Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases; +----+ Database +----+ hr db information schema mysql | performance schema | | sakila | SYS world +----+ 7 rows in set (0.01 sec)mysql> use hr db; Database changed mysql> show tables; +----+ | Tables in hr db | +----+ countries departments emp details view employees job history jobs locations regions +----+ 8 rows in set (0.02 sec)mysql> select * from countries; +-----+ +----+

```
CN
         | China
                                3 |
 DE
         Germany
                                  1 |
 DK
         | Denmark
                                  1 |
EG
         | Egypt
                                4 |
FR
        France
                                1 |
HK
         | HongKong
                                   3 |
                              4 |
IL
        Israel
IN
        India
                              3 |
        | Italy
IT
                              1 |
JP
        | Japan
                              3 |
KW
         | Kuwait
                                 4 |
MX
         Mexico
                                 2 |
NG
         | Nigeria
                                4 |
NL
         | Netherlands
                                  1 |
SG
        Singapore
                                 3 |
UK
         | United Kingdom
                                     1 |
        | United States of America |
US
                                      2 |
ZM
         | Zambia
                                 4 |
| ZW
         Zimbabwe
                                   4 |
25 rows in set (0.01 sec)
mysql> select * from departments;
+----+
| department id | department name | manager id | location id |
+-----+
       10 | Administration
                                 200 |
                                          1700 |
       20 | Marketing
                               201
                                        1800
       30 | Purchasing
                                114 |
                                         1700 |
       40 | Human Resources
                                   203 |
                                            2400 |
       50 | Shipping
                               121 |
                                        1500 |
       60 | IT
                            103 |
                                     1400
       70 | Public Relations
                                 204 |
                                          2700 |
       80 | Sales
                             145 |
                                      2500 |
       90 | Executive
                               100 |
                                        1700 |
      100 | Finance
                                        1700 |
                               108 |
      110 | Accounting
                                205 |
                                         1700 |
      120 | Treasury
                               NULL |
                                          1700 |
      130 | Corporate Tax
                                 NULL |
                                            1700 |
      140 | Control And Credit |
                                  NULL |
                                              1700
      150 | Shareholder Services |
                                   NULL |
                                              1700 |
      160 | Benefits
                              NULL |
                                          1700 |
      170 | Manufacturing
                                 NULL |
                                             1700 |
      180 | Construction
                                NULL |
                                           1700
      190 | Contracting
                               NULL |
                                           1700 |
      200 | Operations
                               NULL |
                                           1700 |
      210 | IT Support
                               NULL |
                                           1700
      220 | NOC
                              NULL |
                                          1700 |
                                NULL |
      230 | IT Helpdesk
                                            1700 |
      240 | Government Sales
                                   NULL |
                                              1700 |
      250 | Retail Sales
                                           1700 |
                               NULL |
      260 | Recruiting
                               NULL |
                                           1700 |
      270 | Payroll
                              NULL |
                                         1700
```

```
mysql> select * from emp_details_view;
| employee id | job id | manager id | department id | location id | country id | first name | last name | salary |
region name
---+
   200 | AD_ASST | 101 | 10 | 1700 | US
                                        | Jennifer | Whalen | 4400.00 | NULL
| Administration | Administration Assistant | Seattle | Washington | United States of America | Ameri
cas
   201 | MK MAN | 100 |
                            20 | 1800 | CA | Michael | Hartstein | 13000.00 | NUL
                                       Ontario
                                                  | Canada | Americas |
L | Marketing | Marketing Manager
                               Toronto
                                               | Fay | 6000.00 |
   202 | MK REP | 201 |
                           20 |
                                 1800 | CA
                                          | Pat
                                                                    NULL | M
arketing | Marketing Representative
                           | Toronto | Ontario
                                                 Canada
                                                        | Americas |
                            30 | 1700 | US | Den | Raphaely | 11000.00 |
   114 | PU MAN | 100 |
                                                                      NULL
| Purchasing | Purchasing Manager
                                      | Washington | United States of America | America
                            Seattle
   115 | PU CLERK | 114 |
                            30 | 1700 | US | Alexander | Khoo | 3100.00 | NUL
L | Purchasing | Purchasing Clerk
                                     | Washington | United States of America | America
                             Seattle
    116 | PU CLERK | 114 |
                            30 | 1700 | US | Shelli | Baida | 2900.00 |
                                                                      NULL |
Purchasing | Purchasing Clerk
                            | Seattle | Washington | United States of America | Americas
    117 | PU CLERK | 114 |
                            30 | 1700 | US | Sigal | Tobias | 2800.00 |
                                                                      NULL |
Purchasing | Purchasing Clerk
                            | Seattle | Washington | United States of America | Americas
   118 | PU CLERK | 114 |
                            30 | 1700 | US | Guy | Himuro | 2600.00 |
                                                                       NULL
| Purchasing | Purchasing Clerk | Seattle | Washington | United States of America | Americas
   119 | PU CLERK | 114 | 30 | 1700 | US | Karen | Colmenares | 2500.00 |
                                                                         NU
LL | Purchasing | Purchasing Clerk | Seattle | Washington | United States of America | Americ
as |
    203 | HR_REP | 101 |
                           40 |
                                 2400 | UK | Susan | Mavris | 6500.00 | NULL |
Human Resources | Human Resources Representative | London | NULL | United Kingdom | Eu
    120 | ST MAN | 100 |
                           50 |
                                 1500 | US
                                          | Matthew | Weiss | 8000.00 |
                                                                      NULL
| Shipping | Stock Manager
                           | South San Francisco | California | United States of America | Americ
   121 | ST MAN | 100 |
                           50 |
                                 1500 | US
                                          Adam
                                                   | Fripp | 8200.00 | NULL |
Shipping | Stock Manager
                           | South San Francisco | California | United States of America | America
    122 | ST MAN | 100 |
                                 1500 | US | Payam | Kaufling | 7900.00 |
                           50 |
                                                                       NULL
| Shipping | Stock Manager
                           | South San Francisco | California | United States of America | Americ
    123 | ST_MAN | 100 |
                           50 |
                                 1500 | US
                                           | Shanta | Vollman | 6500.00 |
                                                                       NULL
| Shipping | Stock Manager
                           | South San Francisco | California | United States of America | Americ
as
    124 | ST MAN | 100 |
                           50 |
                                 1500 | US | Kevin | Mourgos | 5800.00 |
                                                                       NULL
| Shipping | Stock Manager
                           | South San Francisco | California | United States of America | Americ
```

```
as
                           120 |
                                              1500 | US
     125 | ST CLERK |
                                       50 |
                                                            | Julia
                                                                     | Nayer | 3200.00 |
                                                                                               NULL |
                                    | South San Francisco | California
                                                                     | United States of America | Americas
            | Stock Clerk
Shipping
     126 | ST_CLERK |
                            120 |
                                       50 |
                                              1500 | US
                                                            Irene
                                                                      | Mikkilineni | 2700.00 |
                                     | South San Francisco | California
                                                                      | United States of America | America
Shipping
            Stock Clerk
     127 | ST CLERK |
                            120 |
                                       50 |
                                              1500 | US
                                                            James
                                                                      Landry
                                                                                 | 2400.00 |
                                                                                                 NULL
                                     | South San Francisco | California
                                                                      | United States of America | Americas
            | Stock Clerk
Shipping
     128 | ST CLERK |
                            120 |
                                      50 |
                                              1500 | US
                                                                                 | 2200.00 |
                                                            Steven
                                                                      Markle
                                                                                                 NULL
Shipping
          | Stock Clerk
                                     | South San Francisco | California
                                                                     | United States of America | Americas
     129 | ST CLERK |
                            121 |
                                       50 |
                                              1500 | US
                                                                               | 3300.00 |
                                                            Laura
                                                                      Bissot
                                                                                                NULL |
Shipping
          Stock Clerk
                                    | South San Francisco | California
                                                                     | United States of America | Americas
     130 | ST CLERK |
                           121 |
                                       50 |
                                              1500 | US
                                                            Mozhe
                                                                       | Atkinson | 2800.00 |
                                                                                                  NUL
L | Shipping | Stock Clerk
                                       | South San Francisco | California | United States of America | Americ
     131 | ST CLERK |
                           121 |
                                      50 |
                                              1500 | US
                                                                      | Marlow | 2500.00 |
                                                            James
                                                                                                 NULL
| Shipping | Stock Clerk
                                     | South San Francisco | California
                                                                      | United States of America | America
     132 | ST CLERK |
                                              1500 | US
                                                                              | 2100.00 |
                            121 |
                                      50 |
                                                            | TJ
                                                                     Olson
                                                                                               NULL |
Shipping | Stock Clerk
                                    | South San Francisco | California
                                                                    | United States of America | Americas
     133 | ST CLERK |
                            122 |
                                       50 |
                                              1500 | US
                                                            Jason
                                                                     | Mallin
                                                                              | 3300.00 |
                                                                                                NULL |
Shipping
            | Stock Clerk
                                    | South San Francisco | California
                                                                    | United States of America | Americas
     134 | ST CLERK |
                            122 |
                                              1500 | US
                                                            | Michael | Rogers | 2900.00 |
                                                                                                 NULL
| Shipping | Stock Clerk
                                     | South San Francisco | California | United States of America | America
     135 | ST CLERK |
                            122 |
                                              1500 | US
                                       50 |
                                                            | Ki
                                                                     Gee
                                                                             | 2400.00 |
                                                                                              NULL | S
hipping
          Stock Clerk
                                   | South San Francisco | California | United States of America | Americas |
     136 | ST CLERK |
                            122 |
                                       50 |
                                              1500 | US
                                                            | Hazel
                                                                      | Philtanker | 2200.00 |
                                                                                                 NULL
           | Stock Clerk
                                     | South San Francisco | California
                                                                      | United States of America | America
Shipping
s |
     137 | ST_CLERK |
                            123 |
                                      50 |
                                              1500 | US
                                                            Renske
                                                                       | Ladwig | 3600.00 |
                                                                                                  NUL
L | Shipping | Stock Clerk
                                       | South San Francisco | California
                                                                      | United States of America | Americ
     138 | ST CLERK |
                            123 |
                                       50 |
                                              1500 | US
                                                            | Stephen | Stiles
                                                                               | 3200.00 |
                                                                                                NULL |
Shipping | Stock Clerk
                                    | South San Francisco | California | United States of America | Americas
     139 | ST CLERK |
                            123 |
                                       50 |
                                              1500 | US
                                                                      Seo
                                                                               | 2700.00 |
                                                                                               NULL |
                                                            John
                                    | South San Francisco | California | United States of America | Americas
Shipping | Stock Clerk
     140 | ST CLERK |
                            123 |
                                       50 L
                                              1500 | US
                                                                      Patel
                                                                                | 2500.00 |
                                                                                                NULL |
                                                            Joshua
Shipping | Stock Clerk
                                    | South San Francisco | California | United States of America | Americas
                                                                                                NULL |
     141 | ST CLERK |
                            124 |
                                       50 |
                                              1500 | US
                                                            | Trenna
                                                                       Rais
                                                                                | 3500.00 |
                                    | South San Francisco | California | United States of America | Americas
Shipping | Stock Clerk
     142 | ST CLERK |
                            124 |
                                       50 L
                                              1500 | US
                                                                                | 3100.00 |
                                                            | Curtis
                                                                      Davies
                                                                                                NULL |
Shipping
           | Stock Clerk
                                    | South San Francisco | California
                                                                    | United States of America | Americas
```

```
143 | ST CLERK | 124 |
                               50 | 1500 | US | Randall | Matos | 2600.00 | NULL
                                 | South San Francisco | California | United States of America | Americas
| Shipping | Stock Clerk
     144 | ST CLERK |
                         124 |
                                          1500 | US
                                                      | Peter
                                                               | Vargas
                                                                        | 2500.00 |
                                                                                       NULL |
Shipping | Stock Clerk
                                | South San Francisco | California | United States of America | Americas
| 180 | SH CLERK | 120 |
                                   50 |
                                          1500 | US
                                                      | Winston | Taylor | 3200.00 |
                                                                                        NUL
L | Shipping | Shipping Clerk
                                   | South San Francisco | California | United States of America | Ameri
cas
    181 | SH CLERK | 120 |
                                   50 |
                                          1500 | US
                                                               | Fleaur | 3100.00 |
                                                                                      NULL |
                                                     Jean
Shipping | Shipping Clerk
                                 | South San Francisco | California | United States of America | Americas
| 182 | SH CLERK | 120 |
                                   50 |
                                          1500 | US | Martha
                                                                | Sullivan | 2500.00 | NULL
                                   | South San Francisco | California
                                                               | United States of America | Americ
| Shipping | Shipping Clerk
    183 | SH CLERK | 120 |
                                  50 |
                                          1500 | US | Girard
                                                                | Geoni | 2800.00 |
                                                                                       NULL |
                                  | South San Francisco | California
Shipping | Shipping Clerk
                                                               | United States of America | America
    184 | SH CLERK | 121 |
                                  50 | 1500 | US
                                                   | Nandita | Sarchand | 4200.00 | NUL
L | Shipping | Shipping Clerk
                                  | South San Francisco | California | United States of America | Ameri
cas
    185 | SH CLERK | 121 |
                                  50 |
                                          1500 | US
                                                               | Bull | 4100.00 |
                                                   | Alexis
                                                                                      NULL |
Shipping | Shipping Clerk
                                 | South San Francisco | California | United States of America | Americas
    186 | SH CLERK | 121 |
                                  50 |
                                          1500 | US
                                                   | Julia
                                                              | Dellinger | 3400.00 |
                                                                                       NULL |
Shipping | Shipping Clerk
                                  | South San Francisco | California | United States of America | America
    187 | SH CLERK | 121 |
                                   50 |
                                          1500 | US | Anthony | Cabrio | 3000.00 |
                                                                                         NUL
L | Shipping | Shipping Clerk
                                   | South San Francisco | California | United States of America | Ameri
cas
    188 | SH CLERK | 122 |
                                          1500 | US | Kelly | Chung | 3800.00 |
                                   50 |
                                                                                       NULL
                                  | South San Francisco | California | United States of America | America
| Shipping | Shipping Clerk
    189 | SH CLERK | 122 |
                                   50 |
                                          1500 | US | Jennifer | Dilly | 3600.00 |
                                                                                     NULL |
Shipping | Shipping Clerk
                                | South San Francisco | California | United States of America | Americas
| 190 | SH CLERK | 122 |
                                   50 |
                                          1500 | US
                                                   | Timothy | Gates | 2900.00 | NULL
| Shipping | Shipping Clerk
                                   | South San Francisco | California | United States of America | Americ
    191 | SH CLERK | 122 |
                                   50 |
                                          1500 | US
                                                   Randall
                                                                | Perkins | 2500.00 | NULL
| Shipping | Shipping Clerk
                                   | South San Francisco | California | United States of America | Americ
    192 | SH CLERK | 123 |
                                          1500 | US
                                                                                     NULL |
                                   50 |
                                                               | Bell | 4000.00 |
                                                     Sarah
Shipping | Shipping Clerk
                                 | South San Francisco | California | United States of America | Americas
    193 | SH CLERK | 123 |
                                  50 |
                                          1500 | US
                                                     Britney
                                                               | Everett | 3900.00 |
                                                                                       NULL
| Shipping | Shipping Clerk
                                  | South San Francisco | California | United States of America | America
| 194 | SH CLERK | 123 |
                                   50 |
                                          1500 | US
                                                      Samuel
                                                               | McCain | 3200.00 |
                                                                                         NUL
L | Shipping | Shipping Clerk
                                   | South San Francisco | California | United States of America | Ameri
cas
                                  50 |
     195 | SH CLERK | 123 |
                                          1500 | US
                                                      | Vance
                                                                Jones
                                                                        | 2800.00 |
                                                                                       NULL |
Shipping | Shipping Clerk
                                  | South San Francisco | California | United States of America | America
```

```
s
                                        50 |
     196 | SH CLERK | 124 |
                                                1500 | US
                                                             | Alana
                                                                        | Walsh
                                                                                   | 3100.00 |
                                                                                                   NULL
                                       | South San Francisco | California
                                                                        | United States of America | America
Shipping
             | Shipping Clerk
     197 | SH CLERK |
                            124
                                        50 L
                                                1500 | US
                                                              Kevin
                                                                        | Feeney
                                                                                   | 3000.00 |
                                                                                                    NULL
Shipping
             | Shipping Clerk
                                        | South San Francisco | California
                                                                        | United States of America | Americ
as |
     198 | SH CLERK |
                            124 |
                                        50 |
                                                1500 | US
                                                              Donald
                                                                         | OConnell | 2600.00 |
                                                                                                     NUL
              | Shipping Clerk
                                        | South San Francisco | California
                                                                         | United States of America | Ameri
L | Shipping
cas
                                        50 |
                                                1500 | US
     199 | SH CLERK |
                            124 |
                                                              Douglas
                                                                         Grant
                                                                                   | 2600.00 |
                                                                                                    NULL
                                        | South San Francisco | California
                                                                         | United States of America | Americ
Shipping
              | Shipping Clerk
as
     103 | IT PROG |
                           102 |
                                      60 |
                                              1400 | US
                                                            | Alexander | Hunold
                                                                                   9000.00
                                                                                                    NULL
| IT
            Programmer
                                     Southlake
                                                     | Texas
                                                                 | United States of America | Americas |
     104 | IT PROG |
                           103 |
                                              1400 | US
                                                            Bruce
                                                                      Ernst
                                                                                | 6000.00 |
                                                                                                 NULL | I
                                      60
T
         | Programmer
                                   Southlake
                                                   | Texas
                                                               | United States of America | Americas |
     105 | IT PROG |
                           103 |
                                      60 |
                                              1400 | US
                                                            David
                                                                       | Austin
                                                                                 | 4800.00 |
                                                                                                  NULL | I
T
         Programmer
                                   Southlake
                                                   | Texas
                                                               | United States of America | Americas
                                                                      | Pataballa | 4800.00 |
     106 | IT PROG |
                           103 |
                                      60 |
                                              1400 | US
                                                            | Valli
                                                                                                 NULL | I
T
                                                               | United States of America | Americas |
         | Programmer
                                   Southlake
                                                   | Texas
     107 | IT PROG |
                           103 |
                                      60 |
                                              1400 | US
                                                            Diana
                                                                      | Lorentz | 4200.00 |
                                                                                                  NULL |
                                                                | United States of America | Americas |
IT
          | Programmer
                                   Southlake
                                                    | Texas
                                                            | Hermann | Baer
                                                                                  | 10000.00 |
     204 | PR REP
                          101
                                      70 |
                                             2700 | DE
                                                                                                   NULL |
Public Relations | Public Relations Representative | Munich
                                                              Bavaria
                                                                           Germany
                                                                                               | Europe
                                               2500 | UK
     145 | SA MAN
                            100 |
                                       80 |
                                                             John
                                                                       | Russell | 14000.00 |
                                                                                                   0.40 \mid S
          | Sales Manager
                                                   Oxford
                                                               | United Kingdom
                                                                                      | Europe
ales
                                   Oxford
                                                                        | Partners | 13500.00 |
     146 | SA MAN
                                       80 |
                                               2500 | UK
                                                             Karen
                            100
                                                                                                    0.30
                                                                 | United Kingdom
           | Sales Manager
                                     Oxford
                                                    Oxford
Sales
                                                                                       Europe
     147 | SA MAN
                                       80 |
                                               2500 | UK
                                                             | Alberto | Errazuriz | 12000.00 |
                                                                                                    0.30 |
                           100
                                                                 | United Kingdom
Sales
           | Sales Manager
                                     Oxford
                                                    Oxford
                                                                                        | Europe
     148 | SA MAN
                                       80 |
                                                             Gerald
                                                                        | Cambrault | 11000.00 |
                            100 |
                                               2500 | UK
                                                                                                     0.30
            | Sales Manager
                                     Oxford
                                                     Oxford
                                                                 | United Kingdom
Sales
                                                                                        Europe
     149 | SA MAN
                           100
                                       80 |
                                               2500 | UK
                                                             | Eleni
                                                                      | Zlotkey | 10500.00 |
                                                                                                   0.20 | S
                                   Oxford
                                                               | United Kingdom
          | Sales Manager
ales
                                                   Oxford
                                                                                      Europe
                                                                      | Tucker | 10000.00 |
     150 | SA REP
                                              2500 | UK
                          145 |
                                      80 |
                                                            Peter
                                                                                                  0.30 | Sal
        | Sales Representative
                                   Oxford
                                                   Oxford
                                                               | United Kingdom
                                                                                      Europe
es
                                                                                                  0.25 | S
     151 | SA REP
                                      80 |
                                             2500 | UK
                                                            David
                                                                      | Bernstein | 9500.00 |
                          145 |
          | Sales Representative
                                     Oxford
                                                                 | United Kingdom
ales
                                                    Oxford
                                                                                        Europe
     152 | SA REP
                                                                     | Hall
                                                                                                0.25 | Sales
                          145 |
                                     80 |
                                             2500 | UK
                                                            Peter
                                                                              | 9000.00 |
                                                             | United Kingdom
      | Sales Representative
                                 Oxford
                                                 Oxford
                                                                                    | Europe
                                                            | Christopher | Olsen
     153 | SA REP
                                              2500 | UK
                                                                                  | 8000.00 |
                                                                                                   0.20 | S
                           145 |
                                      80 |
          | Sales Representative
                                                                 | United Kingdom
                                     Oxford
ales
                                                    Oxford
                                                                                        | Europe
                                                            | Nanette | Cambrault | 7500.00 |
     154 | SA REP
                          145 |
                                     80 |
                                              2500 | UK
                                                                                                    0.20
           | Sales Representative
                                                                  | United Kingdom
                                      Oxford
Sales
                                                      Oxford
                                                                                         Europe
                                                            Oliver
                                                                      | Tuvault | 7000.00 |
     155 | SA REP
                          145
                                      80 |
                                              2500 | UK
                                                                                                  0.15 | Sal
        | Sales Representative
                                   Oxford
                                                   Oxford
                                                               | United Kingdom
                                                                                      Europe
es
                                                                      King
     156 | SA REP
                                      80 |
                                             2500 | UK
                                                            Janette
                                                                                | 10000.00 |
                                                                                                 0.35 | Sal
        | Sales Representative
                                   Oxford
                                                   Oxford
                                                               | United Kingdom
                                                                                      | Europe
es
     157 | SA REP
                          146 |
                                                            | Patrick
                                                                     Sully
                                                                                                0.35 | Sale
                                      80 |
                                             2500 | UK
                                                                                | 9500.00 |
                                                                                     Europe
       | Sales Representative
                                  Oxford
                                                  Oxford
                                                              | United Kingdom
S
                                                                      | McEwen
                                                            | Allan
                                                                                   | 9000.00 |
     158 | SA REP
                           146
                                      80 |
                                              2500 | UK
                                                                                                   0.35 \mid S
                                                                | United Kingdom
          | Sales Representative
                                     Oxford
                                                    Oxford
                                                                                       Europe
ales
```

```
2500 | UK | Lindsey | Smith | 8000.00 |
                                                                                  0.30 | Sa
    159 | SA REP | 146 |
                               80 |
                              Oxford
les
       | Sales Representative
                                           Oxford United Kingdom Europe
    160 | SA REP |
                     146
                               80 |
                                      2500 | UK
                                                | Louise | Doran | 7500.00 |
                                                                                  0.30 | Sal
     | Sales Representative
                                          Oxford United Kingdom Europe
                             Oxford
es
                                      2500 | UK
                                                  | Sarath | Sewall | 7000.00 |
    161 | SA REP |
                               80 |
                                                                                 0.25 | Sal
      | Sales Representative
                             Oxford
                                          Oxford
                                                   | United Kingdom | Europe
es
    162 | SA REP |
                               80 |
                                      2500 | UK
                                                  | Clara | Vishney | 10500.00 |
                                                                                  0.25 | Sa
147 |
les
       | Sales Representative
                              Oxford
                                           Oxford
                                                     | United Kingdom | Europe
                                                                                  0.15 | S
    163 | SA REP |
                               80 |
                                      2500 | UK
                                                 | Danielle | Greene | 9500.00 |
147 |
       | Sales Representative
                               Oxford
                                           Oxford United Kingdom Europe
ales
    164 | SA REP |
                              80 |
                                      2500 | UK
                                                  | Mattea | Marvins | 7200.00 |
                                                                                  0.10 | S
       | Sales Representative
                               Oxford
                                           Oxford
                                                   | United Kingdom | Europe
ales
                                      2500 | UK
    165 | SA REP |
                               80 |
                                                 | David | Lee | 6800.00 |
                                                                                 0.10 | Sale
                      147
     | Sales Representative
                            Oxford
                                         Oxford
                                                 | United Kingdom
                                                                     Europe
S
166 | SA REP |
                     147 |
                               80 |
                                      2500 | UK | Sundar | Ande | 6400.00 |
                                                                                  0.10 | Sa
      | Sales Representative
                              Oxford
                                           Oxford United Kingdom Europe
les
                                                  | Amit | Banda | 6200.00 |
    167 | SA REP |
                               80 |
                                      2500 | UK
                                                                                  0.10 | Sal
| Sales Representative
                             Oxford
                                          Oxford | United Kingdom | Europe
es
    168 | SA REP |
                                      2500 | UK | Lisa | Ozer | 11500.00 |
                                                                                 0.25 | Sale
                     148 |
                               80 |
                                                  | United Kingdom | Europe
     | Sales Representative
                                        Oxford
                            Oxford
S
    169 | SA REP |
                               80 |
                                      2500 | UK
                                                  | Harrison | Bloom | 10000.00 |
                                                                                   0.20
                      148
     | Sales Representative
                               Oxford Oxford United Kingdom Europe
Sales
    170 | SA REP |
                                      2500 | UK
                                                | Tayler | Fox | 9600.00 |
                      148 |
                               80 |
                                                                                 0.20 | Sale
     | Sales Representative
                                         Oxford | United Kingdom | Europe
                            Oxford
S
171 | SA REP |
                     148 |
                               80 |
                                      2500 | UK | William | Smith | 7400.00 |
                                                                                  0.15 | Sa
                                           Oxford United Kingdom Europe
      | Sales Representative
                              Oxford
les
                      148 |
                                                | Elizabeth | Bates | 7300.00 |
                                                                                  0.15 | Sa
    172 | SA REP |
                               80 |
                                      2500 | UK
                                           Oxford United Kingdom Europe
      | Sales Representative
                              Oxford
les
                                                | Sundita | Kumar | 6100.00 |
                                                                                  0.10 | S
    173 | SA REP |
                              80 |
                                      2500 | UK
                                           Oxford United Kingdom Europe
    | Sales Representative
                               Oxford
                                                                                  ales
174 | SA REP |
                      149 |
                              80 |
                                      2500 | UK
                                                | Ellen | Abel | 11000.00 |
                                                                                 0.30 | Sal
     | Sales Representative
                             Oxford
                                          Oxford United Kingdom Europe
es
    175 | SA REP |
                     149 |
                               80 |
                                      2500 | UK
                                                 | Alyssa | Hutton | 8800.00 |
                                                                                  0.25 | Sa
Oxford | United Kingdom | Europe
       | Sales Representative
                              Oxford
les
                                                | Jonathon | Taylor | 8600.00 |
                                                                                  0.20 | S
    176 | SA REP | 149 |
                              80 |
                                      2500 | UK
     | Sales Representative
                                           Oxford United Kingdom Europe
                              Oxford
ales
                                      2500 | UK
                                                | Jack | Livingston | 8400.00 |
    177 | SA REP |
                      149 |
                              80 |
                                                                                  0.20 | Sa
       | Sales Representative
                              Oxford
                                          Oxford | United Kingdom | Europe
les
                                      2500 | UK
                                                | Charles | Johnson | 6200.00 |
                                                                                  0.10 | S
179 | SA REP | 149 |
                              80 |
                                           Oxford United Kingdom Europe
                               Oxford
        | Sales Representative
ales
                      NULL | 90 | 1700 | US
    100 | AD PRES |
                                                  | Steven | King | 24000.00 |
                                                                                  NUL
                               | Seattle | Washington | United States of America | Americas |
L | Executive | President
                      100 |
                                     1700 | US | Neena | Kochhar | 17000.00 |
    101 | AD VP |
                               90 |
Executive | Administration Vice President | Seattle | Washington | United States of America | Ameri
cas
                                     1700 | US | Lex
    102 | AD VP |
                      100 |
                               90 |
                                                         | De Haan | 17000.00 |
Executive | Administration Vice President | Seattle | Washington | United States of America | America
as |
    108 | FI MGR | 101 | 100 | 1700 | US | Nancy | Greenberg | 12000.00 |
L | Finance | Finance Manager | Seattle | Washington | United States of America | Americas
    109 | FI ACCOUNT | 108 | 100 | 1700 | US | Daniel | Faviet | 9000.00 |
                                 Seattle
                                        | Washington | United States of America | Americas
L | Finance | Accountant
```

