Санкт-Петербургский Политехнический университет Петра Великого

Институт компьютерных наук и технологий

Кафедра компьютерных систем и программных технологий

Отчёт о лабораторной работе №4

Дисциплина: Базы данных

Тема: Язык SQL-DML

Выполнил студент гр. 43501/1 　　　　　　　　　Карандашов С.М.
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“ ” 　　　　　　2016 г.

Санкт-Петербург
2016

1. Цели работы

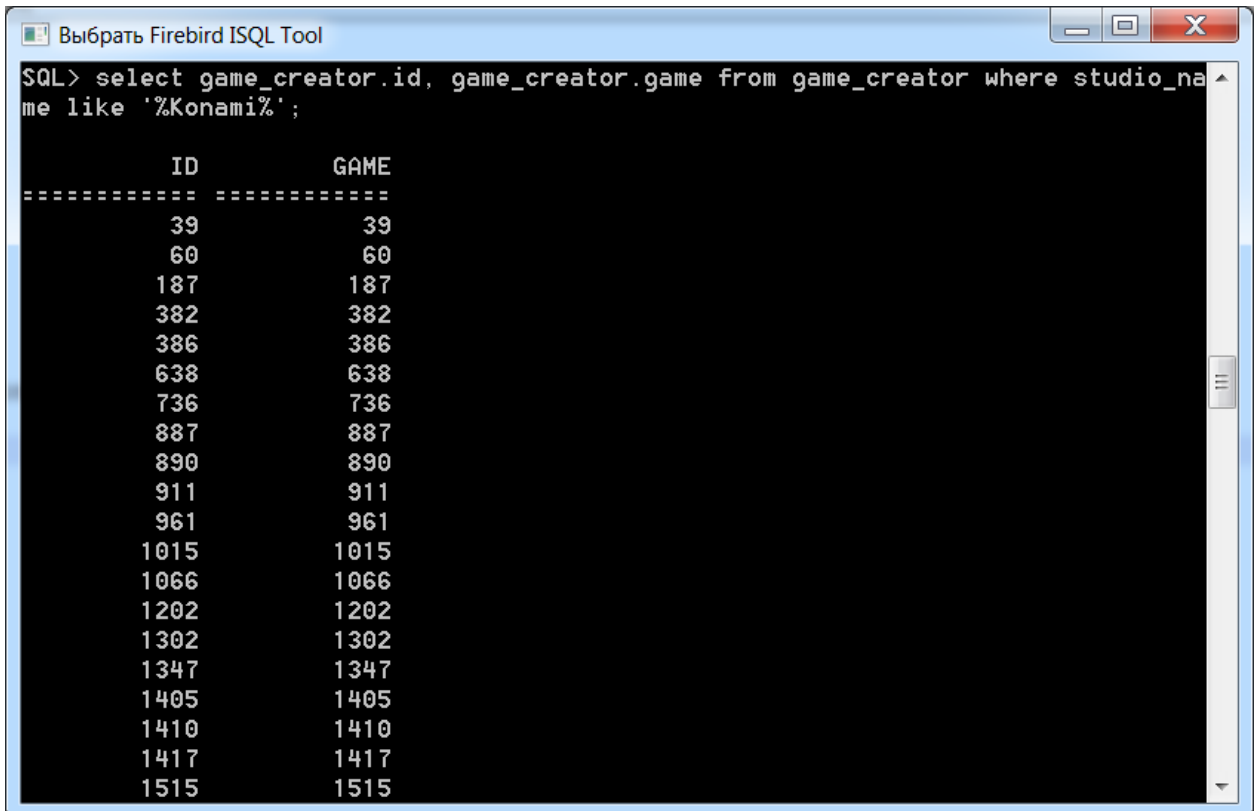Познакомить студентов с языком создания запросов управления данными SQL-DML.

2. Программа работы

1. Изучите SQL-DML
2. Выполните все запросы из списка стандартных запросов. Продемонстрируйте результаты преподавателю.
3. Получите у преподавателя и реализуйте SQL-запросы в соответствии с **индивидуальным** заданием. Продемонстрируйте результаты преподавателю.
   Индивидуальные:
   1. Вывести наиболее популярные жанры для каждой студии.
   2. Вывести 10 разработчиков, которые поучаствовали в разработки наибольшего количества игр от разных студий.
   3. Вывести 5 игр, участники турниров по которым получили наибольшие суммарные призовые.
4. Выполненные запросы SELECT сохраните в БД в виде представлений, запросы INSERT, UPDATE или DELETE -- в виде ХП. Выложите скрипт в Subversion.

3. Ход работы

```
select * from person;
select * from genres;
select * from game_name;
select * from studios;
select * from game_creator;
select * from professions;
select * from razrab;
select * from game_genre;
select * from gamers;
select * from contests;
select * from winners;
```

