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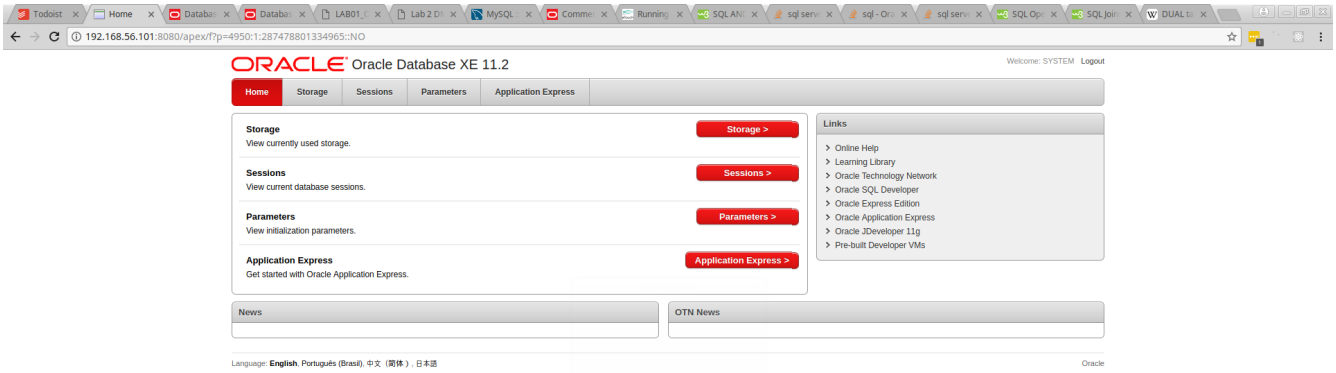
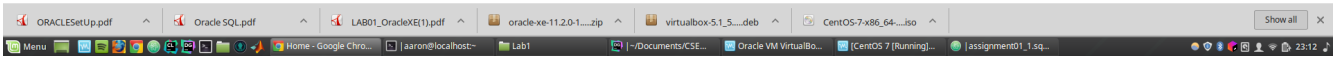
# CSE 572 – LAB 1

0. To install Oracle DB XE on my computer I followed a hybrid approach, creating a CentOS 7 VM, installing the database as described there, and then setting up a hosts-only network adapter so I can access ports outside of the VM. I also had to add a few configurations to the firewall. This allows me to SSH into my CentOS 7 VM as well as access the DB from a browser.

1.1. I cannot access the Oracle Database XE Desktop GUI because I did not install a Windows Manager on the VM. If this is needed at some point I'm sure I can fix this.

1.2. I can access the website homepage via my hosts only adapter on the same local machine. The following is a screenshot from this:

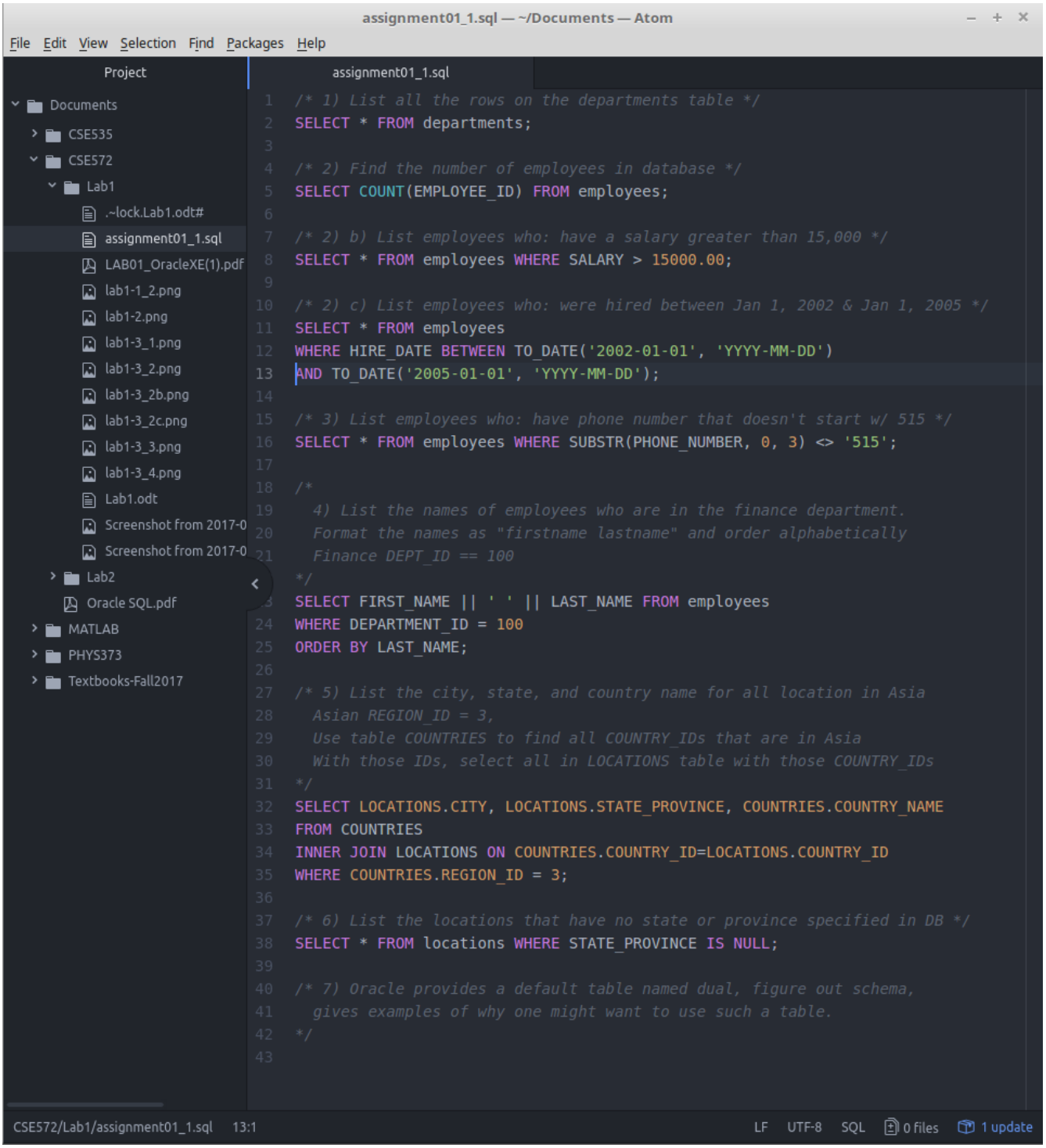



2. To unlock the sample user account, I SSHed into my VM and then ran the commands listed in this section, this screen shot showing that it worked.

```
[aaron@localhost ~]$ sqlplus hr

SQL*Plus: Release 11.2.0.2.0 Production on Fri Sep 29 21:13:11 2017

Copyright (c) 1982, 2011, Oracle.  All rights reserved.

Enter password:

Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production

SQL> SELECT table_name FROM user_tables;

TABLE_NAME
------------------------------
REGIONS
LOCATIONS
DEPARTMENTS
JOBS
EMPLOYEES
JOB_HISTORY
COUNTRIES

7 rows selected.

SQL>
```

3. Finally, I created an SQL file with the requested requirements, each result has a screen shot below as listed by the problem itself. Here is the code executed for all statements:



1) List all the rows of the departments table

Output | HR.DEPARTMENTS

27 rows

| | DEPARTMENT_ID | DEPARTMENT_NAME | MANAGER_ID | LOCATION_ID |
|---|---|---|---|---|
| 1 | 10 | Administration | 200 | 1700 |
| 2 | 20 | Marketing | 201 | 1800 |
| 3 | 30 | Purchasing | 114 | 1700 |
| 4 | 40 | Human Resources | 203 | 2400 |
| 5 | 50 | Shipping | 121 | 1500 |
| 6 | 60 | IT | 103 | 1400 |
| 7 | 70 | Public Relations | 204 | 2700 |
| 8 | 80 | Sales | 145 | 2500 |
| 9 | 90 | Executive | 100 | 1700 |
| 10 | 100 | Finance | 108 | 1700 |
| 11 | 110 | Accounting | 205 | 1700 |
| 12 | 120 | Treasury | <null> | 1700 |
| 13 | 130 | Corporate Tax | <null> | 1700 |
| 14 | 140 | Control And Credit | <null> | 1700 |
| 15 | 150 | Shareholder Services | <null> | 1700 |
| 16 | 160 | Benefits | <null> | 1700 |
| 17 | 170 | Manufacturing | <null> | 1700 |
| 18 | 180 | Construction | <null> | 1700 |
| 19 | 190 | Contracting | <null> | 1700 |
| 20 | 200 | Operations | <null> | 1700 |
| 21 | 210 | IT Support | <null> | 1700 |
| 22 | 220 | NOC | <null> | 1700 |
| 23 | 230 | IT Helpdesk | <null> | 1700 |
| 24 | 240 | Government Sales | <null> | 1700 |
| 25 | 250 | Retail Sales | <null> | 1700 |
| 26 | 260 | Recruiting | <null> | 1700 |
| 27 | 270 | Payroll | <null> | 1700 |

27 rows retrieved starting from 1 in 64ms (execution: 27ms, fetching: 37ms)

2a) Find the number of employees in the database:

Output | COUNT(EMPLOYEE_ID):number

1 row

| | "COUNT(EMPLOYEE_ID)" |
|---|---|
| 1 | 107 |

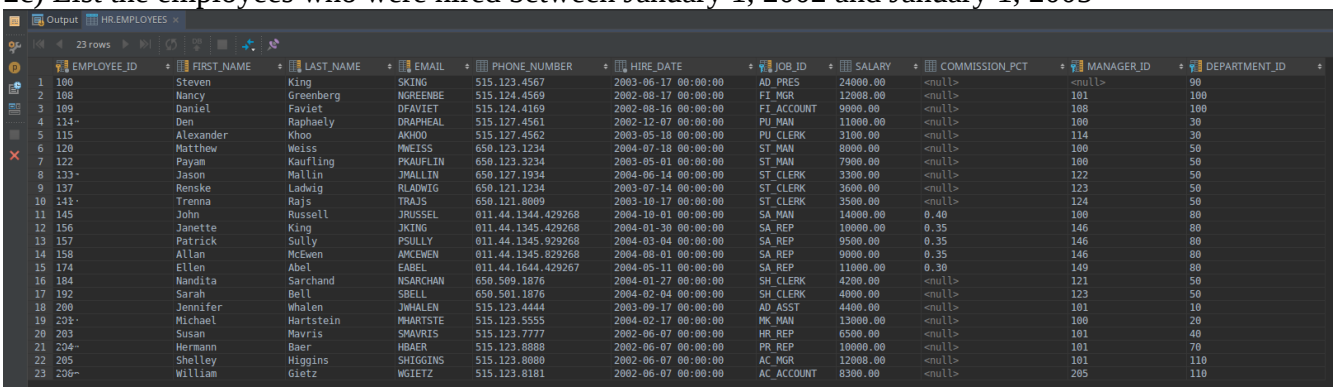
2b) List the employees who have a salary greater than 15,000:

Output | HR.EMPLOYEES

3 rows

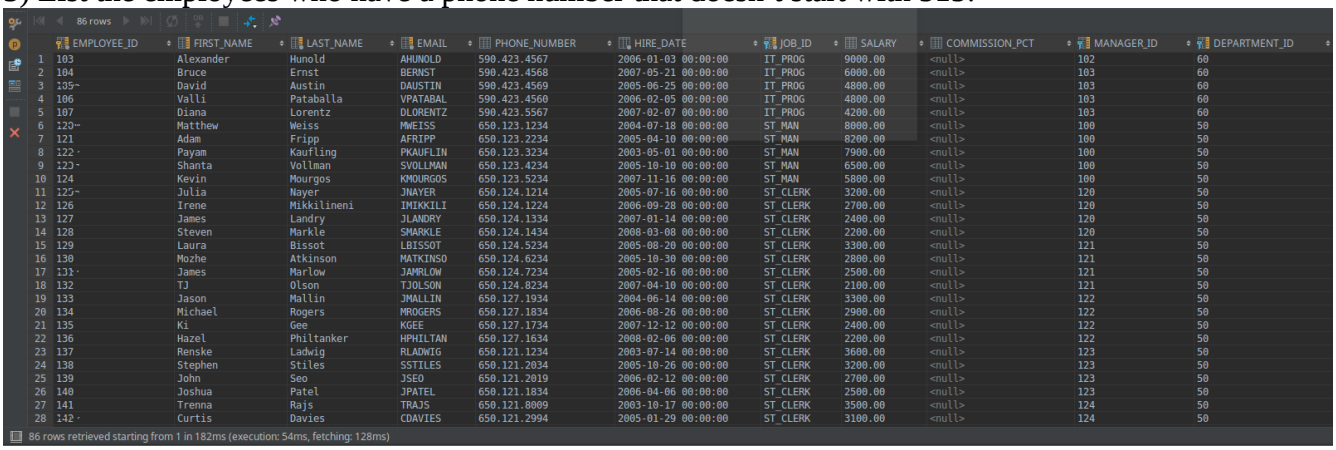
| | EMPLOYEE_ID | FIRST_NAME | LAST_NAME | EMAIL | PHONE_NUMBER | HIRE_DATE | JOB_ID | SALARY | COMMISSION_PCT | MANAGER_ID | DEPARTMENT_ID |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 100 | Steven | King | SKING | 515.123.4567 | 2003-06-17 00:00:00 | AD_PRES | 24000.00 | <null> | <null> | 90 |
| 2 | 101 | Neena | Kochhar | NKOCHHAR | 515.123.4568 | 2005-09-21 00:00:00 | AD_VP | 17000.00 | <null> | 100 | 90 |
| 3 | 102 | Lex | De Haan | LDEHAAN | 515.123.4569 | 2001-01-13 00:00:00 | AD_VP | 17000.00 | <null> | 100 | 90 |

2c) List the employees who were hired between January 1, 2002 and January 1, 2005