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108 |
   110 | FI ACCOUNT |
                               100 |
                                      1700 | US | John | Chen | 8200.00 |
                                                                              NUL
L | Finance | Accountant
                               Seattle
                                          | Washington | United States of America | Americas
   111 | FI ACCOUNT |
                       108 |
                               100 |
                                      1700 | US | Ismael | Sciarra | 7700.00 |
                                                                              NUL
L | Finance | Accountant
                               Seattle
                                         | Washington | United States of America | Americas
   112 | FI ACCOUNT |
                       108 |
                               100 | 1700 | US | Jose Manuel | Urman | 7800.00 |
NULL | Finance | Accountant
                                | Seattle | Washington | United States of America | Ameri
cas
   113 | FI ACCOUNT | 108 |
                              100 | 1700 | US | Luis | Popp | 6900.00 |
                                                                             NULL
| Finance | Accountant
                              | Seattle | Washington | United States of America | Americas |
    205 | AC MGR | 101 | 110 | 1700 | US | Shelley | Higgins | 12000.00 | NUL
L | Accounting | Accounting Manager
                                | Seattle | Washington | United States of America | Amer
icas
    206 | AC_ACCOUNT | 205 | 110 | 1700 | US | William | Gietz
                                                                   | 8300.00 |
                                                                                NU
LL | Accounting | Public Accountant
                                | Seattle | Washington | United States of America | Ameri
106 rows in set (0.02 sec)
mysql> select * from employees;
| employee id | first name | last name | email | phone number | hire date | job id | salary | commission
pct | manager id | department id |
100 | Steven | King | SKING | 515.123.4567 | 1987-06-17 | AD PRES | 24000.00 | NULL
   NULL |
              90 |
  101 | Neena
             | Kochhar | NKOCHHAR | 515.123.4568 | 1989-09-21 | AD VP | 17000.00 |
NULL | 100 |
               90 |
    102 | Lex
              | De Haan | LDEHAAN | 515.123.4569 | 1993-01-13 | AD VP | 17000.00 |
                                                                               NU
LL | 100 |
               90 |
   103 | Alexander | Hunold | AHUNOLD | 590.423.4567 | 1990-01-03 | IT PROG | 9000.00 |
NULL | 102 |
               60 |
    104 | Bruce
              | Ernst | BERNST | 590.423.4568 | 1991-05-21 | IT PROG | 6000.00 |
                                                                             NULL
    103 |
             60 |
    105 | David
                      | DAUSTIN | 590.423.4569 | 1997-06-25 | IT PROG | 4800.00 |
                                                                              NUL
              Austin
L \mid
    103 |
              60 |
    106 | Valli
              | Pataballa | VPATABAL | 590.423.4560 | 1998-02-05 | IT PROG | 4800.00 |
                                                                               NU
LL | 103 |
               60 |
              | Lorentz | DLORENTZ | 590.423.5567 | 1999-02-07 | IT | PROG | | 4200.00 |
    107 | Diana
                                                                                N
ULL | 103 |
               60 |
   108 | Nancy
               | Greenberg | NGREENBE | 515.124.4569 | 1994-08-17 | FI MGR | 12000.00 |
NULL | 101 |
               100 |
| 109 | Daniel
               | Faviet
                      | DFAVIET | 515.124.4169 | 1994-08-16 | FI ACCOUNT | 9000.00 |
                                                                                N
ULL | 108 |
               100 |
   110 | John
               Chen
                      | JCHEN | 515.124.4269 | 1997-09-28 | FI ACCOUNT | 8200.00 |
                                                                               NU
LL | 108 |
              100 |
   111 | Ismael | Sciarra | ISCIARRA | 515.124.4369 | 1997-09-30 | FI ACCOUNT | 7700.00 | N
ULL | 108 |
               100
112 | Jose Manuel | Urman | JMURMAN | 515.124.4469 | 1998-03-07 | FI ACCOUNT | 7800.00 |
```

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NULL | 108 | 100 |
                | Popp | LPOPP | 515.124.4567 | 1999-12-07 | FI ACCOUNT | 6900.00 |
     113 | Luis
                                                                                           NUL
    108 |
Ll
                100 |
     114 | Den
                | Raphaely | DRAPHEAL | 515.127.4561 | 1994-12-07 | PU MAN | 11000.00 |
NULL |
         100 |
                    30 |
                                                                                             N
     115 | Alexander | Khoo
                             | AKHOO | 515.127.4562 | 1995-05-18 | PU CLERK | 3100.00 |
ULL |
        114 |
                   30 |
     116 | Shelli
                 Baida
                          | SBAIDA | 515.127.4563
                                                   | 1997-12-24 | PU CLERK | 2900.00 |
                                                                                           NUL
L \mid
     114 |
                30 |
                           | STOBIAS | 515.127.4564 | 1997-07-24 | PU CLERK | 2800.00 |
                                                                                            NU
     117 | Sigal
                | Tobias
      114 |
                 30 |
LL |
                            | GHIMURO | 515.127.4565 | 1998-11-15 | PU CLERK | 2600.00 |
                                                                                              N
     118 | Guy
                 | Himuro
       114 |
ULL |
                  30 |
                  | Colmenares | KCOLMENA | 515.127.4566 | 1999-08-10 | PU CLERK | 2500.00 |
     119 | Karen
 NULL | 114 |
                      30 |
     120 | Matthew | Weiss
                            | MWEISS | 650.123.1234 | 1996-07-18 | ST MAN | 8000.00 |
                                                                                             NU
       100 |
LL |
                 50 |
     121 | Adam
                  Fripp
                           | AFRIPP | 650.123.2234 | 1997-04-10 | ST MAN | 8200.00 |
                                                                                          NULL
     100 |
               50 |
                  | Kaufling | PKAUFLIN | 650.123.3234 | 1995-05-01 | ST MAN | 7900.00 |
     122 | Payam
                                                                                              N
         100 |
ULL |
                   50 |
                  | Vollman | SVOLLMAN | 650.123.4234 | 1997-10-10 | ST MAN | 6500.00 |
     123 | Shanta
NULL |
          100 |
                    50 |
                             | KMOURGOS | 650.123.5234 | 1999-11-16 | ST MAN | 5800.00 |
     124 | Kevin
                  Mourgos
NULL | 100 |
                    50 |
                          | JNAYER | 650.124.1214 | 1997-07-16 | ST CLERK | 3200.00 |
     125 | Julia
                                                                                           NUL
                 Nayer
                50 |
L \mid
     120 |
     126 | Irene
                 | Mikkilineni | IMIKKILI | 650.124.1224 | 1998-09-28 | ST CLERK | 2700.00 |
                                                                                             NU
LL | 120 |
                 50 |
                            | JLANDRY | 650.124.1334 | 1999-01-14 | ST CLERK | 2400.00 |
     127 | James
                  Landry
                                                                                              N
        120 |
                  50 |
ULL |
                            | SMARKLE | 650.124.1434 | 2000-03-08 | ST CLERK | 2200.00 |
     128 | Steven
                  | Markle
ULL |
       120 |
                   50 |
     129 | Laura
                 Bissot
                           | LBISSOT | 650.124.5234 | 1997-08-20 | ST CLERK | 3300.00 |
                                                                                            NUL
L \mid
     121 |
                50 |
                 | Atkinson | MATKINSO | 650.124.6234 | 1997-10-30 | ST CLERK | 2800.00 |
     130 | Mozhe
          121 |
NULL |
                    50 |
     131 | James
                  | Marlow
                            | JAMRLOW | 650.124.7234 | 1997-02-16 | ST CLERK | 2500.00 |
NULL | 121 |
                    50 |
     132 | TJ
                          | TJOLSON | 650.124.8234 | 1999-04-10 | ST CLERK | 2100.00 |
                                                                                           NUL
                 Olson
L \mid
     121 |
                50 |
     133 | Jason
                 | Mallin
                           | JMALLIN | 650.127.1934 | 1996-06-14 | ST CLERK | 3300.00 |
                                                                                            NU
       122 |
                 50 |
LL |
                            | MROGERS | 650.127.1834 | 1998-08-26 | ST CLERK | 2900.00 |
     134 | Michael | Rogers
NULL | 122 |
                    50 |
                         | KGEE | 650.127.1734 | 1999-12-12 | ST CLERK | 2400.00 |
     135 | Ki
                Gee
   122 |
             50 |
     136 | Hazel | Philtanker | HPHILTAN | 650.127.1634 | 2000-02-06 | ST CLERK | 2200.00 |
                                                                                             N
       122 |
ULL |
                  50 |
                           | RLADWIG | 650.121.1234 | 1995-07-14 | ST CLERK | 3600.00 |
     137 | Renske
                 Ladwig
NULL | 123 |
                    50 |
                         | SSTILES | 650.121.2034 | 1997-10-26 | ST CLERK | 3200.00 |
     138 | Stephen | Stiles
                                                                                           NUL
L \mid
     123 |
                50 |
     139 | John
                | Seo | JSEO | 650.121.2019 | 1998-02-12 | ST CLERK | 2700.00 |
                                                                                        NULL |
```

```
123 |
              50 |
     140 | Joshua
                   Patel
                             | JPATEL | 650.121.1834
                                                        | 1998-04-06 | ST CLERK | 2500.00 |
                                                                                                   NUL
L \mid
      123 |
                  50 |
     141 | Trenna
                   Rais
                             TRAJS | 650.121.8009
                                                        | 1995-10-17 | ST CLERK | 3500.00 |
                                                                                                  NULL
                50 |
     124 |
                              | CDAVIES | 650.121.2994
                                                         | 1997-01-29 | ST CLERK | 3100.00 |
     142 | Curtis
                   Davies
                                                                                                     NU
LL |
        124 |
                   50 |
     143 | Randall
                   Matos
                              | RMATOS | 650.121.2874
                                                           | 1998-03-15 | ST CLERK | 2600.00 |
                                                                                                      N
ULL |
         124 |
                     50 |
                             | PVARGAS | 650.121.2004
                                                           | 1998-07-09 | ST CLERK | 2500.00 |
     144 | Peter
                   | Vargas
                                                                                                     NU
LL |
        124 |
                   50 |
     145 | John
                             | JRUSSEL | 011.44.1344.429268 | 1996-10-01 | SA MAN
                   Russell
                                                                                     | 14000.00 |
                                                                                                      0.
40 |
        100 |
                   80 |
     146 | Karen
                   | Partners | KPARTNER | 011.44.1344.467268 | 1997-01-05 | SA MAN
          100 |
                     80 |
 0.30
                   | Errazuriz | AERRAZUR | 011.44.1344.429278 | 1997-03-10 | SA MAN | 12000.00 |
     147 | Alberto
          100 |
 0.30
     148 | Gerald
                    | Cambrault | GCAMBRAU | 011.44.1344.619268 | 1999-10-15 | SA MAN
    0.30 |
             100 |
                        80 |
                             | EZLOTKEY | 011.44.1344.429018 | 2000-01-29 | SA MAN
     149 | Eleni
                   | Zlotkey
0.20
          100 |
                     80 |
     150 | Peter
                   | Tucker
                             | PTUCKER | 011.44.1344.129268 | 1997-01-30 | SA REP | | 10000.00 |
                                                                                                       0.
30 |
       145 |
                   80 |
                   | Bernstein | DBERNSTE | 011.44.1344.345268 | 1997-03-24 | SA REP
     151 | David
0.25
         145 |
                    80 |
     152 | Peter
                   | Hall
                            | PHALL | 011.44.1344.478968 | 1997-08-20 | SA REP | 9000.00 |
                                                                                                   0.25
    145 |
               80 |
     153 | Christopher | Olsen
                               | COLSEN | 011.44.1344.498718 | 1998-03-30 | SA REP
                                                                                                       0
.20
        145 |
                   80 |
                   | Cambrault | NCAMBRAU | 011.44.1344.987668 | 1998-12-09 | SA_REP
     154 | Nanette
  0.20
           145 |
                      80 |
     155 | Oliver
                   | Tuvault
                              | OTUVAULT | 011.44.1344.486508 | 1999-11-23 | SA REP
0.15
         145 |
                    80 |
     156 | Janette
                             JKING | 011.44.1345.429268 | 1996-01-30 | SA REP
                                                                                   | 10000.00 |
                                                                                                    0.35
                   King
    146 |
               80 |
                             | PSULLY | 011.44.1345.929268 | 1996-03-04 | SA REP
     157 | Patrick
                   Sully
                                                                                                    0.35
     146 |
                80 |
     158 | Allan
                               | AMCEWEN | 011.44.1345.829268 | 1996-08-01 | SA REP
                                                                                         | 9000.00 |
                   | McEwen
 0.35
          146
                     80 |
     159 | Lindsey
                              | LSMITH | 011.44.1345.729268 | 1997-03-10 | SA REP
                                                                                                      0.3
                    Smith
                                                                                     | 8000.00 |
                  80 |
0 |
      146 |
     160 | Louise
                   Doran
                              | LDORAN | 011.44.1345.629268 | 1997-12-15 | SA REP
                                                                                      | 7500.00 |
                                                                                                      0.
30 |
        146
                   80 |
                              | SSEWALL | 011.44.1345.529268 | 1998-11-03 | SA_REP
                   Sewall
     161 | Sarath
                                                                                      | 7000.00 |
                                                                                                      0.
25 |
        146
                   80 |
                              | CVISHNEY | 011.44.1346.129268 | 1997-11-11 | SA REP
     162 | Clara
                   | Vishney
                                                                                       | 10500.00 |
0.25
         147 |
                    80 |
     163 | Danielle
                    Greene
                               | DGREENE | 011.44.1346.229268 | 1999-03-19 | SA REP
                                                                                       | 9500.00 |
0.15
         147 |
                    80 |
     164 | Mattea
                    | Marvins
                               | MMARVINS | 011.44.1346.329268 | 2000-01-24 | SA REP
0.10
         147 |
                     80 |
     165 | David
                    Lee
                             | DLEE | 011.44.1346.529268 | 2000-02-23 | SA REP
                                                                                                   0.10
    147 |
               80 |
                              | SANDE | 011.44.1346.629268 | 2000-03-24 | SA REP | 6400.00 |
     166 | Sundar
                    Ande
                                                                                                     0.1
```

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0 |
      147 |
                 80 \pm
     167 | Amit
                  Banda
                             | ABANDA | 011.44.1346.729268 | 2000-04-21 | SA REP | 6200.00 |
10 |
      147 |
                  80 |
     168 | Lisa
                  | Ozer
                            | LOZER | 011.44.1343.929268 | 1997-03-11 | SA REP | 11500.00 |
                                                                                                 0.25
               80 |
    148 |
     169 | Harrison | Bloom
                              | HBLOOM | 011.44.1343.829268 | 1998-03-23 | SA REP | 10000.00 |
0.20
        148 |
                    80 |
     170 | Tayler
                   | Fox
                            TFOX | 011.44.1343.729268 | 1998-01-24 | SA REP
                                                                                                 0.20
    148 |
              80 |
     171 | William | Smith
                             | WSMITH | 011.44.1343.629268 | 1999-02-23 | SA REP
                                                                                    | 7400.00 |
                                                                                                    0.
15 |
      148 |
                  80 |
                             | EBATES | 011.44.1343.529268 | 1999-03-24 | SA REP | 7300.00 |
     172 | Elizabeth | Bates
                                                                                                   0.1
      148 |
5 |
                 80 L
     173 | Sundita
                              | SKUMAR | 011.44.1343.329268 | 2000-04-21 | SA REP
                                                                                     | 6100.00 |
                  Kumar
        148 |
.10
                   80 |
     174 | Ellen
                  Abel
                            | EABEL | 011.44.1644.429267 | 1996-05-11 | SA REP | 11000.00 |
                                                                                                  0.30
     149 |
               80 |
     175 | Alyssa
                   Hutton
                             | AHUTTON | 011.44.1644.429266 | 1997-03-19 | SA REP
                                                                                     | 8800.00 |
                                                                                                     0
.25 |
        149 |
                   80 |
     176 | Jonathon | Taylor
                              | JTAYLOR | 011.44.1644.429265 | 1998-03-24 | SA REP
                                                                                     | 8600.00 |
                                                                                                     0
.20
        149 |
                   80 |
     177 | Jack
                  | Livingston | JLIVINGS | 011.44.1644.429264 | 1998-04-23 | SA REP
                                                                                   | 8400.00 |
                                                                                                    0.
20 |
      149 |
                  80 |
                              | KGRANT | 011.44.1644.429263 | 1999-05-24 | SA REP
     178 | Kimberely | Grant
0.15 |
        149 |
                   NULL |
                                                                                     | 6200.00 |
     179 | Charles
                  Johnson
                              | CJOHNSON | 011.44.1644.429262 | 2000-01-04 | SA REP
0.10
         149 |
                    80 |
     180 | Winston
                              | WTAYLOR | 650.507.9876 | 1998-01-24 | SH CLERK | 3200.00 |
                   | Taylor
NULL |
           120 |
                      50 |
                            | JFLEAUR | 650.507.9877 | 1998-02-23 | SH CLERK | 3100.00 |
                                                                                                  NUL
     181 | Jean
                  | Fleaur
     120 |
                 50 |
     182 | Martha
                 | Sullivan | MSULLIVA | 650.507.9878 | 1999-06-21 | SH CLERK | 2500.00 |
NULL |
           120 |
                      50 |
     183 | Girard
                             | GGEONI | 650.507.9879 | 2000-02-03 | SH CLERK | 2800.00 |
                                                                                                  NU
                   Geoni
LL |
        120 |
                   50 |
                  | Sarchand | NSARCHAN | 650.509.1876 | 1996-01-27 | SH CLERK | 4200.00 |
     184 | Nandita
NULL |
           121 |
                      50 |
     185 | Alexis
                            | ABULL | 650.509.2876 | 1997-02-20 | SH CLERK | 4100.00 |
                                                                                                 NUL
                   Bull
L \mid
      121 |
                 50 |
                  | Dellinger | JDELLING | 650.509.3876 | 1998-06-24 | SH CLERK | 3400.00 |
                                                                                                   NU
     186 | Julia
LL |
        121 |
                   50 |
     187 | Anthony | Cabrio
                              | ACABRIO | 650.509.4876 | 1999-02-07 | SH CLERK | 3000.00 |
                                                                                                   N
         121 |
                    50 |
ULL |
                                                          | 1997-06-14 | SH CLERK | 3800.00 |
     188 | Kelly
                   Chung
                             | KCHUNG | 650.505.1876
                                                                                                   N
ULL |
         122 |
                    50 |
                             | JDILLY | 650.505.2876 | 1997-08-13 | SH CLERK | 3600.00 |
                                                                                                 NUL
     189 | Jennifer | Dilly
      122 |
                 50 |
L \mid
     190 | Timothy | Gates
                              | TGATES | 650.505.3876 | 1998-07-11 | SH CLERK | 2900.00 |
                                                                                                   N
ULL |
         122 |
                    50 |
     191 | Randall
                  | Perkins
                             | RPERKINS | 650.505.4876
                                                          | 1999-12-19 | SH CLERK | 2500.00 |
                                                                                                    N
ULL |
        122 |
                    50 |
                                                    | 1996-02-04 | SH CLERK | 4000.00 |
     192 | Sarah
                  Bell
                            | SBELL | 650.501.1876
                                                                                                NULL
     123 |
               50 |
     193 | Britney | Everett | BEVERETT | 650.501.2876 | 1997-03-03 | SH CLERK | 3900.00 |
                                                                                                    N
```

```
ULL | 123 |
                  50 |
    194 | Samuel
                 | McCain
                           | SMCCAIN | 650.501.3876 | 1998-07-01 | SH_CLERK | 3200.00 |
NULL | 123 |
                   50 |
    195 | Vance
                         | VJONES | 650.501.4876 | 1999-03-17 | SH_CLERK | 2800.00 |
                                                                                      NU
                 Jones
                50 |
LL | 123 |
                          | AWALSH | 650.507.9811
    196 | Alana
                | Walsh
                                                   | 1998-04-24 | SH CLERK | 3100.00 |
                                                                                        N
ULL | 124 |
                  50 |
    197 | Kevin
                          | KFEENEY | 650.507.9822
                                                    | 1998-05-23 | SH CLERK | 3000.00 |
                                                                                        N
                 Feeney
ULL |
       124 |
                  50 |
    198 | Donald
                 | OConnell | DOCONNEL | 650.507.9833 | 1999-06-21 | SH CLERK | 2600.00 |
 NULL | 124 |
                    50 |
    199 | Douglas
                 Grant
                          | DGRANT | 650.507.9844
                                                   | 2000-01-13 | SH CLERK | 2600.00 |
                                                                                        N
ULL |
        124 |
                  50 |
    200 | Jennifer | Whalen
                         | JWHALEN | 515.123.4444
                                                   | 1987-09-17 | AD ASST | 4400.00 |
                                                                                        N
ULL |
       101
                  10 |
    201 | Michael
                | Hartstein | MHARTSTE | 515.123.5555
                                                    | 1996-02-17 | MK MAN | 13000.00 |
NULL | 100 |
    202 | Pat
                       | PFAY | 603.123.6666
                                              | 1997-08-17 | MK REP | 6000.00 |
               | Fay
                                                                                  NULL |
  201
           20 |
                        | SMAVRIS | 515.123.7777
                                                 | 1994-06-07 | HR REP | 6500.00 |
    203 | Susan
                Mavris
                                                                                      NUL
L \mid
    101
               40 |
    204 | Hermann | Baer
                        | HBAER | 515.123.8888
                                                   | 1994-06-07 | PR REP | 10000.00 |
                                                                                      NUL
L \mid
               70 |
    101
    205 | Shelley | Higgins
                         | SHIGGINS | 515.123.8080
                                                  | 1994-06-07 | AC MGR | 12000.00 |
                                                                                        N
ULL | 101 |
                 110 |
    206 | William
                          | WGIETZ | 515.123.8181 | 1994-06-07 | AC ACCOUNT | 8300.00 |
                Gietz
         205 |
                 110 |
NULL |
107 rows in set (0.00 sec)
mysql> select * from job history;
+-----+
employee id start date end date job id department id
+-----+
    101 | 1989-09-21 | 1993-10-27 | AC ACCOUNT |
                                                110
    101 | 1993-10-28 | 1997-03-15 | AC MGR
                                              110
    102 | 1993-01-13 | 1998-07-24 | IT PROG |
                                              60 |
    114 | 1998-03-24 | 1999-12-31 | ST CLERK |
                                               50 |
    122 | 1999-01-01 | 1999-12-31 | ST CLERK |
                                               50 |
    176 | 1998-03-24 | 1998-12-31 | SA REP
                                             80 |
    176 | 1999-01-01 | 1999-12-31 | SA MAN
                                              80 |
    200 | 1987-09-17 | 1993-06-17 | AD ASST
                                              90 |
                                                 90 |
    200 | 1994-07-01 | 1998-12-31 | AC ACCOUNT |
    201 | 1996-02-17 | 1999-12-19 | MK REP
                                              20 |
   -----+----+----+
10 rows in set (0.00 \text{ sec})
mysql> select * from jobs;
| job id | job title
                 | min salary | max salary |
| AC ACCOUNT | Public Accountant
                                        4200 |
                                                9000 |
AC MGR | Accounting Manager
                                       8200 |
                                               16000 |
```