select game_creator.id, game_creator.game from game_creator where studio_name like '%Konami%';
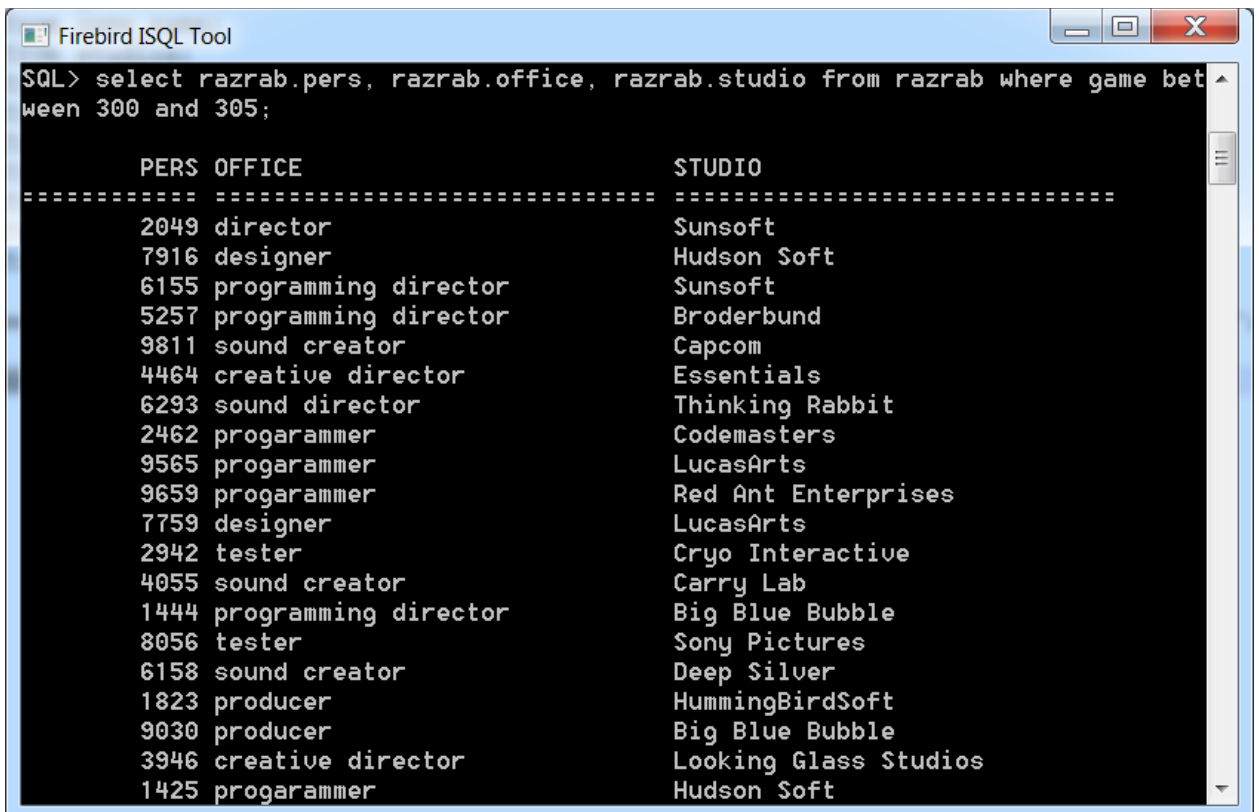
```
 Выбрать Firebird ISQL Tool                                          [_][□][X]

SQL> select game_creator.id, game_creator.game from game_creator where studio_na
me like '%Konami%';

          ID         GAME
============ ============
          39           39
          60           60
         187          187
         382          382
         386          386
         638          638
         736          736
         887          887
         890          890
         911          911
         961          961
        1015         1015
        1066         1066
        1202         1202
        1302         1302
        1347         1347
        1405         1405
        1410         1410
        1417         1417
        1515         1515
```

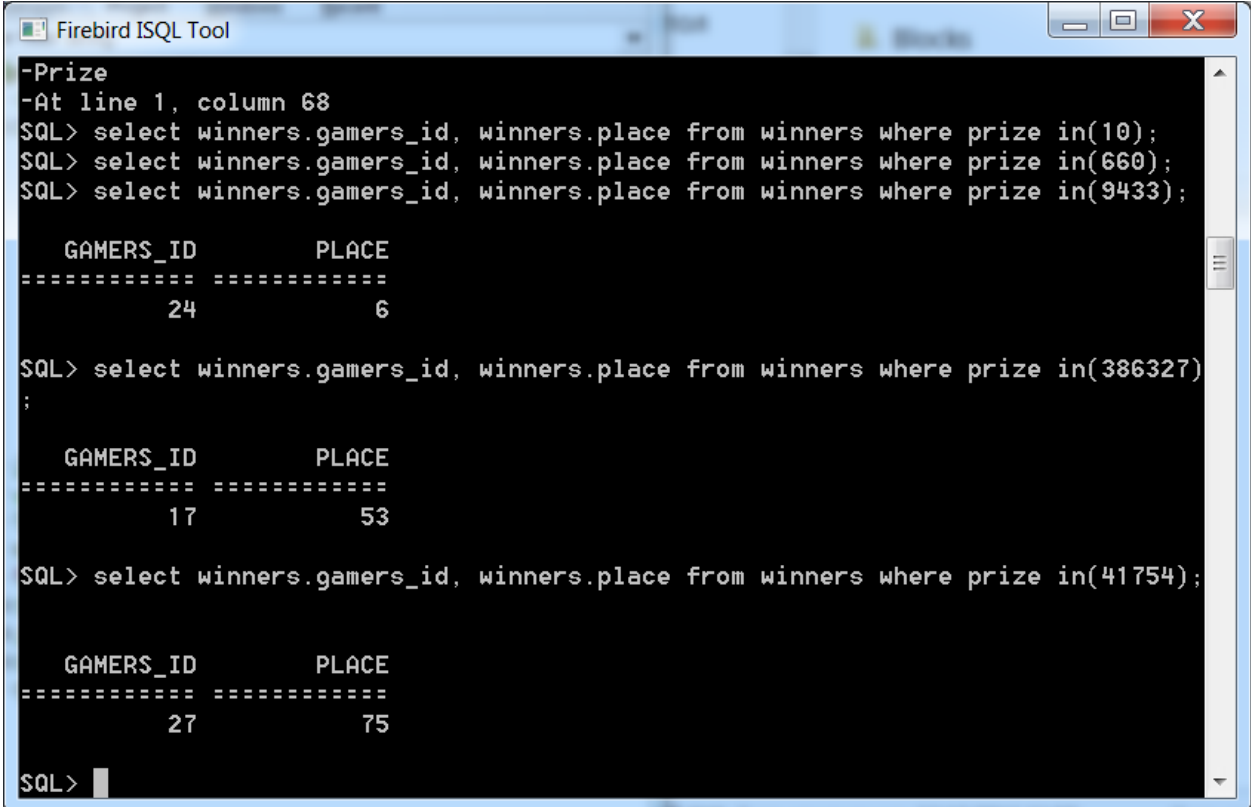select razrab.pers, razrab.office, razrab.studio from razrab where game between 300 and 305;

```
 Firebird ISQL Tool                                                  [_][□][X]

SQL> select razrab.pers, razrab.office, razrab.studio from razrab where game bet
ween 300 and 305;

        PERS OFFICE                         STUDIO
============ =============================== ================================
        2049 director                       Sunsoft
        7916 designer                       Hudson Soft
        6155 programming director           Sunsoft
        5257 programming director           Broderbund
        9811 sound creator                  Capcom
        4464 creative director              Essentials
        6293 sound director                 Thinking Rabbit
        2462 progarammer                    Codemasters
        9565 progarammer                    LucasArts
        9659 progarammer                    Red Ant Enterprises
        7759 designer                       LucasArts
        2942 tester                         Cryo Interactive
        4055 sound creator                  Carry Lab
        1444 programming director           Big Blue Bubble
        8056 tester                         Sony Pictures
        6158 sound creator                  Deep Silver
        1823 producer                       HummingBirdSoft
        9030 producer                       Big Blue Bubble
        3946 creative director              Looking Glass Studios
        1425 progarammer                    Hudson Soft
```