| | EMPLOYEE_ID | FIRST_NAME | LAST_NAME | EMAIL | PHONE_NUMBER | HIRE_DATE | JOB_ID | SALARY | COMMISSION_PCT | MANAGER_ID | DEPARTMENT_ID |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 100 | Steven | King | SKING | 515.123.4567 | 2003-06-17 00:00:00 | AD_PRES | 24000.00 | <null> | <null> | 90 |
| 2 | 108 | Nancy | Greenberg | NGREENBE | 515.124.4569 | 2002-08-17 00:00:00 | FI_MGR | 12008.00 | <null> | 101 | 100 |
| 3 | 109 | Daniel | Faviet | DFAVIET | 515.124.4169 | 2002-08-16 00:00:00 | FI_ACCOUNT | 9000.00 | <null> | 108 | 100 |
| 4 | 114 | Den | Raphaely | DRAPHEAL | 515.127.4561 | 2002-12-07 00:00:00 | PU_MAN | 11000.00 | <null> | 100 | 30 |
| 5 | 115 | Alexander | Khoo | AKHOO | 515.127.4562 | 2003-05-18 00:00:00 | PU_CLERK | 3100.00 | <null> | 114 | 30 |
| 6 | 120 | Matthew | Weiss | MWEISS | 650.123.1234 | 2004-07-18 00:00:00 | ST_MAN | 8000.00 | <null> | 100 | 50 |
| 7 | 122 | Payam | Kaufling | PKAUFLIN | 650.123.3234 | 2003-05-01 00:00:00 | ST_MAN | 7900.00 | <null> | 100 | 50 |
| 8 | 123 | Jason | Mallin | JMALLIN | 650.127.1934 | 2004-06-14 00:00:00 | ST_CLERK | 3300.00 | <null> | 122 | 50 |
| 9 | 137 | Renske | Ladwig | RLADWIG | 650.121.1234 | 2003-07-14 00:00:00 | ST_CLERK | 3600.00 | <null> | 123 | 50 |
| 10 | 141 | Trenna | Rajs | TRAJS | 650.121.8009 | 2003-10-17 00:00:00 | ST_CLERK | 3500.00 | <null> | 124 | 50 |
| 11 | 145 | John | Russell | JRUSSEL | 011.44.1344.429268 | 2004-10-01 00:00:00 | SA_MAN | 14000.00 | 0.40 | 100 | 80 |
| 12 | 156 | Janette | King | JKING | 011.44.1345.429268 | 2004-01-30 00:00:00 | SA_REP | 10000.00 | 0.35 | 146 | 80 |
| 13 | 157 | Patrick | Sully | PSULLY | 011.44.1345.929268 | 2004-03-04 00:00:00 | SA_REP | 9500.00 | 0.35 | 146 | 80 |
| 14 | 158 | Allan | McEwen | AMCEWEN | 011.44.1345.829268 | 2004-08-01 00:00:00 | SA_REP | 9000.00 | 0.35 | 146 | 80 |
| 15 | 174 | Ellen | Abel | EABEL | 011.44.1644.429267 | 2004-05-11 00:00:00 | SA_REP | 11000.00 | 0.30 | 149 | 80 |
| 16 | 184 | Nandita | Sarchand | NSARCHAN | 650.509.1876 | 2004-01-27 00:00:00 | SH_CLERK | 4200.00 | <null> | 121 | 50 |
| 17 | 192 | Sarah | Bell | SBELL | 650.501.1876 | 2004-02-04 00:00:00 | SH_CLERK | 4000.00 | <null> | 123 | 50 |
| 18 | 200 | Jennifer | Whalen | JWHALEN | 515.123.4444 | 2003-09-17 00:00:00 | AD_ASST | 4400.00 | <null> | 101 | 10 |
| 19 | 201 | Michael | Hartstein | MHARTSTE | 515.123.5555 | 2004-02-17 00:00:00 | MK_MAN | 13000.00 | <null> | 100 | 20 |
| 20 | 203 | Susan | Mavris | SMAVRIS | 515.123.7777 | 2002-06-07 00:00:00 | HR_REP | 6500.00 | <null> | 101 | 40 |
| 21 | 204 | Hermann | Baer | HBAER | 515.123.8888 | 2002-06-07 00:00:00 | PR_REP | 10000.00 | <null> | 101 | 70 |
| 22 | 205 | Shelley | Higgins | SHIGGINS | 515.123.8080 | 2002-06-07 00:00:00 | AC_MGR | 12008.00 | <null> | 101 | 110 |
| 23 | 206 | William | Gietz | WGIETZ | 515.123.8181 | 2002-06-07 00:00:00 | AC_ACCOUNT | 8300.00 | <null> | 205 | 110 |

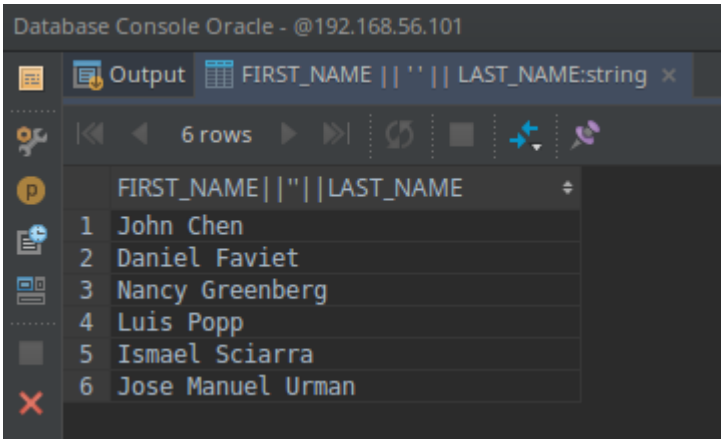
3) List the employees who have a phone number that doesn't start with 515:



| | EMPLOYEE_ID | FIRST_NAME | LAST_NAME | EMAIL | PHONE_NUMBER | HIRE_DATE | JOB_ID | SALARY | COMMISSION_PCT | MANAGER_ID | DEPARTMENT_ID |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 103 | Alexander | Hunold | AHUNOLD | 590.423.4567 | 2006-01-03 00:00:00 | IT_PROG | 9000.00 | <null> | 102 | 60 |
| 2 | 104 | Bruce | Ernst | BERNST | 590.423.4568 | 2007-05-21 00:00:00 | IT_PROG | 6000.00 | <null> | 103 | 60 |
| 3 | 105 | David | Austin | DAUSTIN | 590.423.4569 | 2005-06-25 00:00:00 | IT_PROG | 4800.00 | <null> | 103 | 60 |
| 4 | 106 | Valli | Pataballa | VPATABAL | 590.423.4560 | 2006-02-05 00:00:00 | IT_PROG | 4800.00 | <null> | 103 | 60 |
| 5 | 107 | Diana | Lorentz | DLORENTZ | 590.423.5567 | 2007-02-07 00:00:00 | IT_PROG | 4200.00 | <null> | 103 | 60 |
| 6 | 120 | Matthew | Weiss | MWEISS | 650.123.1234 | 2004-07-18 00:00:00 | ST_MAN | 8000.00 | <null> | 100 | 50 |
| 7 | 121 | Adam | Fripp | AFRIPP | 650.123.2234 | 2005-04-10 00:00:00 | ST_MAN | 8200.00 | <null> | 100 | 50 |
| 8 | 122 | Payam | Kaufling | PKAUFLIN | 650.123.3234 | 2003-05-01 00:00:00 | ST_MAN | 7900.00 | <null> | 100 | 50 |
| 9 | 123 | Shanta | Vollman | SVOLLMAN | 650.123.4234 | 2005-10-10 00:00:00 | ST_MAN | 6500.00 | <null> | 100 | 50 |
| 10 | 124 | Kevin | Mourgos | KMOURGOS | 650.123.5234 | 2007-11-16 00:00:00 | ST_MAN | 5800.00 | <null> | 100 | 50 |
| 11 | 125 | Julia | Nayer | JNAYER | 650.124.1214 | 2005-07-16 00:00:00 | ST_CLERK | 3200.00 | <null> | 120 | 50 |
| 12 | 126 | Irene | Mikkilineni | IMIKKILI | 650.124.1224 | 2006-09-28 00:00:00 | ST_CLERK | 2700.00 | <null> | 120 | 50 |
| 13 | 127 | James | Landry | JLANDRY | 650.124.1334 | 2007-01-14 00:00:00 | ST_CLERK | 2400.00 | <null> | 120 | 50 |
| 14 | 128 | Steven | Markle | SMARKLE | 650.124.1434 | 2008-03-08 00:00:00 | ST_CLERK | 2200.00 | <null> | 120 | 50 |
| 15 | 129 | Laura | Bissot | LBISSOT | 650.124.5234 | 2005-08-20 00:00:00 | ST_CLERK | 3300.00 | <null> | 121 | 50 |
| 16 | 130 | Mozhe | Atkinson | MATKINSO | 650.124.6234 | 2005-10-30 00:00:00 | ST_CLERK | 2800.00 | <null> | 121 | 50 |
| 17 | 131 | James | Marlow | JAMRLOW | 650.124.7234 | 2005-02-16 00:00:00 | ST_CLERK | 2500.00 | <null> | 121 | 50 |
| 18 | 132 | TJ | Olson | TJOLSON | 650.124.8234 | 2007-04-10 00:00:00 | ST_CLERK | 2100.00 | <null> | 121 | 50 |
| 19 | 133 | Jason | Mallin | JMALLIN | 650.127.1934 | 2004-06-14 00:00:00 | ST_CLERK | 3300.00 | <null> | 122 | 50 |
| 20 | 134 | Michael | Rogers | MROGERS | 650.127.1834 | 2006-08-26 00:00:00 | ST_CLERK | 2900.00 | <null> | 122 | 50 |
| 21 | 135 | Ki | Gee | KGEE | 650.127.1734 | 2007-12-12 00:00:00 | ST_CLERK | 2400.00 | <null> | 122 | 50 |
| 22 | 136 | Hazel | Philtanker | HPHILTAN | 650.127.1634 | 2008-02-06 00:00:00 | ST_CLERK | 2200.00 | <null> | 122 | 50 |
| 23 | 137 | Renske | Ladwig | RLADWIG | 650.121.1234 | 2003-07-14 00:00:00 | ST_CLERK | 3600.00 | <null> | 123 | 50 |
| 24 | 138 | Stephen | Stiles | SSTILES | 650.121.2034 | 2005-10-26 00:00:00 | ST_CLERK | 3200.00 | <null> | 123 | 50 |
| 25 | 139 | John | Seo | JSEO | 650.121.2019 | 2006-02-12 00:00:00 | ST_CLERK | 2700.00 | <null> | 123 | 50 |
| 26 | 140 | Joshua | Patel | JPATEL | 650.121.1834 | 2006-04-06 00:00:00 | ST_CLERK | 2500.00 | <null> | 123 | 50 |
| 27 | 141 | Trenna | Rajs | TRAJS | 650.121.8009 | 2003-10-17 00:00:00 | ST_CLERK | 3500.00 | <null> | 124 | 50 |
| 28 | 142 | Curtis | Davies | CDAVIES | 650.121.2994 | 2005-01-29 00:00:00 | ST_CLERK | 3100.00 | <null> | 124 | 50 |

