of employers located each state.

```
+-------------------------------+-------------------------------+
| description                   | companyname                   |
+-------------------------------+-------------------------------+
| ALASKA                        | NULL                          |
| ALABAMA                       | ApplDesign                    |
| ARKANSAS                      | NULL                          |
| AMERICAN SAMOA                | NULL                          |
| ARIZONA                       | NULL                          |
| CALIFORNIA                    | Ajax Software, Inc.           |
| CALIFORNIA                    | Ajax Software, Inc.           |
| CALIFORNIA                    | Bay Software Inc.             |
| CALIFORNIA                    | Bay Software Inc.             |
| COLORADO                      | Mountainside Magic Software   |
| COLORADO                      | Mountainside Magic Software   |
| CONNECTICUT                   | Sandy Hook Software           |
| DISTRICT OF COLUMBIA          | NULL                          |
| DELAWARE                      | NULL                          |
| FLORIDA                       | Flordia Software Designs      |
| FLORIDA                       | Flordia Software Designs      |
| FEDERATED STATES OF MICRONESIA | NULL                         |
| GEORGIA                       | Georgia Software Design       |
| GUAM                          | NULL                          |
| HAWAII                        | NULL                          |
| IOWA                          | NULL                          |
| IDAHO                         | NULL                          |
| ILLINOIS                      | NULL                          |
| INDIANA                       | NULL                          |
| KANSAS                        | NULL                          |
| KENTUCKY                      | NULL                          |
| LOUISIANA                     | NULL                          |
| MASSACHUSETTS                 | Braddock Information Assoc.    |
| MASSACHUSETTS                 | Nantucket Applications, Inc.  |
| MARYLAND                      | NULL                          |
| MAINE                         | NULL                          |
| MARSHALL ISLANDS              | NULL                          |
| MICHIGAN                      | Michigan Application Design   |
| MINNESOTA                     | NULL                          |
| MISSOURI                      | NULL                          |
| NORTHERN MARIANA ISLANDS      | NULL                          |
| MISSISSIPPI                   | NULL                          |
| MONTANA                       | NULL                          |
| NORTH CAROLINA                | NULL                          |
| NORTH DAKOTA                  | NULL                          |
| NEBRASKA                      | NULL                          |
| NEW HAMPSHIRE                 | NULL                          |
| NEW JERSEY                    | Jersey Computer Services      |
| NEW MEXICO                    | NULL                          |
| NEVADA                        | Vegas Programming and Design  |
| NEW YORK                      | Buffalo Software Assoc.       |
| NEW YORK                      | CCC Software                  |
| NEW YORK                      | Davis-Klein Software          |
| NEW YORK                      | Long Island Apps, Inc.        |
| NEW YORK                      | Manhattan-Made Software       |
| NEW YORK                      | Manhattan-Made Software       |
| NEW YORK                      | Midtown Software Development  |
| NEW YORK                      | Rochester Application Software |
| NEW YORK                      | Rochester Software Design     |
| NEW YORK                      | Western New York Applications |
| NEW YORK                      | Yankee Software               |
```

```
| NEW YORK                      | Yankee Software               |
| NEW YORK                      | Yankee Software               |
| OHIO                          | Acme Information Source       |
| OKLAHOMA                      | NULL                          |
| OREGON                        | NULL                          |
| PENNSYLVANIA                  | PennState Programming, Inc.   |
| PENNSYLVANIA                  | PSWD, Inc.                    |
| PUERTO RICO                   | NULL                          |
| PALAU                         | NULL                          |
| RHODE ISLAND                  | NULL                          |
| SOUTH CAROLINA                | Focused Applications, Inc.    |
| SOUTH DAKOTA                  | NULL                          |
| TENNESSEE                     | NULL                          |
| TEXAS                         | Cameron Industries            |
| TEXAS                         | Cameron Industries            |
| UTAH                          | NULL                          |
| VIRGINIA                      | DC Security Applications      |
| VIRGINIA                      | Virginia Software Industries  |
| VIRGIN ISLANDS                | NULL                          |
| VERMONT                       | NULL                          |
| WASHINGTON                    | NULL                          |
| WISCONSIN                     | NULL                          |
| WEST VIRGINIA                 | NULL                          |
| WYOMING                       | NULL                          |
+-------------------------------+-------------------------------+
80 rows in set (0.00 sec)
```

.