select winners.gamers_id, winners.place from winners where prize in(9433);

```
Firebird ISQL Tool                                                    _ □ X

-Prize
-At line 1, column 68
SQL> select winners.gamers_id, winners.place from winners where prize in(10);
SQL> select winners.gamers_id, winners.place from winners where prize in(660);
SQL> select winners.gamers_id, winners.place from winners where prize in(9433);

   GAMERS_ID        PLACE
============ ============
          24            6

SQL> select winners.gamers_id, winners.place from winners where prize in(386327)
;

   GAMERS_ID        PLACE
============ ============
          17           53

SQL> select winners.gamers_id, winners.place from winners where prize in(41754);


   GAMERS_ID        PLACE
============ ============
          27           75

SQL>
```
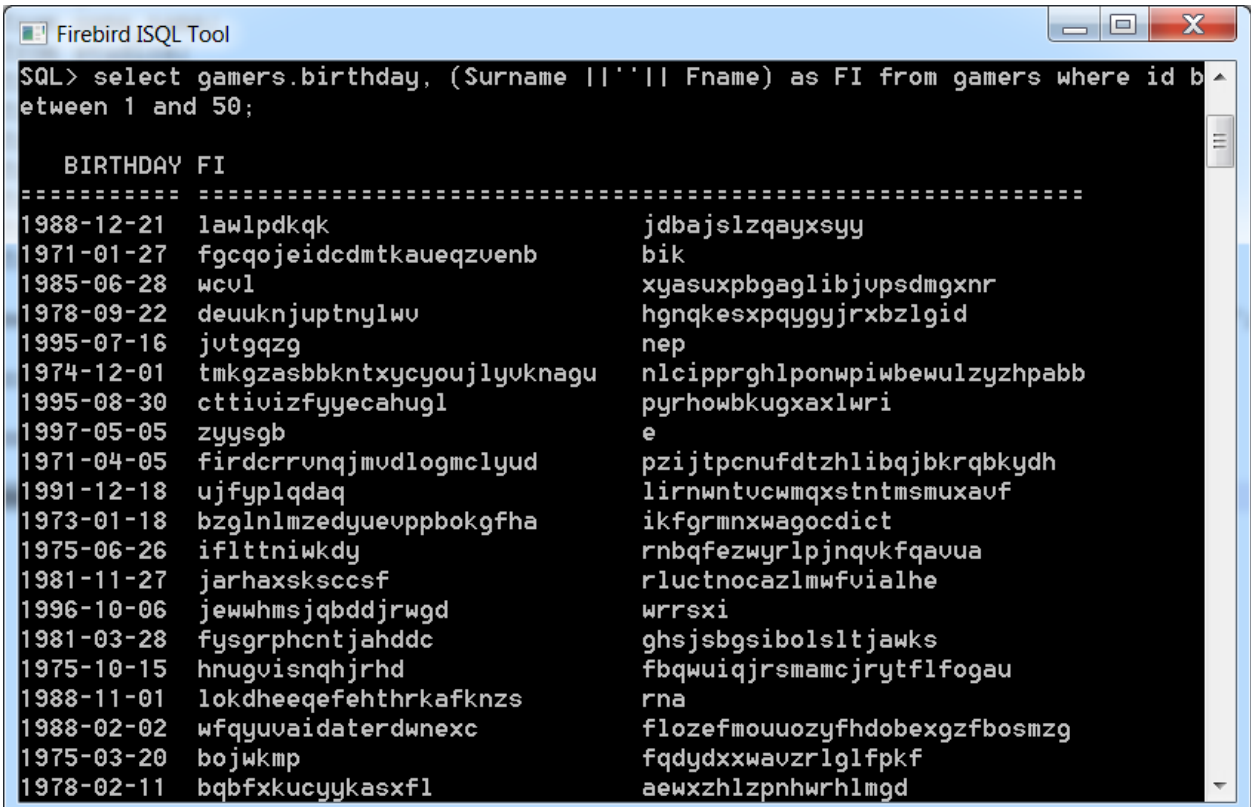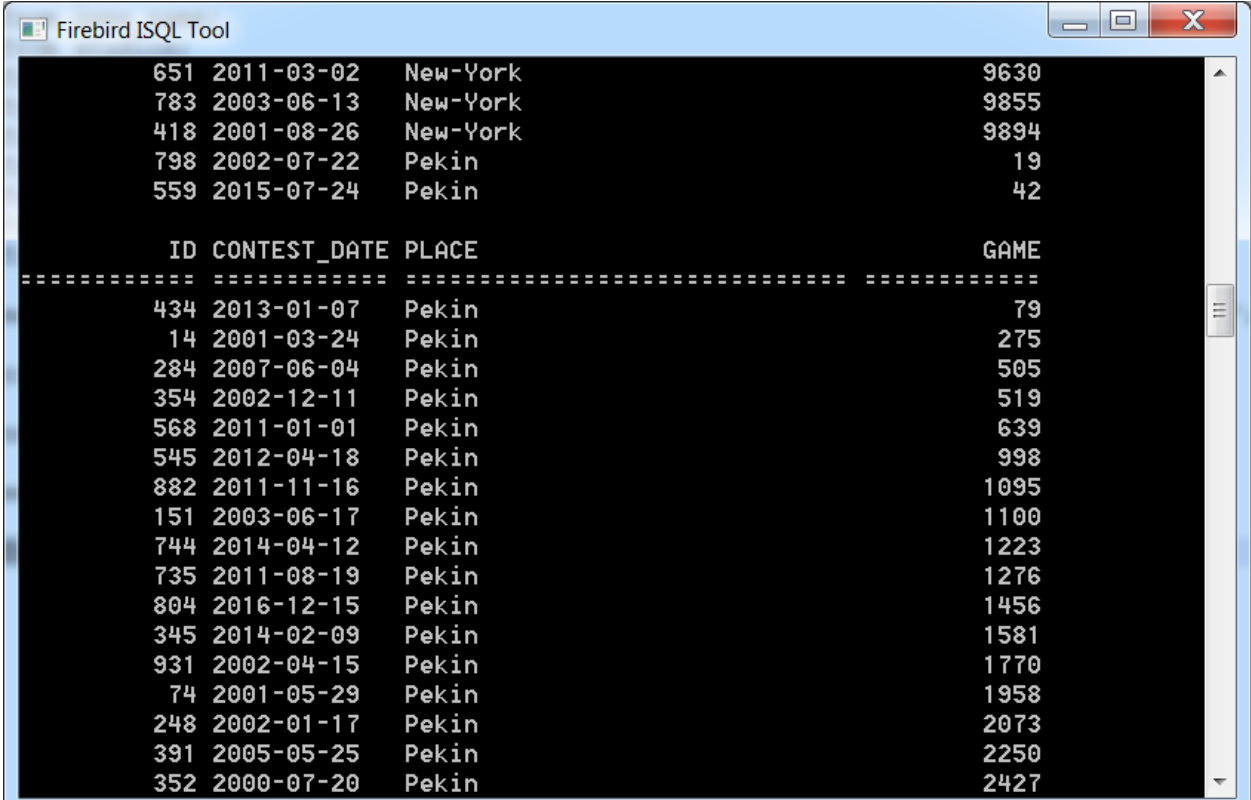
select gamers.birthday, (Surname ||''|| Fname) as FI from gamers where id between 1 and 50;

```
Firebird ISQL Tool                                                    _ □ X

SQL> select gamers.birthday, (Surname ||''|| Fname) as FI from gamers where id b
etween 1 and 50;

   BIRTHDAY FI
========== =======================================================