86 rows retrieved starting from 1 in 182ms (execution: 54ms, fetching: 128ms)

4) List the names of the employees who are in the finance department. Try to format the names as "firstname lastname" using concatentation and order them alphabetically.



Database Console Oracle - @192.168.56.101

Output | FIRST_NAME || ' ' || LAST_NAME:string

6 rows

| | FIRST_NAME\|\|' '\|\|LAST_NAME |
|---|---|
| 1 | John Chen |
| 2 | Daniel Faviet |
| 3 | Nancy Greenberg |
| 4 | Luis Popp |
| 5 | Ismael Sciarra |
| 6 | Jose Manuel Urman |

5) List the city, state, and country name for all locations in the Asia Region

Database Console Oracle - @192.168.56.101

Output | Result 21

6 rows

| | CITY | STATE_PROVINCE | COUNTRY_NAME |
|---|---|---|---|
| 1 | Tokyo | Tokyo Prefecture | Japan |
| 2 | Hiroshima | <null> | Japan |
| 3 | Beijing | <null> | China |
| 4 | Bombay | Maharashtra | India |
| 5 | Sydney | New South Wales | Australia |
| 6 | Singapore | <null> | Singapore |

6) List the locations that have no state or province specified in the database.

Output | HR.LOCATIONS

6 rows

| | LOCATION_ID | STREET_ADDRESS | POSTAL_CODE | CITY | STATE_PROVINCE | COUNTRY_ID |
|---|---|---|---|---|---|---|
| 1 | 1000 | 1297 Via Cola di Rie | 00989 | Roma | <null> | IT |
| 2 | 1100 | 93091 Calle della Testa | 10934 | Venice | <null> | IT |
| 3 | 1300 | 9450 Kamiya-cho | 6823 | Hiroshima | <null> | JP |
| 4 | 2000 | 40-5-12 Laogianggen | 190518 | Beijing | <null> | CN |
| 5 | 2300 | 198 Clementi North | 540198 | Singapore | <null> | SG |
| 6 | 2400 | 8204 Arthur St | <null> | London | <null> | UK |

7) Finally, a discussion of the purpose of the DUAL table provided by Oracle. Specifically the table is found in SYS.DUAL. The table is a single Column of type VARCHAR2 called DUMMY with a single row of value ‘X’. Oracle’s SQL syntax requires the FROM keyword, and thus requires a table for all queries. One of the more common uses is to perform a SELECT query on a DB value such as USER or SYSDATE that isn’t actually present in the table itself.