```
AD ASST
          | Administration Assistant
                                         3000 |
                                                  6000 |
AD PRES | President
                                   20000 |
                                             40000 |
AD VP
         | Administration Vice President |
                                         15000
                                                  30000 |
FI_ACCOUNT | Accountant
                                        4200 |
                                                9000 |
         | Finance Manager
                                               16000 |
FI MGR
                                       8200 |
          | Human Resources Representative |
                                            4000 |
HR REP
                                                     9000 |
IT PROG | Programmer
                                     4000 | 10000 |
MK MAN | Marketing Manager
                                         9000 |
                                                  15000 |
MK_REP | Marketing Representative
                                         4000 |
                                                  9000 |
PR REP | Public Relations Representative |
                                          4500 |
                                                  10500 |
PU CLERK | Purchasing Clerk
                                        2500 |
                                                 5500 |
PU_MAN | Purchasing Manager
                                         8000
                                                 15000 |
          | Sales Manager
SA MAN
                                               20000 |
                                      10000 |
SA REP | Sales Representative
                                       6000 |
                                               12000
SH_CLERK | Shipping Clerk
                                       2500 |
                                                5500 |
ST CLERK | Stock Clerk
                                      2000 |
                                              5000 |
ST MAN | Stock Manager
                                      5500 |
                                               8500 |
+----
```

19 rows in set (0.01 sec)

mysql> select * from locations;

ocation_id street_address +	postal_code c		state_province	
1000 1297 Via Cola di Rie		oma	 NULL	 IT
1100 93091 Calle della Testa	10934 V	Venice Venice	NULL	IT
1200 2017 Shinjuku-ku	1689 Tol	kyo '	Tokyo Prefectur	e JP
1300 9450 Kamiya-cho	6823 Hi	iroshima	NULL	JP
1400 2014 Jabberwocky Rd	26192	Southlake	Texas	US
1500 2011 Interiors Blvd	99236 So	uth San Franci	sco California	US
1600 2007 Zagora St	50090 Sou	th Brunswick	New Jersey	US
1700 2004 Charade Rd	98199 Se	eattle '	Washington	US
1800 147 Spadina Ave	M5V 2L7	Toronto	Ontario	CA
1900 6092 Boxwood St	YSW 9T2	Whitehorse	Yukon	CA
2000 40-5-12 Laogianggen	190518	Beijing	NULL	CN
2100 1298 Vileparle (E)	490231 Bo	ombay	Maharashtra	IN
2200 12-98 Victoria Street	2901 Syd	dney	New South Wal	les AU
2300 198 Clementi North	540198 S	Singapore	NULL	SG
2400 8204 Arthur St			NULL	UK
2500 Magdalen Centre, The Oxfor	d Science Park OX	39 9ZB Ox	ford O	xford U
2600 9702 Chester Road	09629850293	Stretford	Manchester	: UK
2700 Schwanthalerstr. 7031	80925 N	Munich	Bavaria	DE
2800 Rua Frei Caneca 1360	01307-002	Sao Paulo	Sao Paulo	BR
2900 20 Rue des Corps-Saints		Geneva	Geneve	CH
3000 Murtenstrasse 921	3095 Bei	rn B	E CH	[
3100 Pieter Breughelstraat 837	3029SK	Utrecht	'	NL
3200 Mariano Escobedo 9991	11932	Mexico City	Distrito F	ederal, MX

23 rows in set (0.00 sec)

```
1 | Europe
    2 | Americas
    3 | Asia
    4 | Middle East and Africa |
+----+
4 rows in set (0.00 \text{ sec})
mysql> select * from employees;
| employee id | first name | last name | email | phone number | hire date | job id | salary | commission
pct | manager id | department id |
100 | Steven
                         | SKING | 515.123.4567 | 1987-06-17 | AD PRES | 24000.00 |
                                                                                    NULL
               King
    NULL |
               90 |
               | Kochhar | NKOCHHAR | 515.123.4568 | 1989-09-21 | AD VP | 17000.00 |
   101 | Neena
NULL | 100 |
                   90 |
    102 | Lex
                | De Haan | LDEHAAN | 515.123.4569 | 1993-01-13 | AD VP | 17000.00 |
                                                                                      NU
LL | 100 |
                90 |
    103 | Alexander | Hunold | AHUNOLD | 590.423.4567 | 1990-01-03 | IT PROG | 9000.00 |
NULL | 102 |
                 60
    104 | Bruce
               | Ernst
                        | BERNST | 590.423.4568 | 1991-05-21 | IT PROG | 6000.00 |
                                                                                    NULL
    103 |
              60 L
    105 | David
               Austin
                        | DAUSTIN | 590.423.4569 | 1997-06-25 | IT PROG | 4800.00 |
                                                                                     NUL
    103 |
L \mid
               60 |
    106 | Valli
               | Pataballa | VPATABAL | 590.423.4560 | 1998-02-05 | IT PROG | 4800.00 |
                                                                                      NU
LL | 103 |
                60
    107 | Diana
                | Lorentz | DLORENTZ | 590.423.5567 | 1999-02-07 | IT PROG | 4200.00 |
                                                                                       N
ULL | 103 |
                60 |
    108 | Nancy
                 | Greenberg | NGREENBE | 515.124.4569 | 1994-08-17 | FI MGR | 12000.00 |
NULL | 101 |
                 100
    109 | Daniel
                | Faviet
                        | DFAVIET | 515.124.4169 | 1994-08-16 | FI ACCOUNT | 9000.00 |
                                                                                       N
ULL | 108 |
                100 |
    110 | John
                Chen
                        | JCHEN | 515.124.4269 | 1997-09-28 | FI ACCOUNT | 8200.00 |
                                                                                      NU
LL | 108 |
                100 |
    111 | Ismael
               | Sciarra | ISCIARRA | 515.124.4369 | 1997-09-30 | FI ACCOUNT | 7700.00 |
ULL |
       108 |
                100
    112 | Jose Manuel | Urman | JMURMAN | 515.124.4469 | 1998-03-07 | FI ACCOUNT | 7800.00 |
  NULL |
            108 | 100 |
                      | LPOPP | 515.124.4567 | 1999-12-07 | FI ACCOUNT | 6900.00 |
                                                                                     NUL
    113 | Luis
               Popp
L \mid
     108 |
              100 |
    114 | Den
             | Raphaely | DRAPHEAL | 515.127.4561 | 1994-12-07 | PU MAN | 11000.00 |
                   30 |
NULL | 100 |
    115 | Alexander | Khoo
                        | AKHOO | 515.127.4562 | 1995-05-18 | PU CLERK | 3100.00 |
                                                                                       N
ULL |
       114 |
                 30 |
    116 | Shelli
                        | SBAIDA | 515.127.4563 | 1997-12-24 | PU CLERK | 2900.00 |
                                                                                     NUL
              Baida
    114 |
               30 |
              | Tobias | STOBIAS | 515.127.4564 | 1997-07-24 | PU CLERK | 2800.00 |
    117 | Sigal
                                                                                     NU
LL | 114 |
                30 |
    118 | Guy
                | Himuro
                        | GHIMURO | 515.127.4565 | 1998-11-15 | PU CLERK | 2600.00 |
                                                                                       N
ULL | 114 |
                 30 |
                | Colmenares | KCOLMENA | 515.127.4566 | 1999-08-10 | PU CLERK | 2500.00 |
    119 | Karen
 NULL | 114 |
                    30 |
```

```
| MWEISS | 650.123.1234 | 1996-07-18 | ST MAN | 8000.00 |
                                                                                               NU
     120 | Matthew | Weiss
LL |
       100
                  50 |
     121 | Adam
                            | AFRIPP | 650.123.2234 | 1997-04-10 | ST MAN | 8200.00 |
                                                                                             NULL
                   Fripp
               50 |
     100 |
     122 | Payam
                   | Kaufling | PKAUFLIN | 650.123.3234 | 1995-05-01 | ST MAN | 7900.00 |
                                                                                                N
ULL |
        100 |
                   50 |
     123 | Shanta
                  | Vollman
                            | SVOLLMAN | 650.123.4234 | 1997-10-10 | ST MAN
                                                                                 | 6500.00 |
NULL |
          100 |
                     50 |
                  | Mourgos | KMOURGOS | 650.123.5234 | 1999-11-16 | ST MAN | 5800.00 |
     124 | Kevin
          100 |
NULL |
                     50 |
     125 | Julia
                           | JNAYER | 650.124.1214 | 1997-07-16 | ST CLERK | 3200.00 |
                                                                                             NUL
                 Nayer
      120 |
                 50 |
L \mid
     126 | Irene
                 | Mikkilineni | IMIKKILI | 650.124.1224 | 1998-09-28 | ST CLERK | 2700.00 |
                                                                                               NU
       120 |
                  50 |
LL |
     127 | James
                  Landry
                            | JLANDRY | 650.124.1334 | 1999-01-14 | ST CLERK | 2400.00 |
                                                                                                N
         120 |
ULL |
                   50 |
                  Markle
                            | SMARKLE | 650.124.1434
                                                       | 2000-03-08 | ST CLERK | 2200.00 |
     128 | Steven
ULL |
         120 |
                   50 |
                 Bissot
                           | LBISSOT | 650.124.5234 | 1997-08-20 | ST CLERK | 3300.00 |
                                                                                              NUL
    129 | Laura
     121 |
                 50 |
                   | Atkinson | MATKINSO | 650.124.6234 | 1997-10-30 | ST CLERK | 2800.00 |
     130 | Mozhe
NULL |
          121 |
                     50 |
                  | Marlow
                             | JAMRLOW | 650.124.7234 | 1997-02-16 | ST CLERK | 2500.00 |
     131 | James
          121 |
NULL |
                     50 |
     132 | TJ
                 Olson
                          | TJOLSON | 650.124.8234 | 1999-04-10 | ST CLERK | 2100.00 |
                                                                                             NUL
L \mid
      121 |
                 50 |
                           | JMALLIN | 650.127.1934 | 1996-06-14 | ST CLERK | 3300.00 |
                                                                                               NU
     133 | Jason
                  | Mallin
       122 |
                  50 |
LL |
     134 | Michael | Rogers | MROGERS | 650.127.1834 | 1998-08-26 | ST CLERK | 2900.00 |
                     50 |
NULL |
          122 |
     135 | Ki
                 Gee
                         | KGEE | 650.127.1734 | 1999-12-12 | ST CLERK | 2400.00 |
                                                                                           NULL |
              50 |
   122 |
                  | Philtanker | HPHILTAN | 650.127.1634 | 2000-02-06 | ST CLERK | 2200.00 |
     136 | Hazel
                                                                                               N
         122 |
                   50 |
ULL |
                           | RLADWIG | 650.121.1234 | 1995-07-14 | ST CLERK | 3600.00 |
    137 | Renske
                  Ladwig
                     50 |
          123 |
NULL |
                          | SSTILES | 650.121.2034 | 1997-10-26 | ST CLERK | 3200.00 |
                                                                                              NUL
     138 | Stephen | Stiles
      123 |
L \mid
                50 |
                           | JSEO | 650.121.2019 | 1998-02-12 | ST CLERK | 2700.00 |
                                                                                          NULL |
     139 | John
                 Seo
   123 |
             50 |
     140 | Joshua
                 | Patel
                           | JPATEL | 650.121.1834 | 1998-04-06 | ST CLERK | 2500.00 |
                                                                                             NUL
                50 |
L \mid
      123 |
     141 | Trenna
                            TRAJS | 650.121.8009 | 1995-10-17 | ST CLERK | 3500.00 |
                                                                                             NULL
                  Rais
     124
               50 |
                            | CDAVIES | 650.121.2994 | 1997-01-29 | ST CLERK | 3100.00 |
     142 | Curtis
                  Davies
                                                                                               NU
       124 |
LL |
                  50 |
     143 | Randall | Matos
                            | RMATOS | 650.121.2874 | 1998-03-15 | ST CLERK | 2600.00 |
                                                                                                N
ULL |
       124 |
                   50 |
     144 | Peter
                            | PVARGAS | 650.121.2004 | 1998-07-09 | ST CLERK | 2500.00 |
                                                                                               NU
                  | Vargas
LL |
       124 |
                  50 |
     145 | John
                  Russell
                           | JRUSSEL | 011.44.1344.429268 | 1996-10-01 | SA MAN | 14000.00 |
                                                                                                0.
40 |
      100 |
                 80 |
     146 | Karen
                 | Partners | KPARTNER | 011.44.1344.467268 | 1997-01-05 | SA MAN | 13500.00 |
        100 |
                    80 |
 0.30
```

```
147 | Alberto
                   | Errazuriz | AERRAZUR | 011.44.1344.429278 | 1997-03-10 | SA MAN | 12000.00 |
 0.30
           100
     148 | Gerald
                    | Cambrault | GCAMBRAU | 011.44.1344.619268 | 1999-10-15 | SA MAN | | 11000.00 |
   0.30
             100 |
                        80 |
     149 | Eleni
                   | Zlotkev
                             | EZLOTKEY | 011.44.1344.429018 | 2000-01-29 | SA MAN
                                                                                        10500.00
0.20
          100 |
                     80 |
     150 | Peter
                   | Tucker
                             | PTUCKER | 011.44.1344.129268 | 1997-01-30 | SA REP | | 10000.00 |
                                                                                                      0.
30 |
       145 |
                   80 |
                   | Bernstein | DBERNSTE | 011.44.1344.345268 | 1997-03-24 | SA REP
     151 | David
0.25 |
         145 |
                    80 |
                            | PHALL | 011.44.1344.478968 | 1997-08-20 | SA REP | 9000.00 |
     152 | Peter
                   | Hall
                                                                                                  0.25
    145 |
               80 |
     153 | Christopher | Olsen | COLSEN | 011.44.1344.498718 | 1998-03-30 | SA REP | 8000.00 |
        145 |
                   80 |
.20
     154 | Nanette
                   | Cambrault | NCAMBRAU | 011.44.1344.987668 | 1998-12-09 | SA_REP
           145 |
                      80 |
  0.20
                   | Tuvault
                             OTUVAULT | 011.44.1344.486508 | 1999-11-23 | SA REP
     155 | Oliver
0.15
         145 |
                    80 |
     156 | Janette
                   King
                             JKING | 011.44.1345.429268 | 1996-01-30 | SA REP | 10000.00 |
                                                                                                   0.35
    146
               80 |
     157 | Patrick
                   Sully
                             | PSULLY | 011.44.1345.929268 | 1996-03-04 | SA REP
                                                                                                    0.35
     146
                80 |
                              | AMCEWEN | 011.44.1345.829268 | 1996-08-01 | SA REP
     158 | Allan
                   | McEwen
                                                                                       | 9000.00 |
          146
 0.35
                     80 |
     159 | Lindsey
                    Smith
                              | LSMITH | 011.44.1345.729268 | 1997-03-10 | SA REP
                                                                                    | 8000.00 |
                                                                                                     0.3
                 80 |
      146
0 |
     160 | Louise
                   Doran
                              | LDORAN | 011.44.1345.629268 | 1997-12-15 | SA REP
                                                                                      | 7500.00 |
                                                                                                      0.
       146
30 |
                   80 |
     161 | Sarath
                   Sewall
                              | SSEWALL | 011.44.1345.529268 | 1998-11-03 | SA REP | 7000.00 |
                                                                                                      0.
       146
25 |
                   80 |
     162 | Clara
                              | CVISHNEY | 011.44.1346.129268 | 1997-11-11 | SA REP
                   | Vishney
                                                                                      | 10500.00 |
0.25
         147 |
                    80 |
     163 | Danielle | Greene
                              | DGREENE | 011.44.1346.229268 | 1999-03-19 | SA REP
                                                                                       | 9500.00 |
         147 |
0.15
                    80 |
     164 | Mattea
                    | Marvins
                              | MMARVINS | 011.44.1346.329268 | 2000-01-24 | SA REP
                                                                                       | 7200.00 |
0.10
         147 |
                     80 |
                                                                                                  0.10 |
                             | DLEE | 011.44.1346.529268 | 2000-02-23 | SA REP | 6800.00 |
     165 | David
                    Lee
    147 |
               80 |
     166 | Sundar
                              | SANDE | 011.44.1346.629268 | 2000-03-24 | SA REP | 6400.00 |
                                                                                                     0.1
                    Ande
0 |
      147 |
                 80 |
                              | ABANDA | 011.44.1346.729268 | 2000-04-21 | SA REP
                                                                                                      0.
     167 | Amit
                   Banda
                                                                                     | 6200.00 |
10 |
      147 |
                   80 |
     168 | Lisa
                            LOZER | 011.44.1343.929268 | 1997-03-11 | SA REP | 11500.00 |
                                                                                                   0.25
                  Ozer
    148
               80 |
     169 | Harrison | Bloom
                               | HBLOOM | 011.44.1343.829268 | 1998-03-23 | SA REP | 10000.00 |
0.20
        148 |
                    80 |
     170 | Tayler
                             TFOX | 011.44.1343.729268 | 1998-01-24 | SA REP | 9600.00 |
                                                                                                  0.20
                   Fox
    148 |
               80 |
                              | WSMITH | 011.44.1343.629268 | 1999-02-23 | SA REP
     171 | William
                   Smith
                                                                                      | 7400.00 |
                                                                                                      0.
15 |
       148 |
                  80 |
     172 | Elizabeth | Bates
                              | EBATES | 011.44.1343.529268 | 1999-03-24 | SA REP | | 7300.00 |
                                                                                                     0.1
     148 |
5 |
                 80 |
     173 | Sundita | Kumar
                                                                                                       0
                               | SKUMAR | 011.44.1343.329268 | 2000-04-21 | SA REP
                                                                                      | 6100.00 |
.10
        148 |
                   80 |
```

```
| EABEL | 011.44.1644.429267 | 1996-05-11 | SA REP | 11000.00 |
                                                                                               0.30
     174 | Ellen
                 | Abel
     149 |
               80 |
     175 | Alyssa
                  | Hutton | AHUTTON | 011.44.1644.429266 | 1997-03-19 | SA REP
                                                                                   1 8800.00 1
                                                                                                   0
.25 |
    149 |
                  80 |
     176 | Jonathon | Taylor
                             | JTAYLOR | 011.44.1644.429265 | 1998-03-24 | SA REP
                                                                                   | 8600.00 |
.20
       149 |
                  80 |
     177 | Jack
                  | Livingston | JLIVINGS | 011.44.1644.429264 | 1998-04-23 | SA REP | 8400.00 |
                                                                                                 0.
20 |
      149 |
                  80 |
     178 | Kimberely | Grant
                             KGRANT | 011.44.1644.429263 | 1999-05-24 | SA REP
                                                                                   1 7000.00 1
0.15
        149 |
                  NULL |
     179 | Charles | Johnson
                            | CJOHNSON | 011.44.1644.429262 | 2000-01-04 | SA REP
                                                                                   | 6200.00 |
                   80 |
0.10
         149 |
                             | WTAYLOR | 650.507.9876 | 1998-01-24 | SH CLERK | 3200.00 |
     180 | Winston
                  | Taylor
          120 |
                     50 |
NULL |
     181 | Jean
                 | Fleaur
                           | JFLEAUR | 650.507.9877 | 1998-02-23 | SH CLERK | 3100.00 |
                                                                                               NUL
      120 |
                 50 |
                 | Sullivan | MSULLIVA | 650.507.9878 | 1999-06-21 | SH CLERK | 2500.00 |
     182 | Martha
NULL |
          120 |
                     50 |
     183 | Girard
                            | GGEONI | 650.507.9879 | 2000-02-03 | SH CLERK | 2800.00 |
                                                                                                NU
                  Geoni
LL
       120
                  50 |
                  | Sarchand | NSARCHAN | 650.509.1876 | 1996-01-27 | SH CLERK | 4200.00 |
     184 | Nandita
NULL |
           121 |
                      50 |
                 Bull
     185 | Alexis
                           | ABULL | 650.509.2876 | 1997-02-20 | SH CLERK | 4100.00 |
                                                                                              NUL
      121 |
                 50 |
L \mid
     186 | Julia
                 | Dellinger | JDELLING | 650.509.3876 | 1998-06-24 | SH CLERK | 3400.00 |
                                                                                                NU
       121 |
LL |
                  50 |
                              | ACABRIO | 650.509.4876 | 1999-02-07 | SH CLERK | 3000.00 |
                                                                                                 N
     187 | Anthony | Cabrio
ULL
        121 |
                    50 |
     188 | Kelly
                  Chung
                            | KCHUNG | 650.505.1876 | 1997-06-14 | SH CLERK | 3800.00 |
                                                                                                 N
ULL |
         122 |
                    50 |
     189 | Jennifer | Dilly
                            | JDILLY | 650.505.2876 | 1997-08-13 | SH CLERK | 3600.00 |
                                                                                              NUL
                 50 |
      122 |
     190 | Timothy | Gates
                             | TGATES | 650.505.3876 | 1998-07-11 | SH CLERK | 2900.00 |
                                                                                                 N
         122 |
                    50 |
ULL |
     191 | Randall
                            | RPERKINS | 650.505.4876 | 1999-12-19 | SH CLERK | 2500.00 |
                  Perkins
                                                                                                 N
         122 |
                    50 |
ULL |
                           | SBELL | 650.501.1876 | 1996-02-04 | SH CLERK | 4000.00 |
     192 | Sarah
                  | Bell
                                                                                             NULL
    123 |
               50 |
     193 | Britney | Everett
                           | BEVERETT | 650.501.2876 | 1997-03-03 | SH CLERK | 3900.00 |
                                                                                                 N
ULL |
         123 |
                   50 |
     194 | Samuel
                   | McCain
                             | SMCCAIN | 650.501.3876
                                                        | 1998-07-01 | SH CLERK | 3200.00 |
NULL |
           123 |
                     50 |
     195 | Vance
                   Jones
                            | VJONES | 650.501.4876 | 1999-03-17 | SH CLERK | 2800.00 |
                                                                                                NU
        123 |
LL |
                  50 |
     196 | Alana
                  | Walsh
                            | AWALSH | 650.507.9811 | 1998-04-24 | SH CLERK | 3100.00 |
                                                                                                 N
        124 |
ULL |
                   50 |
     197 | Kevin
                             | KFEENEY | 650.507.9822 | 1998-05-23 | SH CLERK | 3000.00 |
                   Feenev
                                                                                                 N
ULL |
         124 |
                    50 |
                   | OConnell | DOCONNEL | 650.507.9833 | 1999-06-21 | SH CLERK | 2600.00 |
     198 | Donald
 NULL |
          124 |
                      50 |
    199 | Douglas
                  Grant
                             | DGRANT | 650.507.9844 | 2000-01-13 | SH CLERK | 2600.00 |
                                                                                                 N
ULL |
         124 |
                    50 |
     200 | Jennifer | Whalen
                             | JWHALEN | 515.123.4444 | 1987-09-17 | AD ASST | 4400.00 |
                                                                                                 N
ULL |
         101 |
                    10 |
```

```
201 | Michael | Hartstein | MHARTSTE | 515.123.5555 | 1996-02-17 | MK MAN | 13000.00 |
NULL | 100 |
                 20 |
                     | PFAY | 603.123.6666 | 1997-08-17 | MK REP | 6000.00 | NULL |
    202 | Pat | Fav
 201 |
          20 |
    203 | Susan | Mavris | SMAVRIS | 515.123.7777 | 1994-06-07 | HR REP | 6500.00 |
                                                                              NUL
    101 |
              40 |
L \mid
    204 | Hermann | Baer
                        | HBAER | 515.123.8888
                                              | 1994-06-07 | PR REP | 10000.00 |
                                                                              NUL
L \mid
    101 |
              70 |
    205 | Shelley | Higgins | SHIGGINS | 515.123.8080 | 1994-06-07 | AC MGR | 12000.00 |
                                                                                N
ULL | 101 | 110 |
    206 | William | Gietz
                       | WGIETZ | 515.123.8181 | 1994-06-07 | AC ACCOUNT | 8300.00 |
NULL |
        205 | 110 |
107 rows in set (0.00 sec)
mysql> select * from employees;
| employee id | first name | last name | email | phone number | hire date | job id | salary | commission
pct | manager id | department id |
| SKING | 515.123.4567 | 1987-06-17 | AD PRES | 24000.00 | NULL
   100 | Steven | King
   NULL |
              90 |
             | Kochhar | NKOCHHAR | 515.123.4568 | 1989-09-21 | AD VP | 17000.00 |
   101 | Neena
NULL | 100 |
               90 |
    102 | Lex
              | De Haan | LDEHAAN | 515.123.4569 | 1993-01-13 | AD VP | 17000.00 |
                                                                               NU
LL | 100 |
               90 |
    103 | Alexander | Hunold | AHUNOLD | 590.423.4567 | 1990-01-03 | IT PROG | 9000.00 |
NULL | 102 |
               60 |
              | Ernst | BERNST | 590.423.4568 | 1991-05-21 | IT PROG | 6000.00 |
    104 | Bruce
                                                                             NULL
    103 |
             60 |
                      | DAUSTIN | 590.423.4569 | 1997-06-25 | IT PROG | 4800.00 |
    105 | David
             Austin
                                                                              NUL
L \mid
    103 |
              60 |
              | Pataballa | VPATABAL | 590.423.4560 | 1998-02-05 | IT PROG | 4800.00 |
    106 | Valli
                                                                              NU
LL | 103 |
               60 |
    107 | Diana
             | Lorentz | DLORENTZ | 590.423.5567 | 1999-02-07 | IT PROG | 4200.00 |
                                                                                N
ULL | 103 |
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               | Greenberg | NGREENBE | 515.124.4569 | 1994-08-17 | FI_MGR | 12000.00 |
    108 | Nancy
NULL | 101 |
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                      | DFAVIET | 515.124.4169 | 1994-08-16 | FI ACCOUNT | 9000.00 |
| 109 | Daniel
              | Faviet
                                                                                N
ULL | 108 |
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                      | JCHEN | 515.124.4269 | 1997-09-28 | FI ACCOUNT | 8200.00 |
   110 | John
                                                                               NU
               Chen
LL | 108 |
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    111 | Ismael | Sciarra | ISCIARRA | 515.124.4369 | 1997-09-30 | FI ACCOUNT | 7700.00 |
                                                                              N
ULL | 108 | 100 |
   112 | Jose Manuel | Urman | JMURMAN | 515.124.4469 | 1998-03-07 | FI ACCOUNT | 7800.00 |
  NULL | 108 | 100 |
    113 | Luis | Popp | LPOPP | 515.124.4567 | 1999-12-07 | FI ACCOUNT | 6900.00 |
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L | 108 |
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    114 | Den | Raphaely | DRAPHEAL | 515.127.4561 | 1994-12-07 | PU MAN | 11000.00 |
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   115 | Alexander | Khoo | AKHOO | 515.127.4562 | 1995-05-18 | PU CLERK | 3100.00 |
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                                                    | 1997-12-24 | PU CLERK | 2900.00 |
     116 | Shelli
                 | Baida
                           | SBAIDA | 515.127.4563
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L \mid
     114 |
                30 |
     117 | Sigal
                 | Tobias
                           | STOBIAS | 515.127.4564 | 1997-07-24 | PU CLERK | 2800.00 |
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LL |
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     118 | Guy
                 | Himuro
                           | GHIMURO | 515.127.4565 | 1998-11-15 | PU CLERK | 2600.00 |
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ULL |
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     119 | Karen
                  | Colmenares | KCOLMENA | 515.127.4566 | 1999-08-10 | PU CLERK | 2500.00 |
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                             | MWEISS | 650.123.1234 | 1996-07-18 | ST MAN
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     121 | Adam
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                  | Vollman | SVOLLMAN | 650.123.4234 | 1997-10-10 | ST MAN
     123 | Shanta
                                                                                | 6500.00 |
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     124 | Kevin
                  Mourgos
                             | KMOURGOS | 650.123.5234 | 1999-11-16 | ST MAN | 5800.00 |
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                          | JNAYER | 650.124.1214 | 1997-07-16 | ST CLERK | 3200.00 |
     125 | Julia
                                                                                            NUL
                 Naver
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                 | Mikkilineni | IMIKKILI | 650.124.1224 | 1998-09-28 | ST CLERK | 2700.00 |
     126 | Irene
                                                                                              NU
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     127 | James
                                                                                               N
                  Landry
ULL |
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ULL |
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     129 | Laura
                  Bissot
                           | LBISSOT | 650.124.5234 | 1997-08-20 | ST CLERK | 3300.00 |
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                   | Atkinson | MATKINSO | 650.124.6234 | 1997-10-30 | ST CLERK | 2800.00 |
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                          | TJOLSON | 650.124.8234 | 1999-04-10 | ST CLERK | 2100.00 |
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L \mid
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                           | JMALLIN | 650.127.1934 | 1996-06-14 | ST CLERK | 3300.00 |
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                           | JPATEL | 650.121.1834 | 1998-04-06 | ST CLERK | 2500.00 |
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                              | RMATOS | 650.121.2874 | 1998-03-15 | ST CLERK | 2600.00 |
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                             | PVARGAS | 650.121.2004 | 1998-07-09 | ST CLERK | 2500.00 |
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     149 | Eleni
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                             OTUVAULT | 011.44.1344.486508 | 1999-11-23 | SA REP
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     160 | Louise
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                   | Vishney
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     164 | Mattea
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                    Ande
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     167 | Amit
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                             | WSMITH | 011.44.1343.629268 | 1999-02-23 | SA REP
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     172 | Elizabeth | Bates
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     181 | Jean
                            | JFLEAUR | 650.507.9877 | 1998-02-23 | SH CLERK | 3100.00 |
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     182 | Martha
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     183 | Girard
                             | GGEONI | 650.507.9879 | 2000-02-03 | SH CLERK | 2800.00 |
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                   Geoni
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     184 | Nandita
                  | Sarchand | NSARCHAN | 650.509.1876 | 1996-01-27 | SH CLERK | 4200.00 |
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     185 | Alexis
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     186 | Julia
                 | Dellinger | JDELLING | 650.509.3876 | 1998-06-24 | SH CLERK | 3400.00 |
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                              | ACABRIO | 650.509.4876 | 1999-02-07 | SH CLERK | 3000.00 |
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     189 | Jennifer | Dilly
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     190 | Timothy | Gates
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ULL |
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     193 | Britney | Everett
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     194 | Samuel
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     195 | Vance
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                             | VJONES | 650.501.4876 | 1999-03-17 | SH CLERK | 2800.00 |
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     196 | Alana
                  | Walsh
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                          | KFEENEY | 650.507.9822
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     199 | Douglas
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                          | JWHALEN | 515.123.4444
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    203 | Susan
                | Mavris
                          | SMAVRIS | 515.123.7777
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L \mid
    204 | Hermann | Baer
                           | HBAER | 515.123.8888
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                                                                                      NUL
                                                                       | 10000.00 |
L \mid
     101 |
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     205 | Shelley | Higgins
                          | SHIGGINS | 515.123.8080
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ULL |
       101 |
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     206 | William
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                          | WGIETZ | 515.123.8181 | 1994-06-07 | AC ACCOUNT | 8300.00 |
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NULL |
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+----+
| employee id | count(*) |
+----+
     100 | 107 |
+----+
1 row in set (0.01 \text{ sec})
mysql> select first name, last name, job id from employees;
+----+
| first name | last name | job id
+----+
Steven
         King
                 | AD PRES
         Kochhar
Neena
                 AD VP
Lex
        De Haan
                  AD VP
Alexander | Hunold | IT PROG |
Bruce
        Ernst
                 | IT PROG |
                 | IT PROG
David
        Austin
Valli
        | Pataballa | IT PROG
Diana
       Lorentz
                 | IT PROG |
Nancy
        | Greenberg | FI MGR
                 | FI ACCOUNT |
Daniel
        | Faviet
John
        Chen
                 | FI ACCOUNT |
Ismael
        Sciarra
                | FI ACCOUNT |
Jose Manuel | Urman | FI ACCOUNT |
                | FI ACCOUNT |
        Popp
Luis
Den
        | Raphaely | PU MAN
Alexander | Khoo
                 | PU CLERK |
Shelli
        Baida
                PU CLERK
```