1988-12-21  lawlpdkqk                     jdbajslzqayxsyy
1971-01-27  fgcqojeidcdmtkaueqzvenb       bik
1985-06-28  wcvl                          xyasuxpbgaglibjvpsdmgxnr
1978-09-22  deuuknjuptnylwv               hgnqkesxpqygyjrxbzlgid
1995-07-16  jvtgqzg                       nep
1974-12-01  tmkgzasbbkntxycyoujlyvknagu   nlcipprghlponwpiwbewulzyzhpabb
1995-08-30  cttivizfyyecahugl             pyrhowbkugxaxlwri
1997-05-05  zyysgb                        e
1971-04-05  firdcrrvnqjmvdlogmclyud       pzijtpcnufdtzhlibqjbkrqbkydh
1991-12-18  ujfyplqdaq                    lirnwntvcwmqxstntmsmuxavf
1973-01-18  bzglnlmzedyuevppbokgfha       ikfgrmnxwagocdict
1975-06-26  iflttniwkdy                   rnbqfezwyrlpjnqvkfqavua
1981-11-27  jarhaxsksccsf                 rluctnocazlmwfvialhe
1996-10-06  jewwhmsjqbddjrwgd             wrrsxi
1981-03-28  fysgrphcntjahddc              ghsjsbgsibolsltjawks
1975-10-15  hnugvisnqhjrhd                fbqwuiqjrsmamcjrytflfogau
1988-11-01  lokdheeqefehthrkafknzs        rna
1988-02-02  wfqyuvaidaterdwnexc           flozefmouuozyfhdobexgzfbosmzg
1975-03-20  bojwkmp                       fqdydxxwavzrlglfpkf
1978-02-11  bqbfxkucyykasxfl              aewxzhlzpnhwrhlmgd
```