## Appendix A – Information on JOBS database structure and content

```
mysql> DESCRIBE employer;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| companyname | varchar(30) |      | PRI |         |       |
| division    | varchar(30) |      | PRI |         |       |
| address     | varchar(30) | YES  |     | NULL    |       |
| city        | varchar(20) | YES  |     | NULL    |       |
| statecode   | char(2)     | YES  |     | NULL    |       |
| zipcode     | int(5)      | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
mysql> DESCRIBE interview;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| interviewID  | int(11)      |      | PRI | 0       |       |
| interviewdate| date         | YES  |     | NULL    |       |
| companyname  | varchar(30)  | YES  |     | NULL    |       |
| division     | varchar(30)  | YES  |     | NULL    |       |
| qtrcode      | varchar(5)   | YES  |     | NULL    |       |
| salaryoffered| float(8,2)   | YES  |     | NULL    |       |
| minhrsoffered| int(2)       | YES  |     | NULL    |       |
| listing      | char(1)      | YES  |     | NULL    |       |
| jobdesc      | varchar(255) | YES  |     | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
9 rows in set (0.00 sec)
mysql> DESCRIBE quarter;                              mysql> DESCRIBE state;
+---------+------------+------+-----+---------+-------+  +-------------+-------------+------+-----+---------+-------+
| Field   | Type       | Null | Key | Default | Extra |  | Field       | Type        | Null | Key | Default | Extra |
+---------+------------+------+-----+---------+-------+  +-------------+-------------+------+-----+---------+-------+
| qtrcode | varchar(5) |      | PRI |         |       |  | statecode   | char(2)     |      | PRI |         |       |
| location| char(2)    | YES  |     | NULL    |       |  | description | varchar(30) |      |     |         |       |
| minsal  | float(6,2) |      |     | 0.00    |       |  +-------------+-------------+------+-----+---------+-------+
| minhrs  | int(2)     |      |     | 0       |       |  2 rows in set (0.00 sec) mysql>
+---------+------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

# R·I·T

**Rochester Institute of Technology**
**Golisano College of Computing and Information Sciences**
**Department of Information Sciences & Technologies**

**JOBS database**

```
mysql> SELECT * FROM employer;                                    37 rows in set (0.00 sec)
```

| companyname | division | address | city | statecode | zipcode |
|---|---|---|---|---|---|
| Acme Information Source | Customer Support | 132 Commerical Way | Cleveland | OH | 44234 |
| Ajax Software, Inc. | RandD | 2421 West Industrial Way | Berkeley | CA | 94710 |
| Ajax Software, Inc. | Production | 2421 West Industrial Way | Berkeley | CA | 94710 |
| Bay Software Inc. | Production | 4223 Halster Way | Berkeley | CA | 94710 |
| Bay Software Inc. | RandD | 4223 Halster Way | Berkeley | CA | 94710 |
| Braddock Information Assoc. | Payroll | 1 Washington Complex | Boston | MA | 2101 |
| Yankee Software | Development | 1 Braddock Circle | Kenmore | NY | 14223 |
| Yankee Software | RandD | 1 Braddock Circle | Kenmore | NY | 14223 |
| Yankee Software | Management | 1 Braddock Circle | Kenmore | NY | 14223 |
| Buffalo Software Assoc. | Payroll | 45511 Delaware Ave. | Buffalo | NY | 14221 |
| Cameron Industries | Management | 3112 West Helm Street | Kingwood | TX | 77339 |
| Cameron Industries | Customer Support | 3112 West Helm Street | Kingwood | TX | 77339 |
| CCC Software | Production | 41 Golem Terrace | New York | NY | 10012 |
| DC Security Applications | RandD | 1602 Jackson Ave. | Arlington | VA | 22202 |
| Davis-Klein Software | RandD | 8871 West Grange Drive | Cairo | NY | 12413 |
| Jersey Computer Services | Customer Support | 44 WhiteStallion Pike | Lindenwold | NJ | 8021 |
| Flordia Software Designs | Development | 45A Sturgeon Dr., Bldg. 5 | Ft. Pierce | FL | 34951 |
| Flordia Software Designs | RandD | 45A Sturgeon Dr., Bldg. 5 | Ft. Pierce | FL | 34951 |
| Focused Applications, Inc. | Production | 776 West Ninth St. | Myrtle Beach | SC | 29579 |
| Georgia Software Design | RandD | 6665 Peachtree Lane | Atlanta | GA | 30328 |
| ApplDesign | RandD | 3 Mapleview Drive | Huntsville | AL | 35803 |
| Long Island Apps, Inc. | Development | 67 Merrifield Ave. | Oceanside | NY | 11572 |
| Manhattan-Made Software | Customer Support | 35 West 9th St. | New York | NY | 10012 |
| Manhattan-Made Software | Payroll | 35 West 9th St. | New York | NY | 10012 |
| Michigan Application Design | Development | 5531 E. Lansing Ave. | Ypsilanti | MI | 48197 |
| Midtown Software Development | Customer Support | 7554 West 9th St. | New York | NY | 10003 |
| Mountainside Magic Software | Customer Support | 4 Rocky Way | Colorado Springs | CO | 80941 |
| Mountainside Magic Software | Management | 4 Rocky Way | Colorado Springs | CO | 80941 |
| Nantucket Applications, Inc. | RandD | 45521 Pilgrim Circle | Nantucket | MA | 2554 |
| PennState Programming, Inc. | Management | 3 Carnegie Circle | Pittsburgh | PA | 15108 |
| PSWD, Inc. | Management | 15 Carnegie Circle | Pittsburgh | PA | 15108 |
| Rochester Software Design | Development | 16 Broad Street | Rochester | NY | 14621 |
| Rochester Application Software | Production | 16 Broad Street | Rochester | NY | 14621 |
| Sandy Hook Software | Development | 5665 MassPike Circle | Sandy Hook | CT | 6482 |
| Vegas Programming and Design | Development | 3 Desert Trail | Las Vegas | NV | 89117 |
| Virginia Software Industries | Production | 3 Confederate Ave. | Roanoke | VA | 24010 |
| Western New York Applications | RandD | 44 Rockman Blvd. | Rochester | NY | 14623 |