```
| Tobias
Sigal
                  | PU CLERK |
Guy
         | Himuro
                   | PU CLERK |
         | Colmenares | PU CLERK |
Karen
Matthew
          Weiss
                    ST MAN
Adam
         | Fripp
                  ST MAN
Payam
          | Kaufling
                   ST MAN
         | Vollman
Shanta
                    ST MAN
Kevin
         | Mourgos
                     ST MAN
Julia
        Naver
                 ST CLERK
        | Mikkilineni | ST CLERK
Irene
James
         Landry
                   ST CLERK
         | Markle
                   ST CLERK
Steven
                  ST CLERK
Laura
         Bissot
Mozhe
         Atkinson
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James
         | Marlow
                   ST CLERK |
TJ
       Olson
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        | Mallin
                  ST CLERK
Jason
Michael
         Rogers
                   ST CLERK
Ki
       Gee
                ST CLERK
         | Philtanker | ST CLERK
Hazel
                    ST CLERK |
Renske
         Ladwig
Stephen
         | Stiles
                  ST CLERK
                 ST CLERK
John
        Seo
                  ST CLERK
Joshua
         | Patel
Trenna
         Rajs
                  ST CLERK
Curtis
        | Davies
                  ST CLERK
Randall
         | Matos
                   ST CLERK
Peter
        | Vargas
                  ST CLERK
John
        Russell
                  | SA MAN
Karen
         | Partners
                 SA MAN
Alberto
         | Errazuriz | SA MAN
Gerald
         | Cambrault | SA MAN
Eleni
        | Zlotkey
                   SA MAN
Peter
        | Tucker
                  | SA REP
David
         | Bernstein | SA REP
Peter
                 | SA REP
        | Hall
                    | SA REP
Christopher | Olsen
Nanette
         | Cambrault | SA REP
Oliver
         | Tuvault
                   | SA REP
         King
                  SA REP
Janette
         Sully
Patrick
                  | SA REP
Allan
         McEwen
                    | SA REP
         Smith
                   | SA REP
Lindsey
Louise
         Doran
                   | SA REP
Sarath
         Sewall
                  | SA REP
        | Vishney
Clara
                   | SA REP
Danielle
         Greene
                   | SA REP
Mattea
         | Marvins
                   | SA REP
David
         Lee
                  | SA REP
Sundar
         | Ande
                   SA REP
Amit
         Banda
                  | SA REP
Lisa
        | Ozer
                 | SA REP
Harrison
         Bloom
                    | SA REP
| Tayler
         | Fox
                 | SA REP
```

```
William
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Elizabeth | Bates
                  | SA REP
                  | SA REP
Sundita
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Ellen
        Abel
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Alyssa
         | Hutton
                  | SA REP
Jonathon | Taylor
                   | SA REP
        | Livingston | SA REP
Jack
Kimberely | Grant
                   | SA REP
                    SA REP
Charles
        Johnson
                   | SH CLERK |
Winston
         | Taylor
                 | SH CLERK |
Jean
        | Fleaur
         | Sullivan | SH CLERK |
Martha
                  | SH CLERK |
Girard
         Geoni
Nandita
         | Sarchand | SH CLERK |
Alexis
         Bull
                 SH CLERK
        | Dellinger | SH CLERK |
Julia
Anthony | Cabrio
                  SH CLERK
Kelly
        Chung
                  SH CLERK
Jennifer | Dilly
                 SH CLERK
Timothy
         Gates
                  SH CLERK
         | Perkins
                  | SH CLERK |
Randall
Sarah
         | Bell
                 SH CLERK
                  SH CLERK
Britney
         | Everett
                  SH CLERK
 Samuel
         | McCain
Vance
         Jones
                  SH CLERK
Alana
         | Walsh
                  SH CLERK
                  | SH CLERK |
Kevin
         Feeney
         OConnell | SH CLERK |
Donald
Douglas
         Grant
                  SH CLERK
Jennifer
        | Whalen
                  AD ASST
Michael
         | Hartstein | MK MAN
                | MK REP
Pat
       | Fay
         | Mavris
                 | HR REP
Susan
         Baer
                  | PR REP
Hermann
Shelley
         Higgins
                  AC MGR
         Gietz
                  | AC ACCOUNT |
William
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107 rows in set (0.00 sec)
mysql> select * from jobs;
job id job title
                           | min salary | max salary |
+-----+
| AC ACCOUNT | Public Accountant
                                         4200 |
                                                  9000 |
AC MGR
           | Accounting Manager
                                        8200 |
                                                16000 |
           | Administration Assistant
AD ASST
                                        3000
                                                6000
AD PRES
           | President
                                  20000 |
                                           40000 |
AD VP
          | Administration Vice President |
                                        15000 |
                                                 30000 |
FI ACCOUNT | Accountant
                                      4200 |
                                               9000 |
FI MGR
         | Finance Manager
                                     8200 |
                                             16000 |
HR REP
          | Human Resources Representative |
                                                   9000 |
                                           4000 |
          Programmer
IT PROG
                                    4000 |
                                            10000 |
                                        9000 |
           | Marketing Manager
MK MAN
                                                15000 |
                                        4000 |
MK REP
           | Marketing Representative
                                                9000 |
```

```
| Public Relations Representative |
                                          4500 |
PR REP
                                                  10500
 PU CLERK | Purchasing Clerk
                                        2500
                                                5500 |
 PU MAN | Purchasing Manager
                                        8000
                                                 15000 |
          | Sales Manager
SA MAN
                                      10000 |
                                               20000 |
 SA_REP | Sales Representative
                                      6000
                                               12000
SH CLERK | Shipping Clerk
                                       2500 |
                                               5500 |
ST CLERK | Stock Clerk
                                      2000 |
                                              5000 |
ST MAN | Stock Manager
                                      5500 |
                                               8500 |
19 rows in set (0.00 sec)
mysql> select first name, last name, job id from employees group by job id with rollup;
ERROR 1054 (42S22): Unknown column 'last' in 'field list'
mysql> select first name, last name, job id from employees group by job id with rollup;
+----+
| first_name | last_name | job_id |
+----+
| William | Gietz | AC ACCOUNT |
Shelley | Higgins | AC MGR
Jennifer | Whalen | AD ASST
               | AD_PRES |
 Steven
         King
Neena
         | Kochhar | AD VP
        | Faviet | FI ACCOUNT |
Daniel
        | Greenberg | FI MGR
Nancy
 Susan
       | Mavris | HR REP
Alexander | Hunold | IT_PROG
 Michael | Hartstein | MK MAN
 Pat
       | Fay | MK REP
 Hermann | Baer | PR REP
 Alexander | Khoo
                 | PU CLERK |
Den
        | Raphaely | PU MAN
        | Russell | SA_MAN
 John
Peter
        | Tucker | SA REP
Winston | Taylor | SH CLERK |
 Julia
       | Nayer | ST CLERK |
Matthew | Weiss | ST MAN
| Matthew | Weiss | NULL
+----+
20 rows in set (0.00 \text{ sec})
mysql> select first name, last name, job id from employees group by job id, job title with rollup;
ERROR 1054 (42S22): Unknown column 'job title' in 'group statement'
mysql> select first name, last name, job id from employees group by job id with rollup;
+----+
| first_name | last_name | job_id
+----+
| William | Gietz | AC ACCOUNT |
Shelley
         | Higgins | AC_MGR
Jennifer | Whalen | AD ASST |
Steven
         King
               AD PRES
         | Kochhar | AD VP
Neena
Daniel
        | Faviet | FI ACCOUNT |
         | Greenberg | FI MGR |
Nancy
        | Mavris | HR REP
Susan
```

```
| Fay | MK REP |
 Pat
Hermann | Baer | PR REP
 Alexander | Khoo
                 | PU CLERK |
        | Raphaely | PU MAN
        | Russell | SA MAN
John
 Peter
      | Tucker | SA REP |
Winston | Taylor | SH CLERK |
      | Nayer | ST CLERK |
Matthew | Weiss | ST MAN
| Matthew | Weiss
                 NULL
20 rows in set (0.00 \text{ sec})
mysql> select * from employees;
| employee id | first_name | last_name | email | phone number | hire_date | job_id | salary | commission
pct | manager id | department id |
----+
    100 | Steven | King
                          | SKING | 515.123.4567 | 1987-06-17 | AD PRES | 24000.00 |
                                                                                         NULL
    NULL |
                 90 |
    101 | Neena
                Kochhar
                           | NKOCHHAR | 515.123.4568
                                                         | 1989-09-21 | AD VP
                                                                              | 17000.00 |
NULL | 100 |
                    90 |
     102 | Lex
                 De Haan
                          |LDEHAAN | 515.123.4569
                                                      | 1993-01-13 | AD VP | 17000.00 |
                                                                                           NU
LL | 100 |
                 90 |
     103 | Alexander | Hunold | AHUNOLD | 590.423.4567 | 1990-01-03 | IT PROG | 9000.00 |
NULL | 102 |
                    60 |
     104 | Bruce
                          | BERNST | 590.423.4568
                                                   | 1991-05-21 | IT PROG | 6000.00 |
                                                                                         NULL
                 | Ernst
     103 |
               60
                           | DAUSTIN | 590.423.4569
                                                     | 1997-06-25 | IT PROG | 4800.00 |
                                                                                          NUL
     105 | David
                 Austin
L \mid
     103 |
                60 |
     106 | Valli
                | Pataballa | VPATABAL | 590.423.4560
                                                     | 1998-02-05 | IT PROG | 4800.00 |
                                                                                           NU
LL | 103 |
                 60 |
     107 | Diana
                 | Lorentz | DLORENTZ | 590.423.5567
                                                     | 1999-02-07 | IT PROG | 4200.00 |
                                                                                            N
ULL | 103 |
                  60 |
                  | Greenberg | NGREENBE | 515.124.4569 | 1994-08-17 | FI MGR | 12000.00 |
    108 | Nancy
NULL |
         101 |
                  100 |
                          | DFAVIET | 515.124.4169
                                                   | 1994-08-16 | FI ACCOUNT | 9000.00 |
    109 | Daniel
                 | Faviet
                                                                                            N
ULL |
        108 |
                  100 |
     110 | John
                 Chen
                          | JCHEN | 515.124.4269 | 1997-09-28 | FI ACCOUNT | 8200.00 |
                                                                                           NU
LL |
       108 |
                 100
    111 | Ismael
                 Sciarra
                         | ISCIARRA | 515.124.4369 | 1997-09-30 | FI ACCOUNT | 7700.00 |
                                                                                            N
ULL |
        108 |
                  100 |
                            | JMURMAN | 515.124.4469
                                                         | 1998-03-07 | FI ACCOUNT | 7800.00 |
     112 | Jose Manuel | Urman
  NULL | 108 | 100 |
                        | LPOPP | 515.124.4567 | 1999-12-07 | FI ACCOUNT | 6900.00 |
                                                                                          NUL
     113 | Luis
                Popp
Ll
    108 |
                100 |
    114 | Den
              | Raphaely | DRAPHEAL | 515.127.4561 | 1994-12-07 | PU MAN | 11000.00 |
NULL |
          100 |
                    30 |
                                                      | 1995-05-18 | PU CLERK | 3100.00 |
     115 | Alexander | Khoo
                            | AKHOO | 515.127.4562
                                                                                            N
ULL |
       114 |
                  30 |
```

| Alexander | Hunold | IT_PROG | | Michael | Hartstein | MK MAN

```
| SBAIDA | 515.127.4563 | 1997-12-24 | PU CLERK | 2900.00 |
                                                                                         NUL
    116 | Shelli
               | Baida
                30 |
L \mid
    114 |
                        | STOBIAS | 515.127.4564 | 1997-07-24 | PU CLERK | 2800.00 |
    117 | Sigal
              | Tobias
                                                                                          NU
LL | 114 |
                 30 |
                           | GHIMURO | 515.127.4565 | 1998-11-15 | PU CLERK | 2600.00 |
     118 | Guy
                 | Himuro
                                                                                        N
ULL | 114 |
                  30 |
    119 | Karen
                 | Colmenares | KCOLMENA | 515.127.4566 | | 1999-08-10 | PU CLERK | 2500.00 |
 NULL | 114 |
                      30 |
                            | MWEISS | 650.123.1234 | 1996-07-18 | ST MAN | 8000.00 |
     120 | Matthew | Weiss
                                                                                           NU
LL | 100 |
                 50 |
     121 | Adam
                 Fripp
                          | AFRIPP | 650.123.2234 | 1997-04-10 | ST MAN | 8200.00 |
                                                                                        NULL
     100 |
              50 |
     122 | Payam
                | Kaufling | PKAUFLIN | 650.123.3234 | 1995-05-01 | ST MAN | 7900.00 |
                                                                                            N
        100 |
ULL |
                  50 |
     123 | Shanta
                 | Vollman | SVOLLMAN | 650.123.4234 | 1997-10-10 | ST MAN | 6500.00 |
NULL | 100 |
                    50 |
                 | Mourgos | KMOURGOS | 650.123.5234 | 1999-11-16 | ST MAN | 5800.00 |
    124 | Kevin
NULL |
          100 |
                    50 |
    125 | Julia
                        | JNAYER | 650.124.1214 | 1997-07-16 | ST CLERK | 3200.00 |
                                                                                         NUL
                | Nayer
L | 120 |
                50 |
     126 | Irene
                | Mikkilineni | IMIKKILI | 650.124.1224 | 1998-09-28 | ST CLERK | 2700.00 |
                                                                                           NU
LL | 120 |
                 50 |
     127 | James
                 Landry
                           | JLANDRY | 650.124.1334 | 1999-01-14 | ST CLERK | 2400.00 |
                                                                                            N
ULL | 120 |
                 50 |
     128 | Steven
                 Markle
                           | SMARKLE | 650.124.1434 | 2000-03-08 | ST CLERK | 2200.00 |
ULL |
        120 |
                  50 |
    129 | Laura
                Bissot
                          | LBISSOT | 650.124.5234 | 1997-08-20 | ST CLERK | 3300.00 |
                                                                                          NUL
    121 |
                50 |
     130 | Mozhe
                | Atkinson | MATKINSO | 650.124.6234 | 1997-10-30 | ST CLERK | 2800.00 |
         121 |
NULL |
                 50 |
     131 | James
                 | Marlow
                            | JAMRLOW | 650.124.7234 | 1997-02-16 | ST CLERK | 2500.00 |
          121 |
                    50 |
NULL |
    132 | TJ
                Olson
                         | TJOLSON | 650.124.8234 | 1999-04-10 | ST CLERK | 2100.00 |
                                                                                         NUL
    121 |
L \mid
                50 |
               | Mallin | JMALLIN | 650.127.1934 | 1996-06-14 | ST CLERK | 3300.00 |
    133 | Jason
                                                                                          NU
LL | 122 |
                 50 |
                          | MROGERS | 650.127.1834 | 1998-08-26 | ST CLERK | 2900.00 |
    134 | Michael | Rogers
NULL | 122 |
                    50 |
                        | KGEE | 650.127.1734 | 1999-12-12 | ST CLERK | 2400.00 | NULL |
    135 | Ki
                Gee
   122 |
             50 |
    136 | Hazel
               | Philtanker | HPHILTAN | 650.127.1634 | 2000-02-06 | ST CLERK | 2200.00 |
                                                                                           N
ULL | 122 |
                  50 |
                          | RLADWIG | 650.121.1234 | 1995-07-14 | ST CLERK | 3600.00 |
    137 | Renske
                  Ladwig
NULL |
          123 |
                    50 |
    138 | Stephen | Stiles | SSTILES | 650.121.2034 | 1997-10-26 | ST CLERK | 3200.00 |
                                                                                         NUL
   123 |
                50 |
L \mid
                         | JSEO | 650.121.2019 | 1998-02-12 | ST CLERK | 2700.00 |
     139 | John
              | Seo
                                                                                      NULL |
   123 | 50 |
                          | JPATEL | 650.121.1834 | 1998-04-06 | ST CLERK | 2500.00 |
    140 | Joshua
                | Patel
                                                                                         NUL
L \mid
     123 |
                50 |
     141 | Trenna
                Rais
                          | TRAJS | 650.121.8009 | 1995-10-17 | ST CLERK | 3500.00 |
                                                                                        NULL
     124 |
               50 |
                         | CDAVIES | 650.121.2994 | 1997-01-29 | ST CLERK | 3100.00 |
     142 | Curtis | Davies
                                                                                           NU
     124 |
LL |
                 50 |
```

```
| RMATOS | 650.121.2874 | 1998-03-15 | ST CLERK | 2600.00 |
     143 | Randall
                   Matos
ULL |
          124
                     50 |
     144 | Peter
                   | Vargas
                             | PVARGAS | 650.121.2004
                                                           | 1998-07-09 | ST CLERK | 2500.00 |
                                                                                                      NU
LL |
        124 |
                   50 |
     145 | John
                   Russell
                             | JRUSSEL | 011.44.1344.429268 | 1996-10-01 | SA MAN | 14000.00 |
                                                                                                       0.
40 |
       100 |
                   80 |
     146 | Karen
                   | Partners | KPARTNER | 011.44.1344.467268 | 1997-01-05 | SA MAN
                                                                                        13500.00
 0.30
          100 |
                     80 |
                    | Errazuriz | AERRAZUR | 011.44.1344.429278 | 1997-03-10 | SA MAN
     147 | Alberto
                                                                                         12000.001
 0.30
           100 |
                      80 |
                    | Cambrault | GCAMBRAU | 011.44.1344.619268 | 1999-10-15 | SA MAN | | 11000.00 |
     148 | Gerald
    0.30
             100 |
                        80 |
                   | Zlotkey
                             | EZLOTKEY | 011.44.1344.429018 | 2000-01-29 | SA MAN
     149 | Eleni
                                                                                       10500.001
          100 |
                     80 |
0.20
     150 | Peter
                   | Tucker
                             | PTUCKER | 011.44.1344.129268 | 1997-01-30 | SA REP | 10000.00 |
                                                                                                       0.
       145 |
                   80 |
30 |
     151 | David
                   | Bernstein | DBERNSTE | 011.44.1344.345268 | 1997-03-24 | SA REP
0.25 |
         145 |
                    80 |
                            | PHALL | 011.44.1344.478968 | 1997-08-20 | SA REP | 9000.00 |
     152 | Peter
                   | Hall
                                                                                                   0.25
    145
               80 |
                             | COLSEN | 011.44.1344.498718 | 1998-03-30 | SA REP | 8000.00 |
     153 | Christopher | Olsen
                                                                                                        0
.20
        145 |
                   80 |
                   | Cambrault | NCAMBRAU | 011.44.1344.987668 | 1998-12-09 | SA_REP
     154 | Nanette
  0.20
           145
                       80 |
                   | Tuvault
     155 | Oliver
                             OTUVAULT | 011.44.1344.486508 | 1999-11-23 | SA REP
         145 |
0.15
                    80 |
     156 | Janette
                   King
                             JKING | 011.44.1345.429268 | 1996-01-30 | SA REP | 10000.00 |
                                                                                                    0.35
    146
               80 |
                             | PSULLY | 011.44.1345.929268 | 1996-03-04 | SA REP
                                                                                                     0.35
     157 | Patrick
                   Sully
     146 |
                80 |
     158 | Allan
                   | McEwen
                               | AMCEWEN | 011.44.1345.829268 | 1996-08-01 | SA REP
                                                                                         | 9000.00 |
 0.35
          146
                      80 |
     159 | Lindsey
                    Smith
                              | LSMITH | 011.44.1345.729268 | 1997-03-10 | SA REP
                                                                                      | 8000.00 |
                                                                                                      0.3
      146
                 80 |
0 |
     160 | Louise
                   Doran
                              | LDORAN | 011.44.1345.629268 | 1997-12-15 | SA REP
                                                                                       | 7500.00 |
                                                                                                       0.
       146 |
30 |
                   80 |
     161 | Sarath
                   Sewall
                              | SSEWALL | 011.44.1345.529268 | 1998-11-03 | SA REP
                                                                                                       0.
                                                                                      | 7000.00 |
25 |
       146
                   80 |
     162 | Clara
                   | Vishney
                              | CVISHNEY | 011.44.1346.129268 | 1997-11-11 | SA REP
                                                                                       | 10500.00 |
         147 |
0.25
                    80 |
     163 | Danielle | Greene
                               | DGREENE | 011.44.1346.229268 | 1999-03-19 | SA REP
                                                                                        | 9500.00 |
0.15
         147 |
                    80 |
     164 | Mattea
                              | MMARVINS | 011.44.1346.329268 | 2000-01-24 | SA_REP
                    | Marvins
                                                                                         | 7200.00 |
0.10
          147 |
                     80 |
     165 | David
                    Lee
                             | DLEE | 011.44.1346.529268 | 2000-02-23 | SA REP | 6800.00 |
                                                                                                   0.10 \, \mathrm{I}
    147 |
               80 |
     166 | Sundar
                              | SANDE | 011.44.1346.629268 | 2000-03-24 | SA REP
                                                                                    | 6400.00 |
                                                                                                      0.1
                    Ande
0 |
      147 |
                 80 |
                              | ABANDA | 011.44.1346.729268 | 2000-04-21 | SA REP
     167 | Amit
                   Banda
                                                                                      | 6200.00 |
                                                                                                       0.
10 |
        147 |
                   80 |
     168 | Lisa
                  | Ozer
                            | LOZER | 011.44.1343.929268 | 1997-03-11 | SA REP | 11500.00 |
                                                                                                    0.25
    148 |
               80 |
     169 | Harrison | Bloom
                               | HBLOOM | 011.44.1343.829268 | 1998-03-23 | SA REP
0.20
        148 |
                    80 |
```