select * from contests order by place, game;


```
        651 2011-03-02   New-York                                   9630
        783 2003-06-13   New-York                                   9855
        418 2001-08-26   New-York                                   9894
        798 2002-07-22   Pekin                                        19
        559 2015-07-24   Pekin                                        42

         ID CONTEST_DATE PLACE                                      GAME
============ ============ ================================== ============
        434 2013-01-07   Pekin                                        79
         14 2001-03-24   Pekin                                       275
        284 2007-06-04   Pekin                                       505
        354 2002-12-11   Pekin                                       519
        568 2011-01-01   Pekin                                       639
        545 2012-04-18   Pekin                                       998
        882 2011-11-16   Pekin                                      1095
        151 2003-06-17   Pekin                                      1100
        744 2014-04-12   Pekin                                      1223
        735 2011-08-19   Pekin                                      1276
        804 2016-12-15   Pekin                                      1456
        345 2014-02-09   Pekin                                      1581
        931 2002-04-15   Pekin                                      1770
         74 2001-05-29   Pekin                                      1958
        248 2002-01-17   Pekin                                      2073
        391 2005-05-25   Pekin                                      2250
        352 2000-07-20   Pekin                                      2427
```
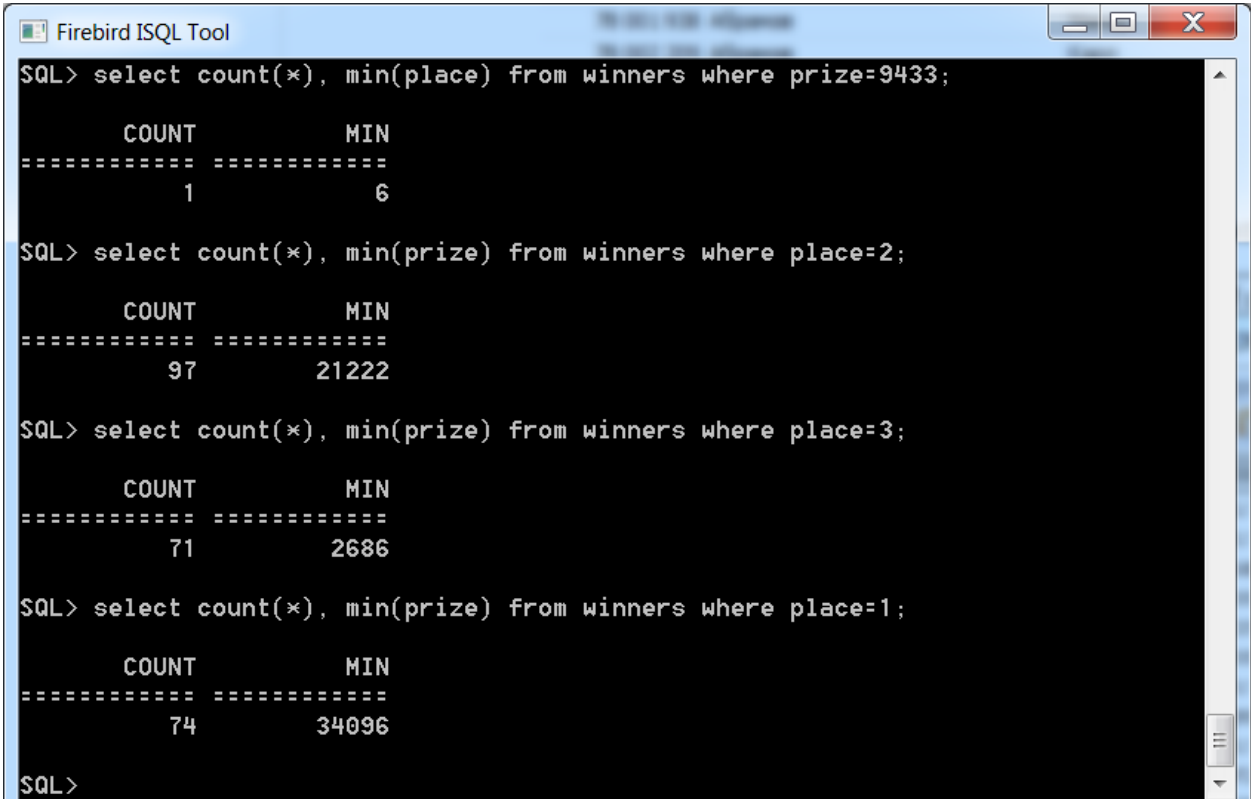
select count(*), min(prize) from winners where place=2;


```
SQL> select count(*), min(place) from winners where prize=9433;

       COUNT          MIN
============ ============
           1            6

SQL> select count(*), min(prize) from winners where place=2;

       COUNT          MIN
============ ============
          97        21222

SQL> select count(*), min(prize) from winners where place=3;