```
mysql> SELECT interviewID "ID", interviewdate "Date",
```

**R·I·T**

**Rochester Institute of Technology**
**Golisano College of Computing and Information Sciences**
**Department of Information Sciences & Technologies**

**JOBS database**

```
    ->      Companyname, division, qtrcode "Qtr.", salaryoffered "$ offer",
    ->      minhrsoffered "Hrs.", listing "List?", jobdesc
    ->      FROM interview;
+----+------------+----------------------------+-----------------+-------+---------+------+-------+----------+
| ID | Date       | Companyname                | division        | Qtr.  | $ offer | Hrs. | List? | jobdesc  |
+----+------------+----------------------------+-----------------+-------+---------+------+-------+----------+
|  1 | 1995-06-01 | Acme Information Source    | Customer Support| 19951 |   12.00 |   40 | y     | Job Desc |
|  2 | 1995-06-01 | Braddock Information Assoc.| Payroll         | 19951 |   10.75 |   40 | n     | Job Desc |
|  3 | 1995-06-30 | Ajax Software, Inc.        | Production      | 19951 |   11.00 |   40 | y     | Job Desc |
|  4 | 1995-06-30 | Ajax Software, Inc.        | RandD           | 19951 |   11.50 |   40 | y     | Job Desc |
|  5 | 1995-07-01 | Bay Software Inc.          | Production      | 19951 |   11.75 |   20 | y     | Job Desc |
|  6 | 1995-08-01 | Vegas Programming and Design| Development    | 19951 |   11.00 |   40 | n     | Job Desc |
|  7 | 1995-08-01 | Mountainside Magic Software| Management      | 19951 |   11.50 |   20 | y     | Job Desc |
|  8 | 1995-08-02 | Mountainside Magic Software| Customer Support| 19951 |   10.75 |   40 | y     | Job Desc |
|  9 | 1995-12-01 | Cameron Industries         | Management      | 19953 |   13.25 |   35 | n     | Job Desc |
| 10 | 1995-12-02 | Cameron Industries         | Customer Support| 19953 |   13.00 |   35 | n     | Job Desc |
| 11 | 1995-12-04 | CCC Software               | Production      | 19953 |   11.50 |   40 | n     | Job Desc |
| 12 | 1996-01-21 | DC Security Applications   | RandD           | 19953 |   11.50 |   30 | n     | Job Desc |
| 13 | 1996-02-01 | Davis-Klein Software       | RandD           | 19953 |   11.25 |   20 | n     | Job Desc |
| 14 | 1996-02-02 | Flordia Software Designs   | RandD           | 19953 |   11.75 |   30 | n     | Job Desc |
| 15 | 1996-07-01 | Rochester Software Design  | Development     | 19961 |   12.00 |   30 | n     | Job Desc |
| 16 | 1996-07-01 | Focused Applications, Inc. | Production      | 19961 |   12.00 |   30 | y     | Job Desc |
| 17 | 1996-08-01 | Georgia Software Design    | RandD           | 19961 |   11.75 |   40 | y     | Job Desc |
| 18 | 1996-08-08 | ApplDesign                 | RandD           | 19961 |   11.50 |   30 | y     | Job Desc |
| 19 | 1996-08-11 | Long Island Apps, Inc.     | Development     | 19961 |   12.25 |   40 | y     | Job Desc |
| 20 | 1997-01-01 | Jersey Computer Services   | Customer Support| 19963 |   12.50 |   35 | n     | Job Desc |
| 21 | 1997-01-01 | Flordia Software Designs   | Development     | 19963 |   12.75 |   30 | n     | Job Desc |
| 22 | 1997-01-31 | Manhattan-Made Software    | Customer Support| 19963 |   12.50 |   40 | y     | Job Desc |
| 23 | 1997-02-01 | Manhattan-Made Software    | Payroll         | 19963 |   13.25 |   40 | y     | Job Desc |
| 24 | 1997-03-24 | Nantucket Applications, Inc.| RandD          | 19964 |   13.00 |   40 | y     | Job Desc |
| 25 | 1997-03-31 | PennState Programming, Inc.| Management      | 19964 |   13.00 |   40 | y     | Job Desc |
| 26 | 1997-04-20 | Sandy Hook Software        | Development     | 19964 |   12.75 |   35 | n     | Job Desc |
| 27 | 1997-04-22 | Buffalo Software Assoc.    | Payroll         | 19964 |   12.75 |   35 | y     | Job Desc |