```
TFOX | 011.44.1343.729268 | 1998-01-24 | SA REP | 9600.00 |
     170 | Tayler
                  Fox
                                                                                               0.20
    148 |
              80 |
     171 | William | Smith
                             | WSMITH | 011.44.1343.629268 | 1999-02-23 | SA REP
                                                                                   | 7400.00 |
                                                                                                  0.
15 |
      148 |
                  80 |
     172 | Elizabeth | Bates
                             | EBATES | 011.44.1343.529268 | 1999-03-24 | SA REP | | 7300.00 |
                                                                                                  0.1
5 |
      148 |
                 80 |
     173 | Sundita | Kumar
                             | SKUMAR | 011.44.1343.329268 | 2000-04-21 | SA REP
                                                                                   | 6100.00 |
.10
      148 |
                  80 |
     174 | Ellen
                  Abel
                           | EABEL | 011.44.1644.429267 | 1996-05-11 | SA REP | 11000.00 |
                                                                                                0.30
    149 |
               80 |
     175 | Alyssa
                  Hutton
                             | AHUTTON | 011.44.1644.429266 | 1997-03-19 | SA REP
                                                                                    | 8800.00 |
                                                                                                   0
       149 |
.25 |
                  80 |
     176 | Jonathon | Taylor
                             | JTAYLOR | 011.44.1644.429265 | 1998-03-24 | SA REP
                                                                                   | 8600.00 |
.20
       149 |
                  80 |
     177 | Jack
                  | Livingston | JLIVINGS | 011.44.1644.429264 | 1998-04-23 | SA REP | 8400.00 |
                                                                                                  0.
      149 |
20 |
                  80 |
                            | KGRANT | 011.44.1644.429263 | 1999-05-24 | SA REP
     178 | Kimberely | Grant
0.15 |
         149 |
                  NULL |
     179 | Charles | Johnson
                            | CJOHNSON | 011.44.1644.429262 | 2000-01-04 | SA REP
                                                                                   | 6200.00 |
        149 |
0.10
                   80 |
     180 | Winston | Taylor
                             | WTAYLOR | 650.507.9876 | 1998-01-24 | SH CLERK | 3200.00 |
NULL |
          120
                     50 |
                                                                                                NUL
     181 | Jean
                 | Fleaur
                          | JFLEAUR | 650.507.9877 | 1998-02-23 | SH CLERK | 3100.00 |
                 50 |
L \perp
      120 |
     182 | Martha
                 | Sullivan | MSULLIVA | 650.507.9878
                                                          | 1999-06-21 | SH CLERK | 2500.00 |
NULL |
           120 |
                     50 |
     183 | Girard
                            | GGEONI | 650.507.9879 | 2000-02-03 | SH CLERK | 2800.00 |
                   Geoni
                                                                                                 NU
LL |
       120
                  50 |
     184 | Nandita
                  | Sarchand | NSARCHAN | 650.509.1876 | 1996-01-27 | SH CLERK | 4200.00 |
NULL |
          121
                      50 |
     185 | Alexis
                  Bull
                           | ABULL | 650.509.2876 | 1997-02-20 | SH CLERK | 4100.00 |
                                                                                               NUL
      121 |
                 50 |
     186 | Julia
                 | Dellinger | JDELLING | 650.509.3876 | 1998-06-24 | SH CLERK | 3400.00 |
                                                                                                 NU
        121 |
                  50 |
LL |
     187 | Anthony | Cabrio
                            | ACABRIO | 650.509.4876 | 1999-02-07 | SH CLERK | 3000.00 |
                                                                                                 N
         121 |
ULL |
                    50 |
     188 | Kelly
                  Chung
                             | KCHUNG | 650.505.1876
                                                        | 1997-06-14 | SH CLERK | 3800.00 |
                                                                                                  N
ULL |
         122 |
                    50 |
                            | JDILLY | 650.505.2876 | 1997-08-13 | SH CLERK | 3600.00 |
                                                                                               NUL
     189 | Jennifer | Dilly
     122 |
                 50 |
     190 | Timothy | Gates
                             | TGATES | 650.505.3876 | 1998-07-11 | SH CLERK | 2900.00 |
                                                                                                 N
ULL |
         122 |
                    50 |
     191 | Randall
                  | Perkins
                            | RPERKINS | 650.505.4876
                                                        | 1999-12-19 | SH CLERK | 2500.00 |
                                                                                                  N
         122 |
ULL |
                    50 |
     192 | Sarah
                  | Bell
                         | SBELL | 650.501.1876 | 1996-02-04 | SH CLERK | 4000.00 | NULL
    123 |
               50 |
     193 | Britney | Everett | BEVERETT | 650.501.2876 | 1997-03-03 | SH CLERK | 3900.00 |
                                                                                                  N
ULL |
         123 |
                    50 |
     194 | Samuel
                   | McCain
                              | SMCCAIN | 650.501.3876 | 1998-07-01 | SH CLERK | 3200.00 |
NULL |
          123 |
                     50 |
     195 | Vance
                   Jones
                            | VJONES | 650.501.4876 | 1999-03-17 | SH CLERK | 2800.00 |
                                                                                                NU
LL | 123 |
                  50 |
     196 | Alana
                  Walsh
                             | AWALSH | 650.507.9811 | 1998-04-24 | SH CLERK | 3100.00 |
                                                                                                  N
ULL |
        124 |
                    50 |
```

```
197 | Kevin
                        | KFEENEY | 650.507.9822 | 1998-05-23 | SH CLERK | 3000.00 |
                 Feeney
                                                                                       N
ULL |
       124 |
                  50 |
                 | OConnell | DOCONNEL | 650.507.9833
                                                      | 1999-06-21 | SH CLERK | 2600.00 |
    198 | Donald
 NULL | 124 |
                    50 |
    199 | Douglas
                 Grant
                          | DGRANT | 650.507.9844
                                                   | 2000-01-13 | SH CLERK | 2600.00 |
                                                                                       N
       124 |
                  50 |
ULL |
    200 | Jennifer | Whalen
                         | JWHALEN | 515.123.4444
                                                  | 1987-09-17 | AD ASST | 4400.00 |
                                                                                       N
ULL | 101 |
                  10 |
    201 | Michael
                | Hartstein | MHARTSTE | 515.123.5555
                                                     | 1996-02-17 | MK MAN | 13000.00 |
NULL | 100 |
                   20 |
                       | PFAY | 603.123.6666
                                             | 1997-08-17 | MK REP | 6000.00 |
    202 | Pat
               | Fay
                                                                                 NULL |
  201 |
           20 |
                        | SMAVRIS | 515.123.7777
                                                  | 1994-06-07 | HR REP | 6500.00 |
                                                                                     NUL
    203 | Susan
               Mavris
L \mid
    101 |
               40 |
    204 | Hermann | Baer
                          | HBAER | 515.123.8888
                                                  | 1994-06-07 | PR REP | 10000.00 |
                                                                                     NUL
     101 |
               70 |
L \mid
    205 | Shelley | Higgins
                         | SHIGGINS | 515.123.8080
                                                   | 1994-06-07 | AC MGR | 12000.00 |
                                                                                       N
        101 |
ULL |
                 110
    206 | William
                Gietz
                         | WGIETZ | 515.123.8181 | 1994-06-07 | AC ACCOUNT | 8300.00 |
NULL | 205 |
                 110 |
----+
107 rows in set (0.00 sec)
mysql> select employee id, job id, manager id from employees group by job id;
+----+
employee id job id manager id
+----+
    206 | AC ACCOUNT |
                          205
    205 | AC MGR
                       101 |
    200 | AD ASST
                       101 |
    100 | AD_PRES |
                      NULL |
    101 | AD VP
                100 |
    109 | FI ACCOUNT |
                      108 |
    108 | FI MGR
                      101 |
    203 | HR REP
                       101 |
    103 | IT PROG |
                       102 |
    201 | MK MAN |
                       100
    202 | MK REP
                       201
    204 | PR REP
                      101
    115 | PU CLERK |
                       114 |
    114 | PU MAN
                       100
    145 | SA MAN
                       100
    150 | SA REP |
                      145 |
    180 | SH CLERK |
                        120
    125 | ST CLERK |
                        120 |
    120 | ST MAN |
                       100 |
   ----+
19 rows in set (0.00 sec)
mysql> select * from employees;
| employee id | first name | last name | email | phone number | hire date | job id | salary | commission
```

```
pct | manager id | department id |
+----+---+
    100 | Steven | King
                          | SKING | 515.123.4567 | 1987-06-17 | AD PRES | 24000.00 |
                                                                                       NULL
    NULL |
                90 |
    101 | Neena
               | Kochhar | NKOCHHAR | 515.123.4568 | 1989-09-21 | AD VP
                                                                            | 17000.00 |
NULL | 100 |
                   90 |
     102 | Lex
                | De Haan | LDEHAAN | 515.123.4569 | 1993-01-13 | AD VP | 17000.00 |
                                                                                         NU
LL | 100 |
                 90 |
     103 | Alexander | Hunold | AHUNOLD | 590.423.4567 | 1990-01-03 | IT PROG | 9000.00 |
NULL | 102 |
                  60 |
                         | BERNST | 590.423.4568 | 1991-05-21 | IT PROG | 6000.00 |
                                                                                      NULL
     104 | Bruce
                 Ernst
     103 |
              60
                         | DAUSTIN | 590.423.4569 | 1997-06-25 | IT PROG | 4800.00 |
                                                                                        NUL
     105 | David
                Austin
    103 |
               60 |
L \mid
    106 | Valli
                | Pataballa | VPATABAL | 590.423.4560 | 1998-02-05 | IT | PROG | | 4800.00 |
                                                                                        NU
LL | 103 |
                 60
     107 | Diana
                | Lorentz | DLORENTZ | 590.423.5567 | 1999-02-07 | IT PROG | 4200.00 |
                                                                                         N
ULL | 103 |
                 60 |
                 | Greenberg | NGREENBE | 515.124.4569 | 1994-08-17 | FI MGR | 12000.00 |
    108 | Nancy
NULL | 101 |
                 100 |
                         | DFAVIET | 515.124.4169 | 1994-08-16 | FI ACCOUNT | 9000.00 |
    109 | Daniel
                 | Faviet
                                                                                         N
ULL | 108 |
                 100 |
    110 | John
                         | JCHEN | 515.124.4269 | 1997-09-28 | FI ACCOUNT | 8200.00 |
                Chen
                                                                                        NU
LL | 108 |
                100 |
    111 | Ismael
               | Sciarra | ISCIARRA | 515.124.4369 | 1997-09-30 | FI ACCOUNT | 7700.00 |
                                                                                         N
                 100
ULL | 108 |
     112 | Jose Manuel | Urman | JMURMAN | 515.124.4469 | 1998-03-07 | FI ACCOUNT | 7800.00 |
  NULL | 108 | 100 |
                         | LPOPP | | 515.124.4567 | | 1999-12-07 | FI ACCOUNT | 6900.00 |
    113 | Luis
                                                                                        NUL
               Popp
    108 |
               100 |
              | Raphaely | DRAPHEAL | 515.127.4561 | 1994-12-07 | PU MAN | 11000.00 |
    114 | Den
NULL | 100 | 30 |
                          | AKHOO | 515.127.4562 | 1995-05-18 | PU CLERK | 3100.00 |
     115 | Alexander | Khoo
                                                                                         N
ULL | 114 |
                  30 |
                         | SBAIDA | 515.127.4563 | 1997-12-24 | PU CLERK | 2900.00 |
    116 | Shelli
                                                                                       NUL
               | Baida
L \mid
    114 |
               30 |
    117 | Sigal | Tobias | STOBIAS | 515.127.4564 | 1997-07-24 | PU CLERK | 2800.00 |
                                                                                        NU
LL | 114 |
                 30 |
                          | GHIMURO | 515.127.4565 | 1998-11-15 | PU_CLERK | 2600.00 |
     118 | Guy
                | Himuro
                                                                                       N
ULL | 114 |
                 30 |
    119 | Karen
                 | Colmenares | KCOLMENA | 515.127.4566 | 1999-08-10 | PU CLERK | 2500.00 |
 NULL | 114 |
                     30 |
                           | MWEISS | 650.123.1234 | 1996-07-18 | ST MAN | 8000.00 |
    120 | Matthew | Weiss
                                                                                         NU
LL | 100 |
                 50 |
                          | AFRIPP | 650.123.2234 | 1997-04-10 | ST MAN | 8200.00 |
                                                                                      NULL
     121 | Adam
                 | Fripp
     100 | 50 |
     122 | Payam | Kaufling | PKAUFLIN | 650.123.3234 | 1995-05-01 | ST MAN | 7900.00 |
                                                                                          N
       100 |
ULL |
                 50 |
    123 | Shanta
                 | Vollman | SVOLLMAN | 650.123.4234 | 1997-10-10 | ST MAN | 6500.00 |
NULL | 100 |
                   50 |
    124 | Kevin
                 | Mourgos | KMOURGOS | 650.123.5234 | 1999-11-16 | ST MAN | 5800.00 |
NULL | 100 |
                    50 |
   125 | Julia
                | Nayer | JNAYER | 650.124.1214 | 1997-07-16 | ST CLERK | 3200.00 |
                                                                                       NUL
```

```
L \mid
      120 |
                 50 L
     126 | Irene
                  | Mikkilineni | IMIKKILI | 650.124.1224 | 1998-09-28 | ST CLERK | 2700.00 |
                                                                                                   NU
LL |
        120
                   50 |
     127 | James
                   Landry
                              | JLANDRY | 650.124.1334
                                                          | 1999-01-14 | ST CLERK | 2400.00 |
                                                                                                    N
ULL |
         120 |
                    50 |
     128 | Steven
                   | Markle
                              | SMARKLE | 650.124.1434
                                                           | 2000-03-08 | ST CLERK | 2200.00 |
                                                                                                    N
ULL |
         120 |
                    50 |
     129 | Laura
                   Bissot
                             | LBISSOT | 650.124.5234
                                                       | 1997-08-20 | ST CLERK | 3300.00 |
                                                                                                  NUL
L \mid
      121 |
                 50 L
                    | Atkinson | MATKINSO | 650.124.6234
                                                            | 1997-10-30 | ST CLERK | 2800.00 |
     130 | Mozhe
                      50 |
           121 |
NULL |
                              | JAMRLOW | 650.124.7234
                                                            | 1997-02-16 | ST CLERK | 2500.00 |
     131 | James
                   | Marlow
           121 |
                      50 |
NULL |
                           | TJOLSON | 650.124.8234 | 1999-04-10 | ST CLERK | 2100.00 |
     132 | TJ
                  Olson
                                                                                                 NUL
L \mid
      121 |
                 50 |
                             | JMALLIN | 650.127.1934 | 1996-06-14 | ST CLERK | 3300.00 |
                                                                                                  NU
     133 | Jason
                   | Mallin
        122 |
LL |
                   50 |
     134 | Michael
                  Rogers
                              | MROGERS | 650.127.1834 | 1998-08-26 | ST CLERK | 2900.00 |
                      50 |
NULL |
          122 |
                           | KGEE | 650.127.1734
                                                   | 1999-12-12 | ST CLERK | 2400.00 |
                                                                                               NULL |
     135 | Ki
                 Gee
              50 |
    122 |
                                                          | 2000-02-06 | ST CLERK | 2200.00 |
                   | Philtanker | HPHILTAN | 650.127.1634
     136 | Hazel
ULL |
         122 |
                    50 |
                               | RLADWIG | 650.121.1234 | 1995-07-14 | ST CLERK | 3600.00 |
     137 | Renske
                   Ladwig
NULL |
           123 |
                      50 |
                             | SSTILES | 650.121.2034
     138 | Stephen
                  Stiles
                                                        | 1997-10-26 | ST CLERK | 3200.00 |
                                                                                                 NUL
                 50 |
L \mid
      123 |
     139 | John
                            | JSEO | 650.121.2019 | 1998-02-12 | ST CLERK | 2700.00 |
                                                                                              NULL |
                  Seo
   123 |
              50 |
     140 | Joshua
                            | JPATEL | 650.121.1834
                                                      | 1998-04-06 | ST CLERK | 2500.00 |
                                                                                                 NUL
                   Patel
      123 |
L \mid
                 50 |
                             | TRAJS | 650.121.8009 | 1995-10-17 | ST CLERK | 3500.00 |
     141 | Trenna
                   Rais
                                                                                                NULL
     124 |
                50 |
     142 | Curtis
                   Davies
                             | CDAVIES | 650.121.2994 | 1997-01-29 | ST CLERK | 3100.00 |
                                                                                                   NU
LL |
        124 |
                   50 |
                              | RMATOS | 650.121.2874 | 1998-03-15 | ST CLERK | 2600.00 |
                                                                                                    N
     143 | Randall
                  Matos
ULL |
         124 |
                    50 |
     144 | Peter
                             | PVARGAS | 650.121.2004 | 1998-07-09 | ST CLERK | 2500.00 |
                                                                                                   NU
                  | Vargas
LL |
        124 |
                   50 |
                             | JRUSSEL | 011.44.1344.429268 | 1996-10-01 | SA MAN | 14000.00 |
     145 | John
                  Russell
40 |
       100 |
                  80 |
     146 | Karen
                   | Partners | KPARTNER | 011.44.1344.467268 | 1997-01-05 | SA MAN | 13500.00 |
          100 |
                     80 |
 0.30 \, \perp
                   | Errazuriz | AERRAZUR | 011.44.1344.429278 | 1997-03-10 | SA MAN
     147 | Alberto
 0.30
          100 |
                     80 |
                   | Cambrault | GCAMBRAU | 011.44.1344.619268 | 1999-10-15 | SA MAN
     148 | Gerald
   0.30
            100 |
                        80 |
     149 | Eleni
                  | Zlotkey
                             | EZLOTKEY | 011.44.1344.429018 | 2000-01-29 | SA MAN
0.20 |
         100 |
                    80 |
     150 | Peter
                  | Tucker
                             | PTUCKER | 011.44.1344.129268 | 1997-01-30 | SA REP | 10000.00 |
                                                                                                    0.
30 |
      145 |
                  80 |
     151 | David
                   | Bernstein | DBERNSTE | 011.44.1344.345268 | 1997-03-24 | SA REP
0.25
         145 |
                    80 |
                           | PHALL | 011.44.1344.478968 | 1997-08-20 | SA REP | 9000.00 |
     152 | Peter
                  | Hall
                                                                                                 0.25
```

```
145 |
               80 |
     153 | Christopher | Olsen
                              | COLSEN | 011.44.1344.498718 | 1998-03-30 | SA REP | 8000.00 |
.20
        145 |
                   80 |
     154 | Nanette
                   | Cambrault | NCAMBRAU | 011.44.1344.987668 | 1998-12-09 | SA_REP
  0.20
           145 |
                       80 |
                              | OTUVAULT | 011.44.1344.486508 | 1999-11-23 | SA REP
     155 | Oliver
                    | Tuvault
                                                                                         | 7000.00 |
0.15
         145 |
                    80 |
     156 | Janette
                    King
                              | JKING | 011.44.1345.429268 | 1996-01-30 | SA REP
                                                                                   | 10000.00 |
                                                                                                     0.35 |
    146
               80 |
     157 | Patrick
                   Sully
                             | PSULLY | 011.44.1345.929268 | 1996-03-04 | SA REP
                                                                                     | 9500.00 |
                                                                                                     0.35
                80 |
     146
                                | AMCEWEN | 011.44.1345.829268 | 1996-08-01 | SA REP
     158 | Allan
                   | McEwen
                                                                                          | 9000.00 |
          146
 0.35
                      80 |
     159 | Lindsey
                    Smith
                               | LSMITH | 011.44.1345.729268 | 1997-03-10 | SA REP
                                                                                      | 8000.00 |
                                                                                                       0.3
      146
                  80 |
0 |
     160 | Louise
                              | LDORAN | 011.44.1345.629268 | 1997-12-15 | SA REP
                                                                                       | 7500.00 |
                                                                                                        0.
                    Doran
       146 |
30 |
                   80 |
     161 | Sarath
                   Sewall
                              | SSEWALL | 011.44.1345.529268 | 1998-11-03 | SA REP
                                                                                       | 7000.00 |
                                                                                                        0.
25 |
       146 |
                   80 |
                               | CVISHNEY | 011.44.1346.129268 | 1997-11-11 | SA REP
     162 | Clara
                   Vishney
                                                                                        | 10500.00 |
         147 |
0.25
                    80 |
     163 | Danielle
                   Greene
                               | DGREENE | 011.44.1346.229268 | 1999-03-19 | SA REP
                                                                                        | 9500.00 |
0.15
         147 |
                    80 |
                               | MMARVINS | 011.44.1346.329268 | 2000-01-24 | SA REP
     164 | Mattea
                    | Marvins
0.10
         147 |
                     80 |
                             | DLEE | 011.44.1346.529268 | 2000-02-23 | SA REP | 6800.00 |
                                                                                                    0.10
     165 | David
                    Lee
    147 |
               80 |
     166 | Sundar
                              | SANDE | 011.44.1346.629268 | 2000-03-24 | SA REP
                                                                                                      0.1
                    Ande
                                                                                      | 6400.00 |
0 |
      147 |
                  80 |
     167 | Amit
                              | ABANDA | 011.44.1346.729268 | 2000-04-21 | SA REP
                                                                                       | 6200.00 |
                                                                                                       0.
                   Banda
       147 |
10 |
                   80 |
     168 | Lisa
                   Ozer
                             LOZER | 011.44.1343.929268 | 1997-03-11 | SA REP
                                                                                   | 11500.00 |
                                                                                                     0.25 \mid
    148 |
               80 |
     169 | Harrison | Bloom
                                | HBLOOM | 011.44.1343.829268 | 1998-03-23 | SA REP
0.20
         148 |
                    80 |
                             TFOX | 011.44.1343.729268 | 1998-01-24 | SA REP | 9600.00 |
                                                                                                    0.20
     170 | Tayler
                    | Fox
    148 |
               80 |
     171 | William | Smith
                               | WSMITH | 011.44.1343.629268 | 1999-02-23 | SA REP
                                                                                        | 7400.00 |
                                                                                                        0.
15 |
       148 |
                   80 |
                                                                                                       0.1
     172 | Elizabeth | Bates
                               | EBATES | 011.44.1343.529268 | 1999-03-24 | SA REP
                                                                                      | 7300.00 |
5 |
      148 |
                  80 |
     173 | Sundita | Kumar
                               | SKUMAR | 011.44.1343.329268 | 2000-04-21 | SA REP
                                                                                        | 6100.00 |
.10
        148 |
                   80 |
                             | EABEL | 011.44.1644.429267 | 1996-05-11 | SA REP
     174 | Ellen
                   Abel
                                                                                    | 11000.00 |
                                                                                                     0.30
     149 |
                80 |
                               | AHUTTON | 011.44.1644.429266 | 1997-03-19 | SA REP
                                                                                                         0
     175 | Alyssa
                    Hutton
                                                                                        | 8800.00 |
.25 |
        149 |
                   80 |
     176 | Jonathon | Taylor
                               | JTAYLOR | 011.44.1644.429265 | 1998-03-24 | SA REP
                                                                                        | 8600.00 |
                                                                                                        0
.20
        149 |
                   80 |
     177 | Jack
                   | Livingston | JLIVINGS | 011.44.1644.429264 | 1998-04-23 | SA REP
                                                                                       | 8400.00 |
                                                                                                       0.
20 |
       149 |
                   80 |
     178 | Kimberely | Grant
                                KGRANT | 011.44.1644.429263 | 1999-05-24 | SA REP
                                                                                         | 7000.00 |
         149 |
                   NULL |
0.15 |
     179 | Charles | Johnson
                              | CJOHNSON | 011.44.1644.429262 | 2000-01-04 | SA REP | 6200.00 |
```

```
0.10 | 149 |
                   80 |
     180 | Winston | Taylor
                            | WTAYLOR | 650.507.9876 | 1998-01-24 | SH CLERK | 3200.00 |
NULL | 120 |
                     50 |
     181 | Jean
                 | Fleaur
                          | JFLEAUR | 650.507.9877 | 1998-02-23 | SH CLERK | 3100.00 |
                                                                                            NUL
L \mid
     120
                50 |
     182 | Martha | Sullivan | MSULLIVA | 650.507.9878 | 1999-06-21 | SH CLERK | 2500.00 |
NULL |
          120 |
                     50 |
     183 | Girard
                  Geoni
                           | GGEONI | 650.507.9879 | 2000-02-03 | SH CLERK | 2800.00 |
                                                                                             NU
       120 |
LL |
                  50 |
     184 | Nandita
                 | Sarchand | NSARCHAN | 650.509.1876 | 1996-01-27 | SH CLERK | 4200.00 |
NULL |
           121 |
                     50 |
     185 | Alexis
                          | ABULL | 650.509.2876 | 1997-02-20 | SH CLERK | 4100.00 |
                                                                                            NUL
                  Bull
     121 |
                50 |
                | Dellinger | JDELLING | 650.509.3876 | 1998-06-24 | SH CLERK | 3400.00 |
     186 | Julia
                                                                                             NU
LL |
       121 |
                  50 |
     187 | Anthony | Cabrio
                           | ACABRIO | 650.509.4876 | 1999-02-07 | SH CLERK | 3000.00 |
                                                                                              N
        121 |
ULL |
                   50 |
     188 | Kelly
                  Chung
                           | KCHUNG | 650.505.1876 | 1997-06-14 | SH CLERK | 3800.00 |
                                                                                              N
ULL |
       122 |
                   50 |
                           | JDILLY | 650.505.2876 | 1997-08-13 | SH CLERK | 3600.00 |
                                                                                            NUL
     189 | Jennifer | Dilly
     122 |
                50 |
L
                            | TGATES | 650.505.3876 | 1998-07-11 | SH CLERK | 2900.00 |
     190 | Timothy | Gates
                                                                                              N
ULL |
       122 |
                   50 |
                 | Perkins
                            | RPERKINS | 650.505.4876 | 1999-12-19 | SH CLERK | 2500.00 |
     191 | Randall
                                                                                              N
ULL |
       122 |
                   50 |
                          | SBELL | 650.501.1876 | 1996-02-04 | SH CLERK | 4000.00 |
     192 | Sarah
                  Bell
                                                                                           NULL
    123 |
              50 |
     193 | Britney | Everett
                           | BEVERETT | 650.501.2876
                                                      | 1997-03-03 | SH CLERK | 3900.00 |
                                                                                              N
ULL |
         123 |
                   50 |
                             | SMCCAIN | 650.501.3876 | 1998-07-01 | SH CLERK | 3200.00 |
     194 | Samuel
                   | McCain
         123 |
                    50 |
NULL |
                           | VJONES | 650.501.4876 | 1999-03-17 | SH CLERK | 2800.00 |
     195 | Vance
                  Jones
                                                                                             NU
LL | 123 |
                  50 |
     196 | Alana
                  | Walsh
                            | AWALSH | 650.507.9811 | 1998-04-24 | SH CLERK | 3100.00 |
                                                                                              N
ULL |
       124 |
                   50 |
     197 | Kevin
                            | KFEENEY | 650.507.9822 | 1998-05-23 | SH CLERK | 3000.00 |
                                                                                              N
                  Feeney
ULL |
       124 |
                   50 |
    198 | Donald
                  | OConnell | DOCONNEL | 650.507.9833 | 1999-06-21 | SH CLERK | 2600.00 |
 NULL | 124 |
                      50 |
     199 | Douglas
                   Grant
                            | DGRANT | 650.507.9844 | 2000-01-13 | SH CLERK | 2600.00 |
                                                                                              N
        124 |
ULL |
                   50 |
     200 | Jennifer | Whalen
                            | JWHALEN | 515.123.4444 | 1987-09-17 | AD ASST | 4400.00 |
                                                                                               N
         101 |
                   10 |
ULL |
     201 | Michael
                  | Hartstein | MHARTSTE | 515.123.5555 | 1996-02-17 | MK MAN | | 13000.00 |
NULL |
          100 |
                     20 |
                | Fay | PFAY | 603.123.6666 | 1997-08-17 | MK REP
                                                                        | 6000.00 |
     202 | Pat
                                                                                        NULL |
  201 |
            20 |
     203 | Susan
                 Mavris
                            | SMAVRIS | 515.123.7777 | 1994-06-07 | HR REP
                                                                            | 6500.00 |
                                                                                            NUL
L \mid
     101 |
                40 |
     204 | Hermann | Baer
                            | HBAER | 515.123.8888
                                                      | 1994-06-07 | PR REP | 10000.00 |
                                                                                            NUL
     101 |
                70 |
     205 | Shelley | Higgins | SHIGGINS | 515.123.8080 | 1994-06-07 | AC MGR | 12000.00 |
                                                                                              N
ULL | 101 |
                   110 |
     206 | William | Gietz
                           | WGIETZ | 515.123.8181 | 1994-06-07 | AC ACCOUNT | 8300.00 |
```