       COUNT          MIN
============ ============
          71         2686

SQL> select count(*), min(prize) from winners where place=1;

       COUNT          MIN
============ ============
          74        34096

SQL>
```
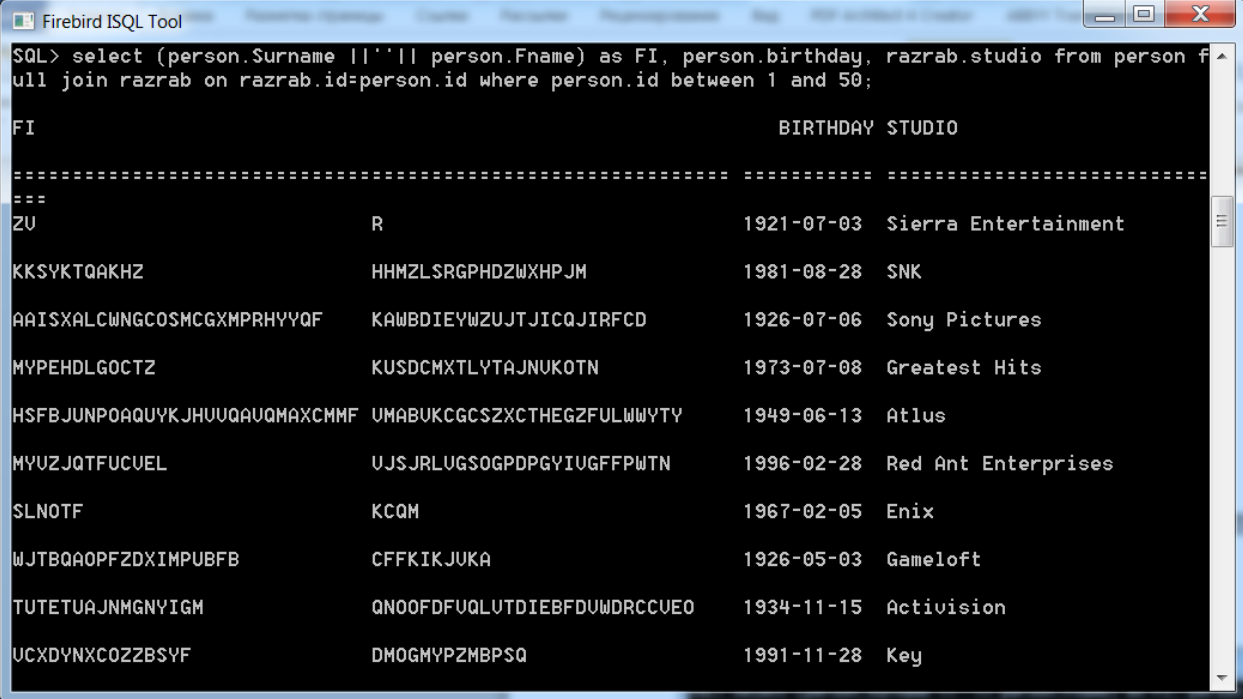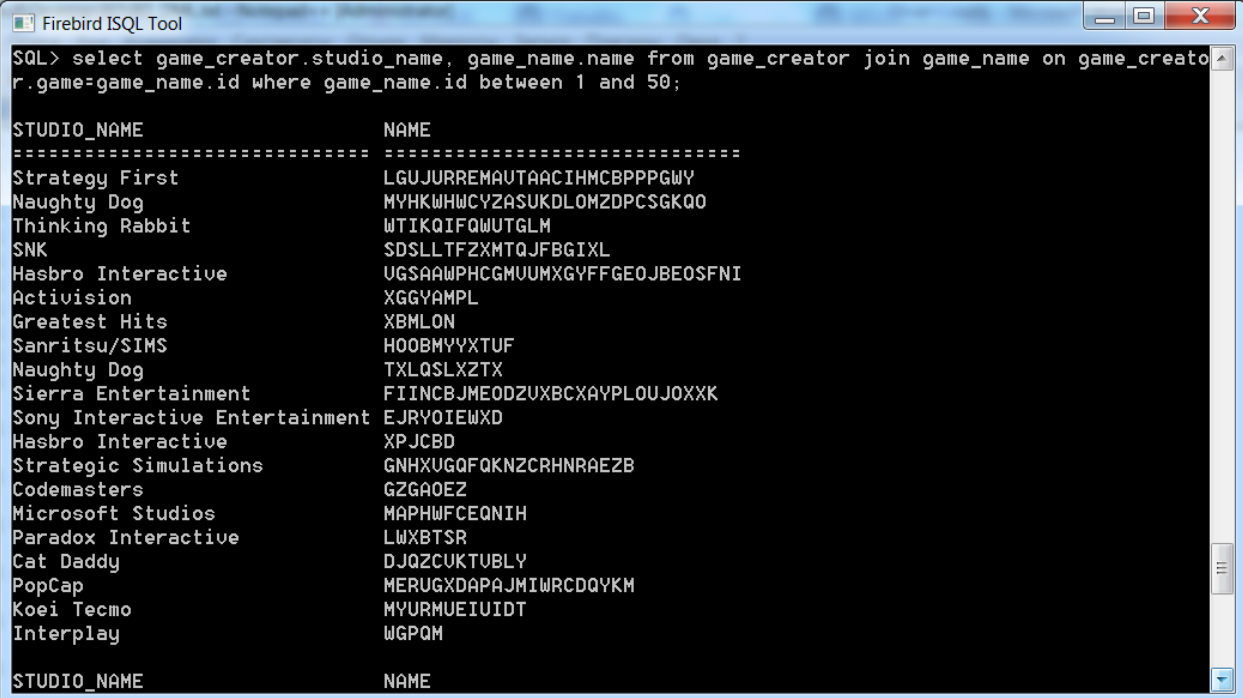
select (person.Surname ||''|| person.Fname) as FI, person.birthday, razrab.studio from person full join razrab on razrab.id=person.id where person.id between 1 and 50;

```
SQL> select (person.Surname ||''|| person.Fname) as FI, person.birthday, razrab.studio from person f
ull join razrab on razrab.id=person.id where person.id between 1 and 50;

FI                                                        BIRTHDAY STUDIO

================================================== =========== ============================
===
ZV                          R                            1921-07-03 Sierra Entertainment

KKSYKTQAKHZ                 HHMZLSRGPHDZWXHPJM             1981-08-28 SNK

AAISXALCWNGCOSMCGXMPRHYYQF  KAWBDIEYWZUJTJICQJIRFCD        1926-07-06 Sony Pictures

MYPEHDLGOCTZ                KUSDCMXTLYTAJNUKOTN            1973-07-08 Greatest Hits

HSFBJUNPOAQUYKJHUUQAUQMAXCMMF UMABUKCGCSZXCTHEGZFULWWYTY  1949-06-13 Atlus

MYUZJQTFUCUEL               UJSJRLUGSOGPDPGYIUGFFPWTN      1996-02-28 Red Ant Enterprises

SLNOTF                      KCQM                          1967-02-05 Enix

WJTBQAOPFZDXIMPUBFB         CFFKIKJUKA                    1926-05-03 Gameloft

TUTETUAJNMGNYIGM            QNOOFDFUQLUTDIEBFDUWDRCCUEO    1934-11-15 Activision

UCXDYNXCOZZBSYF             DMOGMYPZMBPSQ                 1991-11-28 Key
```
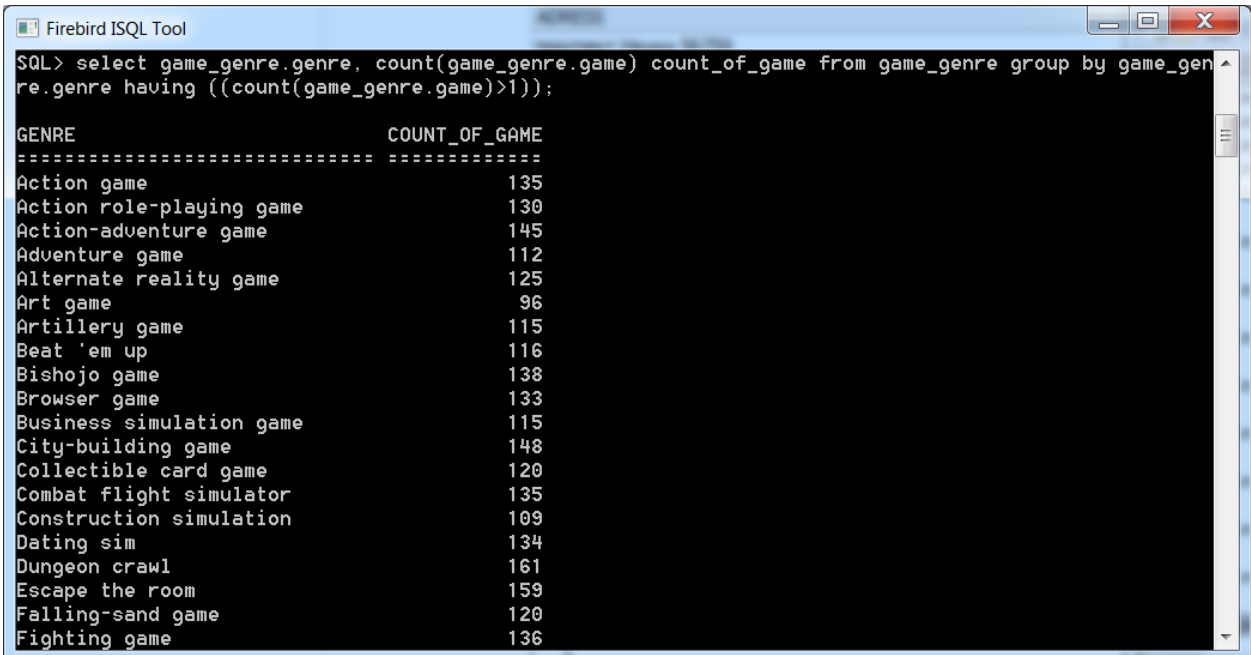
select game_creator.studio_name, game_name.name from game_creator join game_name on game_creator.game=game_name.id where game_name.id between 1 and 50;

```
SQL> select game_creator.studio_name, game_name.name from game_creator join game_creato
r.game=game_name.id where game_name.id between 1 and 50;

STUDIO_NAME                 NAME
=========================== ================================
Strategy First              LGUJURREMAUTAACIHMCBPPPGWY
Naughty Dog                 MYHKWHWCYZASUKDLOMZDPCSGKQO