| 28 | 1997-05-01 | Virginia Software Industries| Production     | 19964 |   13.75 |   40 | n     | Job Desc |
+----+------------+----------------------------+-----------------+-------+---------+------+-------+----------+
28 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM state;
+-----------+-------------------------------+
| statecode | description                   |
+-----------+-------------------------------+
| AL        | ALABAMA                       |
| AK        | ALASKA                        |
| AS        | AMERICAN SAMOA                |
| AZ        | ARIZONA                       |
| AR        | ARKANSAS                      |
| CA        | CALIFORNIA                    |
| CO        | COLORADO                      |
| CT        | CONNECTICUT                   |
| DE        | DELAWARE                      |
| DC        | DISTRICT OF COLUMBIA          |
| FM        | FEDERATED STATES OF MICRONESIA |
| FL        | FLORIDA                       |
| GA        | GEORGIA                       |
| GU        | GUAM                          |
| HI        | HAWAII                        |
| ID        | IDAHO                         |
| IL        | ILLINOIS                      |
| IN        | INDIANA                       |
| IA        | IOWA                          |
| KS        | KANSAS                        |
| KY        | KENTUCKY                      |
| LA        | LOUISIANA                     |
| ME        | MAINE                         |
| MH        | MARSHALL ISLANDS              |
| MD        | MARYLAND                      |
| MA        | MASSACHUSETTS                 |
| MI        | MICHIGAN                      |
| MN        | MINNESOTA                     |
| MS        | MISSISSIPPI                   |
| MO        | MISSOURI                      |
| MT        | MONTANA                       |
| NE        | NEBRASKA                      |
| NV        | NEVADA                        |
| NH        | NEW HAMPSHIRE                 |
| NJ        | NEW JERSEY                    |
| NM        | NEW MEXICO                    |
| NY        | NEW YORK                      |
| NC        | NORTH CAROLINA                |
| ND        | NORTH DAKOTA                  |
| MP        | NORTHERN MARIANA ISLANDS      |
| OH        | OHIO                          |
| OK        | OKLAHOMA                      |
| OR        | OREGON                        |
| PW        | PALAU                         |
| PA        | PENNSYLVANIA                  |
| PR        | PUERTO RICO                   |
| RI        | RHODE ISLAND                  |
| SC        | SOUTH CAROLINA                |
| SD        | SOUTH DAKOTA                  |
| TN        | TENNESSEE                     |
| TX        | TEXAS                         |
| UT        | UTAH                          |
```

```
| VT        | VERMONT                       |
| VI        | VIRGIN ISLANDS                |
| VA        | VIRGINIA                      |
| WA        | WASHINGTON                    |
| WV        | WEST VIRGINIA                 |
| WI        | WISCONSIN                     |
| WY        | WYOMING                       |
+-----------+-------------------------------+
59 rows in set (0.00 sec)

mysql> SELECT * FROM quarter;
+---------+----------+--------+--------+
| qtrcode | location | minsal | minhrs |
+---------+----------+--------+--------+
| 19951   | NY       | 11.00  |     40 |
| 19953   | CA       | 11.50  |     30 |
| 19961   | NY       | 12.00  |     30 |
| 19963   | MA       | 12.75  |     40 |
| 19964   | NY       | 13.50  |     40 |
+---------+----------+--------+--------+
5 rows in set (0.0
```