```
NULL |
          205 |
                     110 |
107 rows in set (0.00 sec)
mysql> select E.first name, E.last name, J.job id, J.job title
  -> from employees
  ->:
ERROR 1054 (42S22): Unknown column 'E.first name' in 'field list'
mysql> select E.first name, E.last name, J.job id, J.job title
  -> from employees E
  -> join jobs J
  \rightarrow on E.job id = J.job id;
| first name | last name | job id | job title
+----+
                   | AC ACCOUNT | Public Accountant
William
Shelley
          | Higgins | AC MGR | Accounting Manager
                  | AD ASST | Administration Assistant
Jennifer
        | Whalen
                   | AD PRES | President
Steven
          King
          | Kochhar | AD VP
Neena
                               | Administration Vice President |
 Lex
         | De Haan | AD VP
                               | Administration Vice President |
 Daniel
         | Faviet
                   | FI ACCOUNT | Accountant
                   | FI ACCOUNT | Accountant
John
         Chen
 Ismael
         Sciarra
                  | FI ACCOUNT | Accountant
Jose Manuel | Urman | FI ACCOUNT | Accountant
                  | FI ACCOUNT | Accountant
Luis
         Popp
          | Greenberg | FI MGR | Finance Manager
Nancy
         | Mavris
                   | HR REP | Human Resources Representative |
 Susan
 Alexander | Hunold | IT PROG | Programmer
         | Ernst
                   | IT PROG | Programmer
 Bruce
                   | IT PROG | Programmer
 David
          Austin
 Valli
        | Pataballa | IT PROG | Programmer
                   | IT PROG | Programmer
 Diana
         Lorentz
 Michael | Hartstein | MK MAN | Marketing Manager
                            | Marketing Representative
        | Fay
                 MK REP
 Pat
                    | PR REP | Public Relations Representative |
           Baer
 Hermann
 Alexander | Khoo
                    | PU CLERK | Purchasing Clerk
                  | PU CLERK | Purchasing Clerk
 Shelli
         Baida
                   | PU CLERK | Purchasing Clerk
 Sigal
         | Tobias
                  | PU CLERK | Purchasing Clerk
 Guy
         | Himuro
 Karen
         | Colmenares | PU CLERK | Purchasing Clerk
         | Raphaely | PU MAN | Purchasing Manager
 Den
         | Russell | SA MAN
                               | Sales Manager
John
          | Partners | SA MAN
 Karen
                                | Sales Manager
         | Errazuriz | SA MAN
                                | Sales Manager
 Alberto
         | Cambrault | SA MAN
 Gerald
                                | Sales Manager
 Eleni
         Zlotkey
                  SA MAN
                                | Sales Manager
                              | Sales Representative
 Peter
         | Tucker
                   | SA REP
         | Bernstein | SA REP
David
                               | Sales Representative
```

| SA REP | Sales Representative

| Sales Representative

| Sales Representative

| Sales Representative

Peter

Oliver

| Hall

Christopher | Olsen | SA REP

Nanette | Cambrault | SA REP

| Tuvault | SA REP

Janette King SA_REP Sales Representative Patrick Sully SA_REP Sales Representative	İ
Allan McEwen SA_REP Sales Representative	
Lindsey Smith SA_REP Sales Representative	
Louise Doran SA_REP Sales Representative	
Sarath Sewall SA_REP Sales Representative	
Clara Vishney SA_REP Sales Representative	
Danielle Greene SA_REP Sales Representative	
Mattea Marvins SA_REP Sales Representative	
David Lee SA_REP Sales Representative	
Sundar Ande SA_REP Sales Representative	
Amit Banda SA_REP Sales Representative	
Lisa Ozer SA_REP Sales Representative	
Harrison Bloom SA_REP Sales Representative	
Tayler Fox SA_REP Sales Representative	
William Smith SA_REP Sales Representative	
Elizabeth Bates SA_REP Sales Representative	
Sundita Kumar SA_REP Sales Representative	
Ellen Abel SA_REP Sales Representative	
Alyssa Hutton SA_REP Sales Representative	
Jonathon Taylor SA_REP Sales Representative	
Jack Livingston SA_REP Sales Representative	
Kimberely Grant SA_REP Sales Representative	
Charles Johnson SA_REP Sales Representative	
Winston Taylor SH_CLERK Shipping Clerk	
Jean Fleaur SH_CLERK Shipping Clerk	
Martha Sullivan SH_CLERK Shipping Clerk	
Girard Geoni SH_CLERK Shipping Clerk	
Nandita Sarchand SH_CLERK Shipping Clerk	
Alexis Bull SH_CLERK Shipping Clerk	
Julia Dellinger SH_CLERK Shipping Clerk	
Anthony Cabrio SH_CLERK Shipping Clerk	
Kelly Chung SH_CLERK Shipping Clerk	
Jennifer Dilly SH_CLERK Shipping Clerk	
Timothy Gates SH_CLERK Shipping Clerk	
Randall Perkins SH_CLERK Shipping Clerk	
Sarah Bell SH_CLERK Shipping Clerk	
Britney Everett SH_CLERK Shipping Clerk	
Samuel McCain SH_CLERK Shipping Clerk	
Vance Jones SH_CLERK Shipping Clerk	
Alana Walsh SH_CLERK Shipping Clerk	
Kevin Feeney SH_CLERK Shipping Clerk	
Donald OConnell SH_CLERK Shipping Clerk	
Douglas Grant SH_CLERK Shipping Clerk	
Julia Nayer ST_CLERK Stock Clerk	
Irene Mikkilineni ST_CLERK Stock Clerk	
James Landry ST_CLERK Stock Clerk	
Steven Markle ST_CLERK Stock Clerk	
Laura Bissot ST_CLERK Stock Clerk	
Mozhe Atkinson ST_CLERK Stock Clerk	
James Marlow ST_CLERK Stock Clerk	
TJ Olson ST_CLERK Stock Clerk	
Jason Mallin ST_CLERK Stock Clerk	
Michael Rogers ST CLERK Stock Clerk	

```
| Ki
        Gee
                 ST CLERK | Stock Clerk
Hazel
         | Philtanker | ST CLERK | Stock Clerk
          | Ladwig | ST CLERK | Stock Clerk
 Renske
Stephen
         | Stiles | ST CLERK | Stock Clerk
John
         Seo
                 ST CLERK | Stock Clerk
Joshua
        | Patel
                ST CLERK | Stock Clerk
                  | ST CLERK | Stock Clerk
Trenna
         Rais
 Curtis
         Davies
                 ST CLERK | Stock Clerk
                  ST CLERK | Stock Clerk
Randall | Matos
        | Vargas | ST CLERK | Stock Clerk
Peter
Matthew | Weiss | ST MAN | Stock Manager
                   ST MAN | Stock Manager
Adam
         | Fripp
         | Kaufling | ST MAN | Stock Manager
Payam
         | Vollman | ST MAN | Stock Manager
Shanta
         | Mourgos | ST MAN | Stock Manager
Kevin
107 rows in set (0.00 sec)
mysql> select employee id, count(*), job id, job title
  -> from employees E
  -> join jobs J
  -> on E.job id = J.job_id;
ERROR 1052 (23000): Column 'job id' in field list is ambiguous
mysql> select E.first name, E.last name, J.job id, J.job title
      -> from employees E
      -> join jobs J
  ->
  -> join jobs J^X^X^X select E.first name, E.last name, J.job id, J.job title
      -> from employees E
  -> -> join jobs J
  -> exit;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL s
erver version for the right syntax to use near 'from employees E
  -> join jobs J
  mysql> select E.employee id, counts(*), E.job id, J.job title
  -> from employees E
  -> join jobs J
  \rightarrow on E.job id = J.job id;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL s
erver version for the right syntax to use near '*), E.job id, J.job title
from employees E
join jobs J
on E.job id = J.job id' at line 1
mysql> select employee id, count(*) from employees;
+----+
| employee id | count(*) |
+----+
     100 | 107 |
+----+
1 row in set (0.00 \text{ sec})
mysql> select J.job id, J.job title, E.employee id, count(*) from jobs J join employees E on J.job id = E.job id;
+----+
| job id | job title | employee id | count(*) |
```

```
+-----+
1 row in set (0.00 \text{ sec})
mysql> select * from employees;
| employee_id | first_name | last_name | email | phone_number | hire_date | job_id | salary | commission_
pct | manager id | department id |
100 | Steven
                          | SKING | 515.123.4567 | 1987-06-17 | AD PRES | 24000.00 |
                King
                                                                                      NULL
    NULL |
                90 |
    101 | Neena
               Kochhar
                          | NKOCHHAR | 515.123.4568
                                                       | 1989-09-21 | AD VP
                                                                            | 17000.00 |
NULL | 100 |
                   90 |
    102 | Lex
                | De Haan | LDEHAAN | 515.123.4569 | 1993-01-13 | AD VP
                                                                        | 17000.00 |
                                                                                        NU
LL |
       100 |
                90 |
    103 | Alexander | Hunold | AHUNOLD | 590.423.4567 | 1990-01-03 | IT PROG | 9000.00 |
NULL | 102 |
                   60 |
                 Ernst
     104 | Bruce
                         | BERNST | 590.423.4568
                                                  | 1991-05-21 | IT PROG | 6000.00 |
                                                                                      NULL
     103 |
              60
                 Austin
    105 | David
                         | DAUSTIN | 590.423.4569
                                                   | 1997-06-25 | IT PROG | 4800.00 |
                                                                                       NUL
     103 |
               60 |
L \mid
    106 | Valli
                | Pataballa | VPATABAL | 590.423.4560
                                                   | 1998-02-05 | IT PROG | 4800.00 |
                                                                                        NU
LL | 103 |
                 60 L
                                                   | 1999-02-07 | IT PROG | 4200.00 |
     107 | Diana
                 Lorentz
                         | DLORENTZ | 590.423.5567
                                                                                         N
ULL | 103 |
                  60
                 | Greenberg | NGREENBE | 515.124.4569 | 1994-08-17 | FI MGR | 12000.00 |
    108 | Nancy
NULL | 101 |
                 100 |
    109 | Daniel
                 | Faviet
                          | DFAVIET | 515.124.4169
                                                  | 1994-08-16 | FI ACCOUNT | 9000.00 |
                                                                                         N
ULL |
        108 |
                 100
    110 | John
                         | JCHEN | 515.124.4269 | 1997-09-28 | FI ACCOUNT | 8200.00 |
                                                                                        NU
                | Chen
LL | 108 |
                100
    111 | Ismael
               | Sciarra | ISCIARRA | 515.124.4369 | 1997-09-30 | FI ACCOUNT | 7700.00 |
                                                                                          N
ULL | 108 |
                 100
     112 | Jose Manuel | Urman
                             | JMURMAN | 515.124.4469
                                                       | 1998-03-07 | FI ACCOUNT | 7800.00 |
  NULL | 108 | 100 |
    113 | Luis
                         | LPOPP | 515.124.4567 | 1999-12-07 | FI ACCOUNT | 6900.00 |
                                                                                       NUL
               Popp
               100 |
    108
               | Raphaely | DRAPHEAL | 515.127.4561
    114 | Den
                                                   | 1994-12-07 | PU MAN
                                                                          | 11000.00 |
         100 |
NULL |
                   30 |
     115 | Alexander | Khoo
                           | AKHOO | 515.127.4562
                                                    | 1995-05-18 | PU CLERK | 3100.00 |
                                                                                         N
ULL | 114 |
                  30 |
    116 | Shelli
               | Baida
                         | SBAIDA | 515.127.4563 | 1997-12-24 | PU CLERK | 2900.00 |
                                                                                       NUL
L \mid
    114 |
               30 |
    117 | Sigal
                         | STOBIAS | 515.127.4564
                                                | 1997-07-24 | PU CLERK | 2800.00 |
                                                                                       NU
                | Tobias
LL | 114 |
                30 |
                          | GHIMURO | 515.127.4565
                                                   | 1998-11-15 | PU CLERK | 2600.00 |
     118 | Guy
                Himuro
ULL | 114 |
                30 |
    119 | Karen
                 | Colmenares | KCOLMENA | 515.127.4566 | 1999-08-10 | PU CLERK | 2500.00 |
 NULL | 114 |
                     30 |
     120 | Matthew | Weiss
                           | MWEISS | 650.123.1234
                                                    | 1996-07-18 | ST MAN | 8000.00 |
                                                                                        NU
LL |
       100 |
                 50 |
```

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AC ACCOUNT | Public Accountant |

```
| AFRIPP | 650.123.2234 | 1997-04-10 | ST MAN | 8200.00 |
     121 | Adam
                  | Fripp
                                                                                             NULL
     100
               50 |
                   | Kaufling | PKAUFLIN | 650.123.3234 | 1995-05-01 | ST MAN | 7900.00 |
     122 | Payam
                                                                                                 N
        100 |
                   50 |
ULL |
     123 | Shanta
                   | Vollman | SVOLLMAN | 650.123.4234 | | 1997-10-10 | ST MAN | | 6500.00 |
NULL |
          100 |
                     50 |
                  | Mourgos
     124 | Kevin
                            | KMOURGOS | 650.123.5234 | 1999-11-16 | ST MAN | 5800.00 |
NULL |
          100 |
                     50 |
                           | JNAYER | 650.124.1214 | 1997-07-16 | ST CLERK | 3200.00 |
                                                                                              NUL
     125 | Julia
                 Naver
      120 |
L \mid
                 50 |
     126 | Irene
                 | Mikkilineni | IMIKKILI | 650.124.1224 | 1998-09-28 | ST CLERK | 2700.00 |
                                                                                                NU
       120 |
LL |
                  50 |
     127 | James
                  Landry
                            | JLANDRY | 650.124.1334 | 1999-01-14 | ST CLERK | 2400.00 |
                                                                                                N
        120 |
ULL |
                   50 |
     128 | Steven
                  | Markle
                            | SMARKLE | 650.124.1434
                                                       | 2000-03-08 | ST CLERK | 2200.00 |
                                                                                                N
        120 |
ULL |
                   50 |
                                                                                              NUL
                 Bissot
                           | LBISSOT | 650.124.5234 | 1997-08-20 | ST CLERK | 3300.00 |
     129 | Laura
L \mid
      121 |
                 50 |
     130 | Mozhe
                   | Atkinson | MATKINSO | 650.124.6234 | 1997-10-30 | ST CLERK | 2800.00 |
          121 |
                     50 |
NULL |
     131 | James
                  | Marlow
                             | JAMRLOW | 650.124.7234 | 1997-02-16 | ST CLERK | 2500.00 |
NULL |
          121
                     50 |
                          | TJOLSON | 650.124.8234 | 1999-04-10 | ST CLERK | 2100.00 |
                                                                                              NUL
     132 | TJ
                 Olson
     121 |
                 50 |
L \mid
     133 | Jason
                  | Mallin
                          | JMALLIN | 650.127.1934 | 1996-06-14 | ST CLERK | 3300.00 |
                                                                                               NU
LL |
       122 |
                  50 |
     134 | Michael | Rogers
                            | MROGERS | 650.127.1834 | 1998-08-26 | ST CLERK | 2900.00 |
NULL |
          122 |
                     50 |
     135 | Ki
                          | KGEE | 650.127.1734 | 1999-12-12 | ST CLERK | 2400.00 |
                                                                                           NULL |
                 Gee
   122 |
              50 |
     136 | Hazel
                 | Philtanker | HPHILTAN | 650.127.1634
                                                       | 2000-02-06 | ST CLERK | 2200.00 |
                                                                                                N
         122 |
ULL |
                   50 |
     137 | Renske
                   Ladwig
                             | RLADWIG | 650.121.1234 | 1995-07-14 | ST CLERK | 3600.00 |
NULL |
          123 |
                     50 |
                            | SSTILES | 650.121.2034 | 1997-10-26 | ST CLERK | 3200.00 |
     138 | Stephen | Stiles
                                                                                              NUL
                 50 |
     123 |
                           | JSEO | 650.121.2019 | 1998-02-12 | ST CLERK | 2700.00 |
                                                                                           NULL |
     139 | John
                 Seo
   123 |
             50 |
                           | JPATEL | 650.121.1834 | 1998-04-06 | ST CLERK | 2500.00 |
                                                                                             NUL
     140 | Joshua
                  | Patel
      123 |
                 50 |
     141 | Trenna
                            | TRAJS | 650.121.8009 | 1995-10-17 | ST CLERK | 3500.00 |
                                                                                             NULL
                  Rais
     124 |
               50 |
                                                                                               NU
     142 | Curtis
                  Davies
                            | CDAVIES | 650.121.2994 | 1997-01-29 | ST CLERK | 3100.00 |
       124
LL |
                  50 |
     143 | Randall | Matos
                            | RMATOS | 650.121.2874 | 1998-03-15 | ST CLERK | 2600.00 |
                                                                                                N
        124 |
ULL |
                   50 |
                            | PVARGAS | 650.121.2004 | 1998-07-09 | ST CLERK | 2500.00 |
     144 | Peter
                                                                                                NU
                  | Vargas
LL |
       124 |
                  50 |
                           | JRUSSEL | 011.44.1344.429268 | 1996-10-01 | SA MAN | | 14000.00 |
     145 | John
                  Russell
40 |
       100 |
                 80 |
     146 | Karen
                | Partners | KPARTNER | 011.44.1344.467268 | 1997-01-05 | SA MAN | 13500.00 |
          100 |
                    80 |
     147 | Alberto | Errazuriz | AERRAZUR | 011.44.1344.429278 | 1997-03-10 | SA MAN | 12000.00 |
         100 |
 0.30
                     80 |
```

```
148 | Gerald
                    Cambrault | GCAMBRAU | 011.44.1344.619268 | 1999-10-15 | SA MAN | 11000.00 |
    0.30 \, \perp
             100
     149 | Eleni
                   | Zlotkev
                             | EZLOTKEY | 011.44.1344.429018 | 2000-01-29 | SA MAN
                                                                                        10500.001
0.20
          100 |
                     80 |
     150 | Peter
                   | Tucker
                             | PTUCKER | 011.44.1344.129268 | 1997-01-30 | SA REP | | 10000.00 |
                                                                                                       0.
       145 |
30 |
                   80 |
     151 | David
                   | Bernstein | DBERNSTE | 011.44.1344.345268 | 1997-03-24 | SA REP
                                                                                        | 9500.00 |
0.25
         145 |
                    80 |
                            | PHALL | 011.44.1344.478968 | 1997-08-20 | SA REP | 9000.00 |
                                                                                                    0.25
     152 | Peter
                   | Hall
    145 |
               80 |
     153 | Christopher | Olsen
                             | COLSEN | 011.44.1344.498718 | 1998-03-30 | SA REP
                                                                                                        0
        145 |
.20
                   80 |
     154 | Nanette
                    | Cambrault | NCAMBRAU | 011.44.1344.987668 | 1998-12-09 | SA REP
  0.20
           145 |
                       80 |
     155 | Oliver
                   | Tuvault
                              OTUVAULT | 011.44.1344.486508 | 1999-11-23 | SA REP
                                                                                        | 7000.00 |
0.15
         145 |
                    80 |
                             | JKING | 011.44.1345.429268 | 1996-01-30 | SA REP | 10000.00 |
     156 | Janette
                   King
                                                                                                     0.35
    146
               80 |
     157 | Patrick
                   Sully
                             | PSULLY | 011.44.1345.929268 | 1996-03-04 | SA REP
                                                                                    | 9500.00 |
                                                                                                     0.35
     146
                80 |
     158 | Allan
                   | McEwen
                                | AMCEWEN | 011.44.1345.829268 | 1996-08-01 | SA REP
 0.35
          146
                      80 |
                               | LSMITH | 011.44.1345.729268 | 1997-03-10 | SA REP
     159 | Lindsey
                   Smith
                                                                                      | 8000.00 |
                                                                                                       0.3
      146
                  80 |
0 |
     160 | Louise
                    Doran
                              | LDORAN | 011.44.1345.629268 | 1997-12-15 | SA REP
                                                                                       | 7500.00 |
                                                                                                       0.
       146 |
30 |
                   80 |
                                                                                       | 7000.00 |
     161 | Sarath
                   Sewall
                              | SSEWALL | 011.44.1345.529268 | 1998-11-03 | SA REP
                                                                                                       0.
25 |
       146
                   80 |
     162 | Clara
                   | Vishney
                              | CVISHNEY | 011.44.1346.129268 | 1997-11-11 | SA REP
                                                                                       | 10500.00 |
         147 |
                    80 |
0.25
     163 | Danielle | Greene
                               | DGREENE | 011.44.1346.229268 | 1999-03-19 | SA REP
                                                                                        | 9500.00 |
0.15
         147 |
                    80 |
                               | MMARVINS | 011.44.1346.329268 | 2000-01-24 | SA REP
     164 | Mattea
                    | Marvins
          147 |
0.10
                     80 |
     165 | David
                    Lee
                             | DLEE | 011.44.1346.529268 | 2000-02-23 | SA REP | 6800.00 |
                                                                                                    0.10 |
               80 |
    147 |
                              | SANDE | 011.44.1346.629268 | 2000-03-24 | SA REP
                                                                                                      0.1
     166 | Sundar
                    Ande
                                                                                     | 6400.00 |
0 |
      147 |
                  80 |
     167 | Amit
                              | ABANDA | 011.44.1346.729268 | 2000-04-21 | SA REP
                                                                                                       0.
                   Banda
                                                                                      | 6200.00 |
       147 |
10 |
                   80 |
                            LOZER | 011.44.1343.929268 | 1997-03-11 | SA REP | 11500.00 |
     168 | Lisa
                   Ozer
                                                                                                     0.25
    148 |
               80 |
     169 | Harrison | Bloom
                               | HBLOOM | 011.44.1343.829268 | 1998-03-23 | SA REP
                                                                                        | 10000.00 |
         148 |
0.20
                    80 |
     170 | Tayler
                    Fox
                             TFOX | 011.44.1343.729268 | 1998-01-24 | SA REP | 9600.00 |
                                                                                                    0.20
    148 |
               80 |
     171 | William
                               | WSMITH | 011.44.1343.629268 | 1999-02-23 | SA REP
                                                                                       | 7400.00 |
                                                                                                       0.
                    Smith
15 |
       148 |
                   80 |
                              | EBATES | 011.44.1343.529268 | 1999-03-24 | SA REP | | 7300.00 |
                                                                                                       0.1
     172 | Elizabeth | Bates
5 |
      148 |
                 80 |
     173 | Sundita | Kumar
                               | SKUMAR | 011.44.1343.329268 | 2000-04-21 | SA REP
                                                                                                        0
                                                                                       | 6100.00 |
.10
        148 |
                   80 |
     174 | Ellen
                   Abel
                             | EABEL | 011.44.1644.429267 | 1996-05-11 | SA REP | 11000.00 |
                                                                                                     0.30
     149 |
                80 |
```