Thinking Rabbit             WTIKQIFQWUTGLM
SNK                         SDSLLTFZXMTQJFBGIXL
Hasbro Interactive          UGSAAWPHCGMUUMXGYFFGEOJBEOSFNI
Activision                  XGGYAMPL
Greatest Hits               XBMLON
Sanritsu/SIMS               HOOBMYYXTUF
Naughty Dog                 TXLQSLXZTX
Sierra Entertainment        FIINCBJMEODZUXBCXAYPLOUJOXXK
Sony Interactive Entertainment EJRYOIEWXD
Hasbro Interactive          XPJCBD
Strategic Simulations       GNHXUGQFQKNZCRHNRAEZB
Codemasters                 GZGAOEZ
Microsoft Studios           MAPHWFCEQNIH
Paradox Interactive         LWXBTSR
Cat Daddy                   DJQZCUKTUBLY
PopCap                      MERUGXDAPAJMIWRCDQYKM
Koei Tecmo                  MYURMUEIUIDT
Interplay                   WGPQM

STUDIO_NAME                 NAME
```
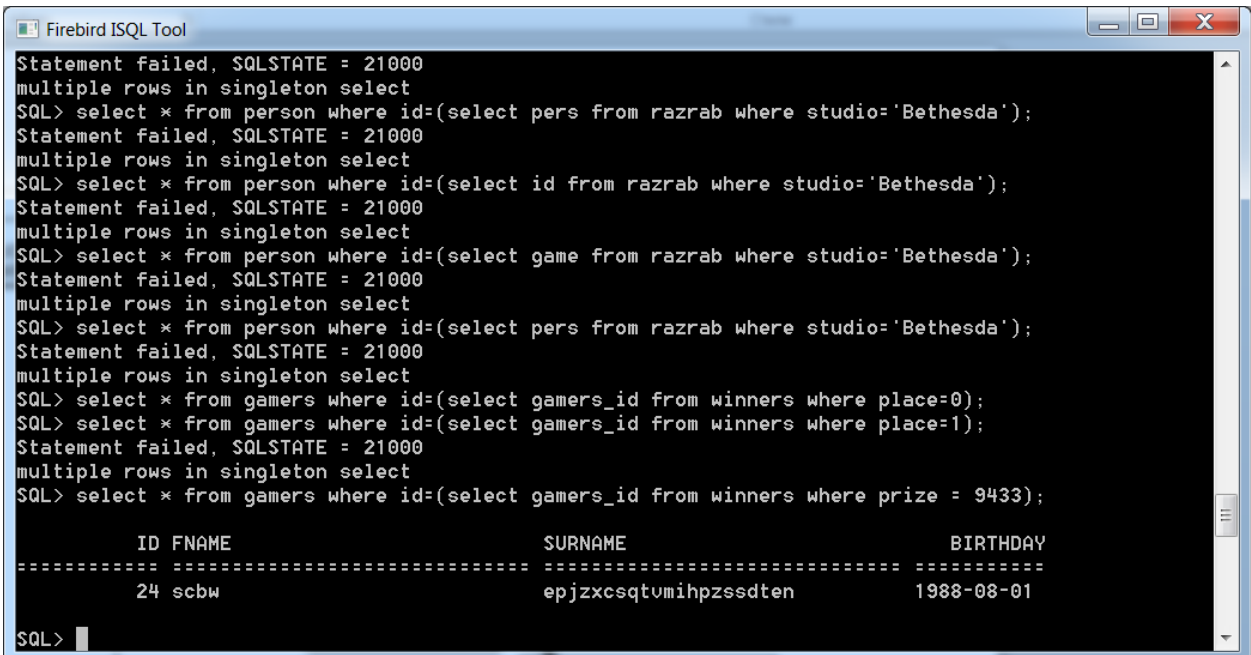
select game_genre.genre, count(game_genre.game) count_of_game from game_genre group by game_genre.genre having ((count(game_genre.game)>1));

```
Firebird ISQL Tool                                                    _ □ X

SQL> select game_genre.genre, count(game_genre.game) count_of_game from game_genre group by game_gen
re.genre having ((count(game_genre.game)>1));

GENRE                              COUNT_OF_GAME
============================== ==============
Action game                               135
Action role-playing game                  130
Action-adventure game                     145
Adventure game                            112
Alternate reality game                    125
Art game                                   96
Artillery game                            115
Beat 'em up                               116
Bishojo game                              138
Browser game                              133
Business simulation game                  115
City-building game                        148
Collectible card game                     120
Combat flight simulator                   135
Construction simulation                   109
Dating sim                                134
Dungeon crawl                             161
Escape the room                           159
Falling-sand game                         120
Fighting game                             136
```