```
| AHUTTON | 011.44.1644.429266 | 1997-03-19 | SA REP
                                                                                     | 8800.00 |
     175 | Alyssa
                   Hutton
.25
        149 |
                  80 |
     176 | Jonathon | Taylor
                              | JTAYLOR | 011.44.1644.429265 | 1998-03-24 | SA REP
                                                                                    | 8600.00 |
                                                                                                    0
.20
        149 |
                  80 |
     177 | Jack
                  | Livingston | JLIVINGS | 011.44.1644.429264 | 1998-04-23 | SA REP
                                                                                    | 8400.00 |
                                                                                                   0.
20 |
       149 |
                  80 |
     178 | Kimberely | Grant
                              KGRANT | 011.44.1644.429263 | 1999-05-24 | SA REP
                                                                                     1 7000.00 1
0.15 |
        149 |
                  NULL |
     179 | Charles | Johnson
                              | CJOHNSON | 011.44.1644.429262 | 2000-01-04 | SA REP
         149 |
0.10
                    80 |
     180 | Winston
                  | Taylor
                              | WTAYLOR | 650.507.9876 | 1998-01-24 | SH CLERK | 3200.00 |
           120 |
NULL |
                     50 |
                            | JFLEAUR | 650.507.9877 | 1998-02-23 | SH CLERK | 3100.00 |
                                                                                                 NUL
     181 | Jean
                  | Fleaur
     120 |
L \mid
                 50 |
     182 | Martha | Sullivan | MSULLIVA | 650.507.9878
                                                           | 1999-06-21 | SH CLERK | 2500.00 |
           120 |
                      50 |
NULL |
     183 | Girard
                   | Geoni
                                                      | 2000-02-03 | SH CLERK | 2800.00 |
                             | GGEONI | 650.507.9879
                                                                                                  NU
LL |
        120 |
                  50 |
     184 | Nandita
                  | Sarchand | NSARCHAN | 650.509.1876
                                                           | 1996-01-27 | SH CLERK | 4200.00 |
           121 |
                      50 |
NULL |
     185 | Alexis
                            | ABULL | 650.509.2876 | 1997-02-20 | SH CLERK | 4100.00 |
                                                                                                NUL
                   Bull
L \mid
      121 |
                 50 |
     186 | Julia
                 | Dellinger | JDELLING | 650.509.3876
                                                       | 1998-06-24 | SH CLERK | 3400.00 |
                                                                                                  NU
        121 |
LL |
                  50 |
     187 | Anthony | Cabrio
                              | ACABRIO | 650.509.4876
                                                         | 1999-02-07 | SH CLERK | 3000.00 |
                                                                                                   N
         121 |
ULL |
                    50 |
     188 | Kelly
                                                         | 1997-06-14 | SH CLERK | 3800.00 |
                  Chung
                             | KCHUNG | 650.505.1876
                                                                                                   N
ULL
         122 |
                    50 |
     189 | Jennifer | Dilly
                            | JDILLY | 650.505.2876 | 1997-08-13 | SH CLERK | 3600.00 |
                                                                                                NUL
                 50 |
      122 |
L \mid
     190 | Timothy | Gates
                              | TGATES | 650.505.3876
                                                         | 1998-07-11 | SH CLERK | 2900.00 |
                                                                                                   N
ULL |
         122 |
                    50 |
     191 | Randall
                   | Perkins
                             | RPERKINS | 650.505.4876
                                                        | 1999-12-19 | SH CLERK | 2500.00 |
                                                                                                   N
ULL |
         122 |
                    50 |
                           | SBELL | 650.501.1876 | 1996-02-04 | SH CLERK | 4000.00 |
     192 | Sarah
                  Bell
                                                                                               NULL
     123 |
               50 |
                  | Everett | BEVERETT | 650.501.2876
     193 | Britney
                                                          | 1997-03-03 | SH CLERK | 3900.00 |
                                                                                                   N
         123 |
                    50 |
ULL |
     194 | Samuel
                   | McCain
                               | SMCCAIN | 650.501.3876
                                                          | 1998-07-01 | SH CLERK | 3200.00 |
                     50 |
NULL |
          123 |
     195 | Vance
                   Jones
                             | VJONES | 650.501.4876 | 1999-03-17 | SH CLERK | 2800.00 |
                                                                                                 NU
LL |
        123 |
                  50 |
     196 | Alana
                   | Walsh
                             | AWALSH | 650.507.9811
                                                       | 1998-04-24 | SH CLERK | 3100.00 |
                                                                                                   N
         124 |
                    50 |
ULL |
     197 | Kevin
                   | Feeney
                             | KFEENEY | 650.507.9822 | 1998-05-23 | SH CLERK | 3000.00 |
                                                                                                   N
         124 |
ULL |
                    50 |
                    | OConnell | DOCONNEL | 650.507.9833
     198 | Donald
                                                            | 1999-06-21 | SH CLERK | 2600.00 |
 NULL |
          124 |
                       50 |
     199 | Douglas
                    Grant
                             | DGRANT | 650.507.9844
                                                          | 2000-01-13 | SH CLERK | 2600.00 |
                                                                                                   N
ULL |
         124 |
                    50 |
     200 | Jennifer
                  | Whalen
                              | JWHALEN | 515.123.4444 | 1987-09-17 | AD ASST | 4400.00 |
                                                                                                   N
ULL |
         101 |
     201 | Michael
                    | Hartstein | MHARTSTE | 515.123.5555
                                                            | 1996-02-17 | MK MAN | 13000.00 |
           100 |
NULL |
                      20 |
```

```
| Fav
                        | PFAY
                                | 603.123.6666
                                                | 1997-08-17 | MK REP | 6000.00 |
                                                                                     NULL |
     202 | Pat
  201 |
            20 |
     203 | Susan
                           | SMAVRIS | 515.123.7777
                                                     | 1994-06-07 | HR REP
                Mavris
                                                                          | 6500.00 |
                                                                                         NUL
L \mid
      101 |
                40 |
     204 | Hermann | Baer
                            | HBAER | 515.123.8888
                                                     | 1994-06-07 | PR REP
                                                                         | 10000.00 |
                                                                                         NUL
L \mid
      101
                70 |
     205 | Shelley | Higgins
                           | SHIGGINS | 515.123.8080
                                                     | 1994-06-07 | AC MGR | 12000.00 |
                                                                                           N
        101 |
                  110 |
ULL |
     206 | William
                                                    | 1994-06-07 | AC ACCOUNT | 8300.00 |
                 | Gietz
                           | WGIETZ | 515.123.8181
NULL |
          205 |
                   110 |
____+
107 rows in set (0.00 sec)
mysql> select first name, last name, salary from employees where salary = max('salary');
ERROR 1111 (HY000): Invalid use of group function
mysql> select first name, last name, salary from employees where salary >= '10000';
+----+
| first_name | last_name | salary |
+----+
              | 24000.00 |
       King
Steven
Neena
         | Kochhar | 17000.00 |
Lex
       | De Haan | 17000.00 |
        | Greenberg | 12000.00 |
Nancy
        | Raphaely | 11000.00 |
Den
John
        | Russell | 14000.00 |
       | Partners | 13500.00 |
 Karen
 Alberto | Errazuriz | 12000.00 |
 Gerald
        | Cambrault | 11000.00 |
 Eleni
        | Zlotkey | 10500.00 |
Peter
        | Tucker | 10000.00 |
 Janette | King
               | 10000.00 |
 Clara
        | Vishney | 10500.00 |
              | 11500.00 |
       | Ozer
Lisa
 Harrison | Bloom | 10000.00 |
       Abel
 Ellen
              | 11000.00 |
Michael | Hartstein | 13000.00 |
Hermann | Baer | 10000.00
| Shelley | Higgins | 12000.00 |
+----+
19 rows in set (0.01 sec)
mysql> select * from department;
ERROR 1146 (42S02): Table 'hr db.department' doesn't exist
mysql> select * from departments;
+----+
| department id | department name | manager id | location id |
+-----+
      10 | Administration
                             200 |
                                     1700 |
      20 | Marketing
                            201 |
                                    1800 |
      30 | Purchasing
                            114 |
                                    1700 |
      40 | Human Resources
                               203 |
                                       2400 |
      50 | Shipping
                            121 |
                                    1500 |
      60 | IT
                          103 |
                                 1400 |
```

```
70 | Public Relations
                                          2700 |
                                 204 |
       80 | Sales
                             145 |
                                      2500
       90 | Executive
                               100
                                        1700 |
      100 | Finance
                               108 |
                                        1700 |
      110 | Accounting
                                205 |
                                         1700
      120 | Treasury
                               NULL |
                                          1700 |
      130 | Corporate Tax
                                 NULL |
                                            1700 |
      140 | Control And Credit |
                                  NULL |
                                              1700 |
      150 | Shareholder Services |
                                   NULL |
                                              1700 |
      160 | Benefits
                              NULL |
                                         1700 |
      170 | Manufacturing
                                 NULL |
                                             1700
      180 | Construction
                                NULL |
                                           1700
      190 | Contracting
                               NULL |
                                           1700 |
      200 | Operations
                               NULL |
                                           1700 |
      210 | IT Support
                               NULL |
                                           1700
      220 | NOC
                              NULL |
                                          1700 |
      230 | IT Helpdesk
                                NULL |
                                            1700
      240 | Government Sales
                                  NULL |
                                              1700 |
      250 | Retail Sales
                               NULL |
                                          1700
      260 | Recruiting
                               NULL |
                                          1700
                              NULL |
      270 | Payroll
                                         1700 |
   -----+
27 rows in set (0.00 sec)
mysql> select * from jobs history;
ERROR 1146 (42S02): Table 'hr db.jobs history' doesn't exist
mysql> select * from job history;
     101 | 1989-09-21 | 1993-10-27 | AC ACCOUNT |
     101 | 1993-10-28 | 1997-03-15 | AC MGR
```

```
+-----+
| employee_id | start_date | end date | job id | department id |
+-----+
                                                110 |
                                             110
    102 | 1993-01-13 | 1998-07-24 | IT PROG |
                                             60 |
    114 | 1998-03-24 | 1999-12-31 | ST CLERK |
                                              50 |
    122 | 1999-01-01 | 1999-12-31 | ST CLERK |
                                              50 |
    176 | 1998-03-24 | 1998-12-31 | SA REP
                                            80 |
    176 | 1999-01-01 | 1999-12-31 | SA MAN
                                             80 |
    200 | 1987-09-17 | 1993-06-17 | AD ASST
                                              90 |
    200 | 1994-07-01 | 1998-12-31 | AC ACCOUNT |
                                                90 |
    201 | 1996-02-17 | 1999-12-19 | MK REP
                                             20 |
```

+-----+

10 rows in set (0.00 sec)

 $mysql \gt select~E.first_name~,~E.last_name~,~E.job_id~,~E.department_id~,~J.job_id~,~J.job_title~,~D.department_id~,~D.department_name~,~E.last_name~,~E.job_id~,~E.department_id~,~D.departmen$

- -> from employees E
- -> full join E.job_id = J.job_id

->;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL s erver version for the right syntax to use near 'full join E.job_id = $J.job_id'$ at line 3 mysql> select E.first_name , E.last_name , E.job_id , E.department_id , $J.job_id'$
- -> -> from employees E
- -> -> join jobs J

```
-> on;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL s
erver version for the right syntax to use near 'from employees E
   -> join jobs J
on' at line 2
mysql> select E.first name, E.last name, E.job id, E.department id, J.job id, J.job title, D.department id, D.d
epartment name
   -> from employees E
   -> join jobs J
   \rightarrow on E.job id = J.job id
   -> join departments D
   -> on E.department id = D.department id;
| first name | last name | job id | department id | job id | job title
                                                                                                                        | department id | department
name
| William | Gietz | AC ACCOUNT | 110 | AC ACCOUNT | Public Accountant | 110 | A
ccounting
                | Higgins | AC MGR | 110 | AC MGR | Accounting Manager | 110 | Accounting M
Shelley
ting
| Jennifer | Whalen | AD ASST | 10 | AD ASST | Administration Assistant
                                                                                                                                                10 | Adminis
tration |
Steven
             King
                               | AD PRES |
                                                               90 | AD PRES | President
                                                                                                                                     90 | Executive
                                                              90 | AD VP | Administration Vice President |
                | Kochhar | AD VP |
                                                                                                                                               90 | Executiv
Neena
             | De Haan | AD VP |
                                                             90 | AD VP | Administration Vice President |
                                                                                                                                              90 | Executive
Lex
             | Faviet
                              | FI ACCOUNT | 100 | FI ACCOUNT | Accountant
                                                                                                                                              100 | Finance
Daniel
             | Chen | FI ACCOUNT | 100 | FI ACCOUNT | Accountant
John
                                                                                                                                               100 | Finance
             | Sciarra | FI ACCOUNT | 100 | FI ACCOUNT | Accountant
                                                                                                                                               100 | Finance
Ismael
| Jose Manuel | Urman | FI ACCOUNT |
                                                                       100 | FI ACCOUNT | Accountant
                                                                                                                                                     100 | Fina
nce
                                                                                                                      | Popp | FI ACCOUNT | 100 | FI ACCOUNT | Accountant
                                                                                                                                              100 | Finance
Luis
             | Greenberg | FI MGR | 100 | FI MGR | Finance Manager |
                                                                                                                                           100 | Finance
Nancy
Susan
               Mavris
                              |HR REP |
                                                              40 | HR REP | Human Resources Representative |
                                                                                                                                                   40 | Huma
n Resources
| Alexander | Hunold | IT PROG |
                                                                  60 | IT PROG | Programmer
                                                                                                                                           60 | IT
                                                             60 | IT PROG | Programmer
Bruce
               Ernst
                              | IT PROG |
                                                                                                                                      60 | IT
                              | IT PROG |
                                                             60 | IT PROG | Programmer
                                                                                                                                       60 | IT
 David
             Austin
 Valli
              | Pataballa | IT PROG |
                                                              60 | IT PROG | Programmer
                                                                                                                                       60 | IT
             Lorentz
                              | IT PROG |
                                                              60 | IT PROG | Programmer
                                                                                                                                       60 | IT
 Diana
| Michael | Hartstein | MK MAN |
                                                                  20 | MK MAN | Marketing Manager
                                                                                                                                                  20 | Market
ing
| Pat
        | Fay | MK REP |
                                                           20 | MK REP | Marketing Representative | 20 | Marketing
| Hermann | Baer | PR REP |
                                                               70 | PR REP | Public Relations Representative |
                                                                                                                                                70 | Public R
```

```
elations |
| Alexander | Khoo
                      | PU CLERK |
                                            30 | PU CLERK | Purchasing Clerk
                                                                                               30 | Purchasi
ng
                                         30 | PU CLERK | Purchasing Clerk
Shelli
         Baida
                    PU CLERK
                                                                                            30 | Purchasing
                    | PU CLERK |
| Sigal
         | Tobias
                                          30 | PU CLERK | Purchasing Clerk
                                                                                            30 | Purchasing
| Guy
          | Himuro
                     | PU CLERK |
                                           30 | PU CLERK | Purchasing Clerk
                                                                                              30 | Purchasin
g
Karen
          | Colmenares | PU CLERK |
                                             30 | PU CLERK | Purchasing Clerk
                                                                                                30 | Purchas
ing
          | Raphaely | PU MAN
                                                                                              30 | Purchasin
Den
                                          30 | PU MAN
                                                          | Purchasing Manager
John
          Russell
                    SA MAN
                                         80 | SA MAN
                                                         | Sales Manager
                                                                                          80 | Sales
Karen
          | Partners | SA MAN
                                          80 | SA MAN
                                                          | Sales Manager
                                                                                           80 | Sales
| Alberto
           | Errazuriz | SA MAN
                                          80 | SA MAN
                                                           | Sales Manager
                                                                                           80 | Sales
                                                                                            80 | Sales
Gerald
          | Cambrault | SA MAN
                                           80 | SA MAN
                                                           | Sales Manager
| Eleni
          | Zlotkey
                     SA MAN
                                         80 | SA MAN
                                                         | Sales Manager
                                                                                          80 | Sales
                                        80 | SA REP
                                                       | Sales Representative
Peter
         | Tucker
                    | SA REP
                                                                                         80 | Sales
          | Bernstein | SA REP
                                         80 | SA REP
                                                        | Sales Representative
                                                                                           80 | Sales
| David
| Peter
         | Hall
                   | SA REP
                                      80 | SA REP
                                                     | Sales Representative
                                                                                        80 | Sales
                                          80 | SA REP
| Christopher | Olsen
                                                         | Sales Representative
                                                                                           80 | Sales
                      | SA REP
          | Cambrault | SA REP
                                          80 | SA REP
                                                          | Sales Representative
                                                                                            80 | Sales
Nanette
Oliver
          | Tuvault
                     | SA REP
                                        80 | SA REP
                                                       | Sales Representative
                                                                                          80 | Sales
Janette
           King
                    | SA REP
                                        80 | SA REP
                                                       | Sales Representative
                                                                                         80 | Sales
                    | SA REP
                                       80 | SA REP
                                                       Sales Representative
                                                                                         80 | Sales
Patrick
           Sully
Allan
          | McEwen
                      | SA REP
                                          80 | SA REP
                                                         | Sales Representative
                                                                                           80 | Sales
Lindsey
           Smith
                     | SA REP
                                         80 | SA REP
                                                        | Sales Representative
                                                                                          80 | Sales
                     | SA REP
                                         80 | SA REP
                                                                                          80 | Sales
| Louise
           Doran
                                                        | Sales Representative
 Sarath
          Sewall
                     SA REP
                                        80 | SA REP
                                                       | Sales Representative
                                                                                          80 | Sales
                                         80 | SA REP
 Clara
          | Vishney
                     | SA REP
                                                        | Sales Representative
                                                                                          80 | Sales
                                         80 | SA REP
Danielle | Greene
                      | SA REP
                                                        | Sales Representative
                                                                                           80 | Sales
Mattea
          | Marvins
                      | SA REP
                                         80 | SA REP
                                                        | Sales Representative
                                                                                           80 | Sales
 David
          Lee
                    SA REP
                                       80 | SA REP
                                                      | Sales Representative
                                                                                         80 | Sales
 Sundar
           Ande
                     | SA REP
                                         80 | SA REP
                                                        | Sales Representative
                                                                                          80 | Sales
 Amit
          Banda
                     | SA REP
                                        80 | SA REP
                                                       | Sales Representative
                                                                                          80 | Sales
                   | SA REP
                                       80 | SA REP
                                                      | Sales Representative
                                                                                        80 | Sales
 Lisa
         | Ozer
 Harrison | Bloom
                      | SA REP
                                          80 | SA REP
                                                         | Sales Representative
                                                                                           80 | Sales
Tayler
          | Fox
                    | SA REP
                                       80 | SA REP
                                                      | Sales Representative
                                                                                         80 | Sales
William
          Smith
                                         80 | SA REP
                                                        | Sales Representative
                                                                                          80 | Sales
                     | SA REP
                     | SA REP
                                                                                          80 | Sales
| Elizabeth | Bates
                                         80 | SA REP
                                                        | Sales Representative
                                         80 | SA REP
                                                        | Sales Representative
                                                                                           80 | Sales
Sundita
          Kumar
                      | SA REP
```

```
Ellen
         Abel
                   | SA REP
                                     80 | SA REP
                                                   | Sales Representative
                                                                                   80 | Sales
          | Hutton
                    SA REP
                                      80 | SA REP
                                                    | Sales Representative
                                                                                     80 | Sales
 Alyssa
Jonathon
          | Taylor
                    | SA REP
                                       80 | SA REP
                                                     | Sales Representative
                                                                                     80 | Sales
| Jack
         | Livingston | SA REP
                                      80 | SA REP
                                                     | Sales Representative
                                                                                     80 | Sales
                                                     | Sales Representative
                                                                                     80 | Sales
Charles
          Johnson
                     | SA REP
                                       80 | SA REP
Winston
          | Taylor
                    SH CLERK
                                         50 | SH CLERK | Shipping Clerk
                                                                                        50 | Shipping
Jean
         | Fleaur
                   SH CLERK
                                       50 | SH CLERK | Shipping Clerk
                                                                                      50 | Shipping
          Sullivan
                    SH CLERK
                                         50 | SH CLERK | Shipping Clerk
                                                                                        50 | Shipping
| Martha
                    SH CLERK
                                        50 | SH CLERK | Shipping Clerk
                                                                                       50 | Shipping
Girard
          Geoni
          | Sarchand | SH CLERK |
                                          50 | SH CLERK | Shipping Clerk
                                                                                         50 | Shipping
| Nandita
                  SH CLERK
                                       50 | SH CLERK | Shipping Clerk
                                                                                      50 | Shipping
Alexis
         Bull
| Julia
        | Dellinger | SH CLERK |
                                        50 | SH CLERK | Shipping Clerk
                                                                                      50 | Shipping
                     SH CLERK
                                         50 | SH CLERK | Shipping Clerk
           | Cabrio
                                                                                        50 | Shipping
Anthony
| Kelly
                    SH CLERK
                                        50 | SH CLERK | Shipping Clerk
                                                                                       50 | Shipping
         Chung
                   SH CLERK
                                       50 | SH CLERK | Shipping Clerk
                                                                                      50 | Shipping
Jennifer
         Dilly
                    SH CLERK
                                         50 | SH CLERK | Shipping Clerk
| Timothy
           Gates
                                                                                        50 | Shipping
Randall
          | Perkins
                    SH CLERK
                                         50 | SH CLERK | Shipping Clerk
                                                                                        50 | Shipping
                  SH CLERK
                                       50 | SH CLERK | Shipping Clerk
                                                                                     50 | Shipping
Sarah
         Bell
                                        50 | SH CLERK | Shipping Clerk
Britney
          | Everett
                    SH CLERK
                                                                                       50 | Shipping
                     SH CLERK
                                          50 | SH CLERK | Shipping Clerk
Samuel
          | McCain
                                                                                         50 | Shipping
          Jones
                   SH CLERK
                                        50 | SH CLERK | Shipping Clerk
                                                                                       50 | Shipping
Vance
| Alana
          | Walsh
                    SH CLERK
                                        50 | SH CLERK | Shipping Clerk
                                                                                       50 | Shipping
Kevin
          Feeney
                    SH CLERK
                                        50 | SH CLERK | Shipping Clerk
                                                                                       50 | Shipping
| Donald
          OConnell | SH CLERK |
                                          50 | SH CLERK | Shipping Clerk
                                                                                         50 | Shipping
                    | SH CLERK |
                                        50 | SH CLERK | Shipping Clerk
                                                                                        50 | Shipping
Douglas
          Grant
| Julia
        | Nayer
                  ST CLERK
                                       50 | ST CLERK | Stock Clerk
                                                                                    50 | Shipping
Irene
         | Mikkilineni | ST CLERK |
                                         50 | ST CLERK | Stock Clerk
                                                                                      50 | Shipping
                    ST CLERK
                                        50 | ST CLERK | Stock Clerk
                                                                                      50 | Shipping
James
          Landry
```

```
Steven
        Markle
                ST CLERK
                                  50 | ST CLERK | Stock Clerk
                                                                         50 | Shipping
Laura
        Bissot
              ST CLERK
                                 50 | ST CLERK | Stock Clerk
                                                                  50 | Shipping
| Mozhe
        | Atkinson | ST CLERK | 50 | ST CLERK | Stock Clerk
                                                                          50 | Shipping
        | Marlow
                 ST CLERK
                                   50 | ST CLERK | Stock Clerk
                                                                         50 | Shipping
James
| TJ
       Olson
             ST CLERK | 50 | ST CLERK | Stock Clerk
                                                                       50 | Shipping
        | Mallin
               ST CLERK | 50 | ST CLERK | Stock Clerk
                                                                        50 | Shipping
Jason
                ST CLERK
                                  50 | ST CLERK | Stock Clerk
| Michael | Rogers
                                                                  50 | Shipping
| Ki
              ST CLERK
                                50 | ST CLERK | Stock Clerk
       Gee
                                                                50 | Shipping
        | Philtanker | ST CLERK |
                                  50 | ST CLERK | Stock Clerk
                                                                         50 | Shipping
| Hazel
        Ladwig
                                   50 | ST CLERK | Stock Clerk
                                                                   Renske
                ST CLERK
                                                                          50 | Shipping
                                 50 | ST CLERK | Stock Clerk
Stephen
        Stiles
               ST CLERK |
                                                                        50 | Shipping
       Seo
               ST CLERK |
John
                                50 | ST CLERK | Stock Clerk
                                                                       50 | Shipping
Joshua
        | Patel
                ST CLERK
                                 50 | ST CLERK | Stock Clerk
                                                                  50 | Shipping
        Rajs
Trenna
                ST CLERK
                                 50 | ST CLERK | Stock Clerk
                                                                        50 | Shipping
        | Davies
                ST CLERK |
                                 50 | ST CLERK | Stock Clerk
                                                                        50 | Shipping
| Curtis
Randall
       | Matos
                ST CLERK |
                                 50 | ST CLERK | Stock Clerk
                                                                         50 | Shipping
Peter
                ST CLERK |
                                 50 | ST CLERK | Stock Clerk
                                                                        50 | Shipping
       | Vargas
| Matthew | Weiss
                ST MAN
                                  50 | ST MAN
                                               | Stock Manager
                                                                  50 | Shipping
        Fripp
                ST MAN
                                 50 | ST MAN | Stock Manager
                                                                        50 | Shipping
| Adam
        | Kaufling | ST MAN |
                                  50 | ST MAN
                                              | Stock Manager
Payam
                                                                   50 | Shipping
        | Vollman | ST MAN |
                                  50 | ST MAN | Stock Manager
                                                                         50 | Shipping
Shanta
                                                                         50 | Shipping
        | Mourgos | ST MAN |
                                  50 | ST MAN | Stock Manager
Kevin
```

106 rows in set (0.00 sec)

mysql> SELECT employee_id, job_title, end_date-start_date DAYS

- -> FROM job history
- -> NATURAL JOIN jobs
- -> WHERE department_id=80;

```
176 | Sales Representative | 907 |
    176 | Sales Manager | 1130 |
   -----+
2 rows in set (0.01 sec)
mysql> select * from employees;
| employee id | first name | last name | email | phone number | hire date | job id | salary | commission
pct | manager id | department id |
----+
    100 | Steven | King | SKING | 515.123.4567 | 1987-06-17 | AD PRES | 24000.00 |
                                                                                   NULL
    NULL |
               90 |
               | Kochhar | NKOCHHAR | 515.123.4568 | 1989-09-21 | AD VP
   101 | Neena
                                                                         | 17000.00 |
NULL | 100 |
                   90 |
    102 | Lex
                | De Haan | LDEHAAN | 515.123.4569 | 1993-01-13 | AD VP | 17000.00 |
                                                                                     NU
LL | 100 |
                90 |
    103 | Alexander | Hunold | AHUNOLD | 590.423.4567 | 1990-01-03 | IT PROG | 9000.00 |
NULL | 102 |
                   60 |
                       | BERNST | 590.423.4568 | 1991-05-21 | IT PROG | 6000.00 |
    104 | Bruce
                Ernst
                                                                                   NULL
    103 |
              60 |
    105 | David
                         | DAUSTIN | 590.423.4569 | 1997-06-25 | IT PROG | 4800.00 |
                                                                                    NUL
                Austin
    103 |
               60 |
L \mid
    106 | Valli
               | Pataballa | VPATABAL | 590.423.4560 | 1998-02-05 | IT PROG | 4800.00 |
                                                                                     NU
LL |
     103 |
                60 |
    107 | Diana
                | Lorentz | DLORENTZ | 590.423.5567 | 1999-02-07 | IT PROG | 4200.00 |
                                                                                     N
ULL | 103 |
                 60 |
    108 | Nancy
                 | Greenberg | NGREENBE | 515.124.4569 | 1994-08-17 | FI MGR | | 12000.00 |
NULL | 101 |
                 100 |
    109 | Daniel
                | Faviet
                         | DFAVIET | 515.124.4169 | 1994-08-16 | FI ACCOUNT | 9000.00 |
                                                                                      N
                 100 |
ULL | 108 |
    110 | John
                | Chen
                        | JCHEN | 515.124.4269 | 1997-09-28 | FI ACCOUNT | 8200.00 |
                                                                                    NU
LL | 108 |
                100 |
    111 | Ismael
               | Sciarra | ISCIARRA | 515.124.4369 | 1997-09-30 | FI ACCOUNT | 7700.00 |
                                                                                      N
ULL | 108 |
                100 |
    112 | Jose Manuel | Urman | JMURMAN | 515.124.4469 | 1998-03-07 | FI ACCOUNT | 7800.00 |
  NULL | 108 | 100 |
              | Popp | LPOPP | 515.124.4567 | 1999-12-07 | FI ACCOUNT | 6900.00 |
    113 | Luis
                                                                                    NUL
    108 |
              100 |
L \mid
    114 | Den
              | Raphaely | DRAPHEAL | 515.127.4561 | 1994-12-07 | PU MAN | 11000.00 |
NULL |
        100 |
                   30 |
                          | AKHOO | 515.127.4562 | 1995-05-18 | PU CLERK | 3100.00 |
    115 | Alexander | Khoo
                                                                                      N
ULL | 114 |
                 30 |
    116 | Shelli
                        | SBAIDA | 515.127.4563 | 1997-12-24 | PU CLERK | 2900.00 |
               | Baida
                                                                                    NUL
               30 |
    114
L \mid
    117 | Sigal
               | Tobias
                        | STOBIAS | 515.127.4564 | 1997-07-24 | PU CLERK | 2800.00 |
                                                                                    NU
LL | 114 |
                30 |
    118 | Guy
               Himuro
                         | GHIMURO | 515.127.4565 | 1998-11-15 | PU CLERK | 2600.00 |
                                                                                      N
ULL | 114 |
                30 |
    119 | Karen | Colmenares | KCOLMENA | 515.127.4566 | 1999-08-10 | PU CLERK | 2500.00 |
 NULL | 114 |
                    30 |
                          | MWEISS | 650.123.1234 | 1996-07-18 | ST MAN | 8000.00 |
    120 | Matthew | Weiss
                                                                                     NU
```

```
LL |
      100 |
                  50 |
                            | AFRIPP | 650.123.2234 | 1997-04-10 | ST MAN | 8200.00 |
     121 | Adam
                  Fripp
                                                                                            NULL
     100 |
               50 |
     122 | Payam
                  | Kaufling | PKAUFLIN | 650.123.3234 | 1995-05-01 | ST MAN | 7900.00 |
                                                                                               N
         100 |
                   50 |
ULL |
     123 | Shanta
                  | Vollman | SVOLLMAN | 650.123.4234 | 1997-10-10 | ST MAN | 6500.00 |
NULL |
          100
                     50 |
     124 | Kevin
                  Mourgos
                             | KMOURGOS | 650.123.5234 | 1999-11-16 | ST MAN | 5800.00 |
NULL |
          100 |
                     50 |
     125 | Julia
                           | JNAYER | 650.124.1214 | 1997-07-16 | ST CLERK | 3200.00 |
                 | Nayer
                                                                                            NUL
L \mid
     120
                 50 |
                 | Mikkilineni | IMIKKILI | 650.124.1224 | 1998-09-28 | ST CLERK | 2700.00 |
                                                                                              NU
     126 | Irene
LL | 120 |
                  50 |
                            | JLANDRY | 650.124.1334 | 1999-01-14 | ST CLERK | 2400.00 |
     127 | James
                  Landry
                                                                                               N
        120 |
                   50 |
ULL |
                            | SMARKLE | 650.124.1434
                                                      | 2000-03-08 | ST CLERK | 2200.00 |
     128 | Steven
                  | Markle
                                                                                               N
        120 |
ULL |
                   50 |
     129 | Laura
                  Bissot
                           | LBISSOT | 650.124.5234 | 1997-08-20 | ST CLERK | 3300.00 |
                                                                                             NUL
     121 |
                50 |
                   | Atkinson | MATKINSO | 650.124.6234 | 1997-10-30 | ST CLERK | 2800.00 |
     130 | Mozhe
          121 |
NULL |
                     50 |
                             | JAMRLOW | 650.124.7234 | 1997-02-16 | ST CLERK | 2500.00 |
     131 | James
                  | Marlow
NULL |
          121 |
                     50 |
                          | TJOLSON | 650.124.8234 | 1999-04-10 | ST CLERK | 2100.00 |
     132 | TJ
                                                                                             NUL
                 Olson
     121 |
L \mid
                50 |
                          | JMALLIN | 650.127.1934 | 1996-06-14 | ST CLERK | 3300.00 |
     133 | Jason
                 Mallin
                                                                                             NU
LL |
       122 |
                  50 |
     134 | Michael | Rogers
                             | MROGERS | 650.127.1834 | 1998-08-26 | ST CLERK | 2900.00 |
          122 |
NULL |
                     50 |
                          | KGEE | 650.127.1734 | 1999-12-12 | ST CLERK | 2400.00 |
     135 | Ki
                                                                                        NULL |
                 Gee
   122 |
              50 |
                | Philtanker | HPHILTAN | 650.127.1634 | 2000-02-06 | ST CLERK | 2200.00 |
     136 | Hazel
                                                                                               N
       122 |
ULL |
                   50 |
                             | RLADWIG | 650.121.1234 | 1995-07-14 | ST CLERK | 3600.00 |
     137 | Renske
                   Ladwig
NULL |
          123 |
                     50 |
                          | SSTILES | 650.121.2034 | 1997-10-26 | ST CLERK | 3200.00 |
     138 | Stephen | Stiles
                                                                                             NUL
L \mid
     123 |
                50 |
     139 | John
                          | JSEO | 650.121.2019 | 1998-02-12 | ST CLERK | 2700.00 |
                                                                                          NULL |
                Seo
             50 |
   123 |
                           | JPATEL | 650.121.1834
     140 | Joshua
                  Patel
                                                    | 1998-04-06 | ST CLERK | 2500.00 |
                                                                                            NUL
     123 |
                50 |
L \mid
     141 | Trenna
                 Rais
                           TRAJS | 650.121.8009 | 1995-10-17 | ST CLERK | 3500.00 |
                                                                                            NULL
               50 |
     124 |
     142 | Curtis
                           | CDAVIES | 650.121.2994 | 1997-01-29 | ST CLERK | 3100.00 |
                                                                                              NU
                 Davies
LL | 124 |
                  50 |
                            | RMATOS | 650.121.2874 | 1998-03-15 | ST CLERK | 2600.00 |
                                                                                              N
     143 | Randall
                 Matos
        124 |
ULL |
                   50 |
                           | PVARGAS | 650.121.2004 | 1998-07-09 | ST CLERK | 2500.00 |
     144 | Peter
                 | Vargas
                                                                                              NU
LL |
       124 |
                  50 |
     145 | John
                 Russell
                           | JRUSSEL | 011.44.1344.429268 | 1996-10-01 | SA MAN | 14000.00 |
                                                                                               0.
40 |
      100 |
                 80 |
     146 | Karen
                  | Partners | KPARTNER | 011.44.1344.467268 | 1997-01-05 | SA MAN | 13500.00 |
 0.30 | 100 |
                    80 |
     147 | Alberto | Errazuriz | AERRAZUR | 011.44.1344.429278 | 1997-03-10 | SA MAN | 12000.00 |
```

```
0.30
          100 |
     148 | Gerald
                    | Cambrault | GCAMBRAU | 011.44.1344.619268 | 1999-10-15 | SA MAN | 11000.00 |
    0.30
            100
                        80 |
     149 | Eleni
                   | Zlotkey
                             | EZLOTKEY | 011.44.1344.429018 | 2000-01-29 | SA MAN | 10500.00 |
          100 |
                     80 |
0.20
     150 | Peter
                   | Tucker
                             | PTUCKER | 011.44.1344.129268 | 1997-01-30 | SA REP | 10000.00 |
                                                                                                      0.
30 |
       145 |
                   80 |
     151 | David
                   | Bernstein | DBERNSTE | 011.44.1344.345268 | 1997-03-24 | SA REP
0.25
        145 |
                    80 |
                            | PHALL | 011.44.1344.478968 | 1997-08-20 | SA REP | 9000.00 |
     152 | Peter
                   | Hall
                                                                                                  0.25
    145 |
               80 |
                               | COLSEN | 011.44.1344.498718 | 1998-03-30 | SA REP
     153 | Christopher | Olsen
                                                                                                       0
.20
        145 |
                   | Cambrault | NCAMBRAU | 011.44.1344.987668 | 1998-12-09 | SA_REP
     154 | Nanette
  0.20
           145 |
                      80 |
                             OTUVAULT | 011.44.1344.486508 | 1999-11-23 | SA REP | 7000.00 |
     155 | Oliver
                   | Tuvault
         145 |
0.15
                    80 |
     156 | Janette
                             JKING | 011.44.1345.429268 | 1996-01-30 | SA REP | 10000.00 |
                                                                                                   0.35
                   King
    146
               80 |
     157 | Patrick
                   Sully
                             | PSULLY | 011.44.1345.929268 | 1996-03-04 | SA REP
                                                                                                    0.35
                80 |
     146
     158 | Allan
                   | McEwen
                               | AMCEWEN | 011.44.1345.829268 | 1996-08-01 | SA REP
 0.35
          146
                     80 |
     159 | Lindsey
                              | LSMITH | 011.44.1345.729268 | 1997-03-10 | SA REP
                                                                                     | 8000.00 |
                                                                                                     0.3
                    Smith
0 |
      146 |
                 80 |
     160 | Louise
                   Doran
                              | LDORAN | 011.44.1345.629268 | 1997-12-15 | SA REP
                                                                                      | 7500.00 |
                                                                                                      0.
30 |
       146 |
                   80 |
                              | SSEWALL | 011.44.1345.529268 | 1998-11-03 | SA REP
                                                                                                      0.
     161 | Sarath
                   Sewall
                                                                                      | 7000.00 |
25 |
       146 |
                   80 |
     162 | Clara
                              | CVISHNEY | 011.44.1346.129268 | 1997-11-11 | SA REP
                                                                                      | 10500.00 |
                   | Vishney
         147 |
0.25
                    80 |
     163 | Danielle | Greene
                              | DGREENE | 011.44.1346.229268 | 1999-03-19 | SA REP
                                                                                       | 9500.00 |
         147 |
                    80 |
0.15
                               | MMARVINS | 011.44.1346.329268 | 2000-01-24 | SA REP
     164 | Mattea
                    | Marvins
0.10
         147 |
                     80 |
                                                                                                  0.10
                             | DLEE | 011.44.1346.529268 | 2000-02-23 | SA REP | 6800.00 |
     165 | David
                    Lee
    147 |
               80 |
     166 | Sundar
                              | SANDE | 011.44.1346.629268 | 2000-03-24 | SA REP | 6400.00 |
                                                                                                     0.1
                    Ande
0 |
      147 |
                 80 |
                              | ABANDA | 011.44.1346.729268 | 2000-04-21 | SA REP
                                                                                                      0.
     167 | Amit
                   Banda
                                                                                      | 6200.00 |
10 |
      147 |
                   80 |
     168 | Lisa
                  Ozer
                            | LOZER | 011.44.1343.929268 | 1997-03-11 | SA REP | 11500.00 |
                                                                                                   0.25
    148 |
               80 |
                               | HBLOOM | 011.44.1343.829268 | 1998-03-23 | SA_REP
     169 | Harrison | Bloom
0.20
         148 |
                    80 |
                             TFOX | 011.44.1343.729268 | 1998-01-24 | SA REP
                                                                                                  0.20
     170 | Tayler
                   | Fox
                                                                                 | 9600.00 |
    148 |
              80 |
     171 | William
                   Smith
                              | WSMITH | 011.44.1343.629268 | 1999-02-23 | SA REP
                                                                                      | 7400.00 |
                                                                                                      0.
15 |
      148 |
                   80 |
     172 | Elizabeth | Bates
                              | EBATES | 011.44.1343.529268 | 1999-03-24 | SA REP | 7300.00 |
                                                                                                     0.1
5 |
                 80 |
      148 |
     173 | Sundita
                   Kumar
                               | SKUMAR | 011.44.1343.329268 | 2000-04-21 | SA REP
        148 |
                   80 |
.10
                            | EABEL | 011.44.1644.429267 | 1996-05-11 | SA REP | 11000.00 |
     174 | Ellen
                   Abel
                                                                                                    0.30
```

```
149 |
               80 |
     175 | Alyssa
                  Hutton
                             | AHUTTON | 011.44.1644.429266 | 1997-03-19 | SA REP
                                                                                   | 8800.00 |
.25 |
      149 |
                  80 |
     176 | Jonathon | Taylor
                             | JTAYLOR | 011.44.1644.429265 | 1998-03-24 | SA REP
                                                                                   | 8600.00 |
                                                                                                   0
        149 |
.20
                  80 |
                  | Livingston | JLIVINGS | 011.44.1644.429264 | 1998-04-23 | SA REP | 8400.00 |
     177 | Jack
                                                                                                  0.
20 |
      149 |
                  80 |
     178 | Kimberely | Grant
                              | KGRANT | 011.44.1644.429263 | 1999-05-24 | SA REP
                                                                                    | 7000.00 |
0.15
        149 |
                  NULL |
     179 | Charles | Johnson
                             | CJOHNSON | 011.44.1644.429262 | 2000-01-04 | SA REP
        149 |
                   80 |
0.10
                             | WTAYLOR | 650.507.9876 | 1998-01-24 | SH CLERK | 3200.00 |
     180 | Winston | Taylor
          120 |
                     50 |
NULL |
     181 | Jean
                 | Fleaur
                           | JFLEAUR | 650.507.9877 | 1998-02-23 | SH CLERK | 3100.00 |
                                                                                                NUL
      120 |
                 50 |
L \mid
                 | Sullivan | MSULLIVA | 650.507.9878
                                                         | 1999-06-21 | SH CLERK | 2500.00 |
     182 | Martha
          120 |
                     50 |
NULL |
     183 | Girard
                  | Geoni
                            | GGEONI | 650.507.9879 | 2000-02-03 | SH CLERK | 2800.00 |
                                                                                                NU
LL |
       120 |
                  50 |
                  | Sarchand | NSARCHAN | 650.509.1876 | 1996-01-27 | SH CLERK | 4200.00 |
     184 | Nandita
          121 |
NULL |
                      50 |
                           | ABULL | 650.509.2876 | 1997-02-20 | SH CLERK | 4100.00 |
     185 | Alexis
                  Bull
                                                                                              NUL
L \mid
     121
                 50 |
                 | Dellinger | JDELLING | 650.509.3876 | 1998-06-24 | SH CLERK | 3400.00 |
     186 | Julia
                                                                                                 NU
LL |
       121 |
                  50 |
     187 | Anthony | Cabrio
                             | ACABRIO | 650.509.4876 | 1999-02-07 | SH CLERK | 3000.00 |
                                                                                                  N
ULL |
         121 |
                    50 |
     188 | Kelly
                            | KCHUNG | 650.505.1876
                                                        | 1997-06-14 | SH CLERK | 3800.00 |
                                                                                                 N
                  Chung
ULL |
         122 |
                    50 |
     189 | Jennifer | Dilly
                            | JDILLY | 650.505.2876 | 1997-08-13 | SH CLERK | 3600.00 |
                                                                                               NUL
     122 |
                 50 |
     190 | Timothy | Gates
                             | TGATES | 650.505.3876 | 1998-07-11 | SH CLERK | 2900.00 |
                                                                                                 N
ULL |
        122 |
                    50 |
     191 | Randall
                   Perkins
                             | RPERKINS | 650.505.4876
                                                        | 1999-12-19 | SH CLERK | 2500.00 |
                                                                                                  N
ULL |
        122 |
                    50 |
                           | SBELL | 650.501.1876 | 1996-02-04 | SH CLERK | 4000.00 |
                                                                                              NULL
     192 | Sarah
                  Bell
    123 |
               50 |
                           | BEVERETT | 650.501.2876 | 1997-03-03 | SH CLERK | 3900.00 |
                                                                                                  N
     193 | Britney | Everett
         123 |
                    50 |
ULL |
     194 | Samuel
                   | McCain
                              | SMCCAIN | 650.501.3876
                                                          | 1998-07-01 | SH CLERK | 3200.00 |
          123 |
                     50 |
NULL |
     195 | Vance
                   Jones
                            | VJONES | 650.501.4876 | 1999-03-17 | SH CLERK | 2800.00 |
                                                                                                NU
        123 |
LL |
                  50 |
                            | AWALSH | 650.507.9811
                                                        | 1998-04-24 | SH CLERK | 3100.00 |
     196 | Alana
                  | Walsh
                                                                                                 N
ULL |
         124 |
                    50 |
     197 | Kevin
                             | KFEENEY | 650.507.9822
                                                        | 1998-05-23 | SH CLERK | 3000.00 |
                                                                                                  N
                   Feeney
         124 |
                    50 |
ULL |
    198 | Donald
                   | OConnell | DOCONNEL | 650.507.9833 | 1999-06-21 | SH CLERK | 2600.00 |
           124 |
 NULL |
                      50 |
     199 | Douglas
                   Grant
                             | DGRANT | 650.507.9844 | 2000-01-13 | SH CLERK | 2600.00 |
                                                                                                  N
         124
                    50 |
ULL |
     200 | Jennifer | Whalen
                             | JWHALEN | 515.123.4444 | 1987-09-17 | AD ASST | 4400.00 |
                                                                                                  N
ULL |
         101 |
                    10 |
                  | Hartstein | MHARTSTE | 515.123.5555 | 1996-02-17 | MK MAN | 13000.00 |
     201 | Michael
```

```
NULL | 100 |
                   20 |
    202 | Pat
               | Fay
                       | PFAY | 603.123.6666 | 1997-08-17 | MK REP | 6000.00 |
                                                                                NULL |
  201 |
           20 |
    203 | Susan
                         | SMAVRIS | 515.123.7777
                                                  | 1994-06-07 | HR REP
                                                                     | 6500.00 |
                                                                                    NUL
                Mavris
     101 |
L \mid
               40 |
    204 | Hermann | Baer
                          | HBAER | 515.123.8888
                                                  | 1994-06-07 | PR REP | 10000.00 |
                                                                                    NUL
L \mid
     101 |
               70 |
    205 | Shelley | Higgins
                         | SHIGGINS | 515.123.8080
                                                  | 1994-06-07 | AC MGR | 12000.00 |
                                                                                      N
ULL | 101 |
                 110
    206 | William
                Gietz
                         | WGIETZ | 515.123.8181 | 1994-06-07 | AC ACCOUNT | 8300.00 |
NULL | 205 |
                110 |
----+
107 rows in set (0.00 sec)
mysql> show tables;
+----+
| Tables in hr db |
+----+
countries
departments
emp details view
| employees |
| job history
jobs
locations
regions
+----+
8 rows in set (0.00 \text{ sec})
mysql> select * from departments;
+----+
| department id | department name | manager id | location id |
+-----+
      10 | Administration
                           200 |
                                   1700 |
      20 | Marketing
                           201 |
                                  1800
      30 | Purchasing
                           114 |
                                  1700 |
      40 | Human Resources
                              203 |
                                     2400
      50 | Shipping
                          121 |
                                  1500
      60 | IT
                        103 |
                               1400
      70 | Public Relations |
                            204 |
                                   2700 |
      80 | Sales
                         145 |
                                2500 |
      90 | Executive
                          100
                                  1700 |
     100 | Finance
                          108 |
                                  1700 |
     110 | Accounting
                      205 |
                                   1700 |
     120 | Treasury
                          NULL |
                                    1700 |
     130 | Corporate Tax
                      | NULL|
                                     1700
     140 | Control And Credit | NULL |
                                       1700 |
     150 | Shareholder Services | NULL | 1700 |
     160 | Benefits
                         NULL |
                                   1700 |
     170 | Manufacturing | NULL |
                                     1700
     180 | Construction
                           NULL |
                                     1700 |
     190 | Contracting
                           NULL |
                                     1700 |
     200 | Operations
                           NULL |
                                    1700 |
```

```
210 | IT Support
                            NULL |
                                      1700 |
     220 | NOC
                           NULL |
                                     1700 |
     230 | IT Helpdesk
                            NULL |
                                       1700 |
                          | NULL | 1700 |
     240 | Government Sales
     250 | Retail Sales
                            NULL |
                                      1700 |
     260 | Recruiting
                           NULL |
                                      1700 |
     270 | Payroll
                          NULL |
                                     1700 |
    -----+----
27 rows in set (0.00 sec)
mysql> select manager id from departments;
+----+
| manager id |
+----+
   NULL |
   NULL |
   NULL
   NULL |
   NULL |
   NULL
   NULL |
   NULL |
   NULL
   NULL |
   NULL
   NULL
   NULL |
   NULL |
   NULL |
   NULL |
    100
    103
    108
    114
    121
    145
    200
    201
    203
    204
    205 |
+----+
27 rows in set (0.04 sec)
mysql> select first_name, last_name, manager id from employees;
+----+
| first name | last name | manager id |
+----+
Steven
         King
                      NULL |
         | Kochhar
Neena
                       100 |
Lex
        De Haan
                       100 |
| Alexander | Hunold | 102 |
         Ernst
Bruce
                      103 |
David
                      103 |
         Austin
```

	Valli Pataballa 103
	Diana Lorentz 103
ĺ	Nancy Greenberg 101
	Daniel Faviet 108
	John Chen 108
	Ismael Sciarra 108
	1 1
	·
	Luis Popp 108
	Den Raphaely 100
	Alexander Khoo 114
	Shelli Baida 114
	Sigal Tobias 114
	Guy Himuro 114
	Karen Colmenares 114
	Matthew Weiss 100
ĺ	Adam Fripp 100
ĺ	Payam Kaufling 100
	Shanta Vollman 100
	Kevin Mourgos 100
	Julia Nayer 120
	Irene Mikkilineni 120
	James Landry 120
	Steven Markle 120
	Laura Bissot 121
	Mozhe Atkinson 121
	James Marlow 121
	TJ Olson 121
	Jason Mallin 122
	Michael Rogers 122
	Ki Gee 122
	Hazel Philtanker 122
	Renske Ladwig 123
	Stephen Stiles 123
ĺ	John Seo 123
ĺ	Joshua Patel 123
	Trenna Rajs 124
	Curtis Davies 124
	Randall Matos 124
	Peter Vargas 124
	John Russell 100
	Karen Partners 100
	Gerald Cambrault 100
	Eleni Zlotkey 100
	Peter Tucker 145
	David Bernstein 145
	Peter Hall 145
	Christopher Olsen 145
	Nanette Cambrault 145
	Oliver Tuvault 145
	Janette King 146
	Patrick Sully 146
	Allan McEwen 146
ĺ	Lindsey Smith 146
	- '

Louise Doran 146
Sarath Sewall 146
Clara Vishney 147
Danielle Greene 147
Mattea Marvins 147
David Lee 147
Sundar Ande 147
Amit Banda 147
Lisa Ozer 148
Harrison Bloom 148
• • • • • • • • • • • • • • • • • • • •
Tayler Fox 148
William Smith 148
Elizabeth Bates 148
Sundita Kumar 148
Ellen Abel 149
Alyssa Hutton 149
Jonathon Taylor 149
Jack Livingston 149
, , , , , , , , , , , , , , , , , , , ,
Kimberely Grant 149
Charles Johnson 149
Winston Taylor 120
Jean Fleaur 120
Martha Sullivan 120
Girard Geoni 120
Nandita Sarchand 121
Alexis Bull 121
Julia Dellinger 121
Anthony Cabrio 121
Kelly Chung 122
Jennifer Dilly 122
Timothy Gates 122
Randall Perkins 122
Sarah Bell 123
Britney Everett 123
Samuel McCain 123
Vance Jones 123 Alana Walsh 124
Alana Walsh 124
Kevin Feeney 124
Donald OConnell 124
Douglas Grant 124
Jennifer Whalen 101
Michael Hartstein 100
Pat Fay 201
Hermann Baer 101 Shelley Higgins 101
Shelley Higgins 101
William Gietz 205
++
107 rows in set (0.00 sec)
mysql> select location_id from departments
++
location_id
++

```
1400 |
    1500
    1700
    1700
    1700
    1700
    1700
    1700
    1700
    1700
    1700 |
    1700
    1700
    1700
    1700
    1700
    1700
    1700
    1700
    1700
    1700
    1700
    1700
    1800
    2400
    2500
    2700 |
+----+
27 rows in set (0.00 sec)
mysql> select location_id from locations;
+----+
| location id |
+----+
    1000 |
    1100
    1200
    1300
    1400
    1500
    1600
    1700
    1800
    1900
    2000
    2100
    2200
    2300
    2400
    2500
    2600
    2700
    2800
```

2900 |

```
3000 |
    3100
    3200 |
   ----+
23 rows in set (0.01 sec)
mysql> select location id from countries;
ERROR 1054 (42S22): Unknown column 'location id' in 'field list'
mysql> select country_id from countries;
+----+
| country id |
+----+
| BE
| CH
DE
DK
FR
IT 
NL
UK
AR
BR
CA
MX
US
AU
CN
HK
IN
JP
SG
EG
IL
KW
NG
ZM
| ZW
25 rows in set (0.01 sec)
mysql> select D.location id, L.location id
  -> from departments
ERROR 1054 (42S22): Unknown column 'D.location_id' in 'field list'
mysql> select D.location id, L.location id
  -> from departments D
  -> join locations L
  -> on D.location_id = L.location_id;
+----+
| location_id | location_id |
+----+
     1400 |
              1400 |
     1500 |
              1500
     1700 |
              1700 |
```

```
1700
             1700
    1700
              1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700 |
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1700
             1700
    1800
             1800
    2400 |
             2400
    2500 |
             2500
    2700 |
             2700 |
27 rows in set (0.00 sec)
mysql> select D.location id, L.location id, L.country id
  -> from departments
  ->:
ERROR 1054 (42S22): Unknown column 'D.location id' in 'field list'
mysql> select L.location id, L.country id, D.location id, count(*)
  -> from locations L
  -> join departments D
  -> on L.location id = D.location id;
+----+
| location id | country id | location id | count(*) |
+----+
    1400 | US
                     1400 |
+----+
1 row in set (0.00 \text{ sec})
mysql> select country name, city, department name
  -> from countries
  -> join locations using (country id)
  -> join departments using (location id);
+-----+
| country_name
                   city
                               | department name
| United States of America | Seattle
                                   | Administration
                | Toronto | Marketing
Canada
United States of America | Seattle
                                  | Purchasing
United Kingdom
                    London
                                  | Human Resources
United States of America | South San Francisco | Shipping
```

United States of America	Southlake	IT				
Germany Mun	•	blic Relations	•			
United Kingdom O	Oxford	Sales				
United States of America	Seattle	Executive				
United States of America	Seattle	Finance				
United States of America	Seattle	Accounting				
United States of America	Seattle	Treasury				
United States of America	Seattle	Corporate Tax				
United States of America	Seattle	Control And Cre	edit			
United States of America	Seattle	Shareholder Serv	vices			
United States of America	Seattle	Benefits				
United States of America	Seattle	Manufacturing				
United States of America	•	Construction				
United States of America	Seattle	Contracting				
United States of America	•	Operations				
United States of America	!	IT Support				
United States of America	•	NOC				
United States of America	•	IT Helpdesk				
United States of America	!	Government Sal	es			
United States of America	•	Retail Sales				
United States of America	•	Recruiting				
United States of America		Payroll				
+	ne, city, departr country_id) g (location_id);	nent_name , coun				
++ country_name						
United States of America Seattle Administration 27						
1 row in set (0.01 sec)						
mysql> Assignment 1 SQl	I done:					
mysqi/ Assigningii I SQ!	L UUIIE,					

mysql> Assignment_1_SQL_done; ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL s erver version for the right syntax to use near 'Assignment_1_SQL_done' at line 1 mysql>