select * from person where id=(select pers from razrab where "STUDIO"="Bethesda");

```
Firebird ISQL Tool                                                    _ □ X

Statement failed, SQLSTATE = 21000
multiple rows in singleton select
SQL> select × from person where id=(select pers from razrab where studio='Bethesda');
Statement failed, SQLSTATE = 21000
multiple rows in singleton select
SQL> select × from person where id=(select id from razrab where studio='Bethesda');
Statement failed, SQLSTATE = 21000
multiple rows in singleton select
SQL> select × from person where id=(select game from razrab where studio='Bethesda');
Statement failed, SQLSTATE = 21000
multiple rows in singleton select
SQL> select × from person where id=(select pers from razrab where studio='Bethesda');
Statement failed, SQLSTATE = 21000
multiple rows in singleton select
SQL> select × from gamers where id=(select gamers_id from winners where place=0);
SQL> select × from gamers where id=(select gamers_id from winners where place=1);
Statement failed, SQLSTATE = 21000
multiple rows in singleton select
SQL> select × from gamers where id=(select gamers_id from winners where prize = 9433);

         ID FNAME                          SURNAME                          BIRTHDAY
============ ============================== ============================== ==========
         24 scbw                           epjzxcsqtumihpzssdten          1988-08-01

SQL>
```
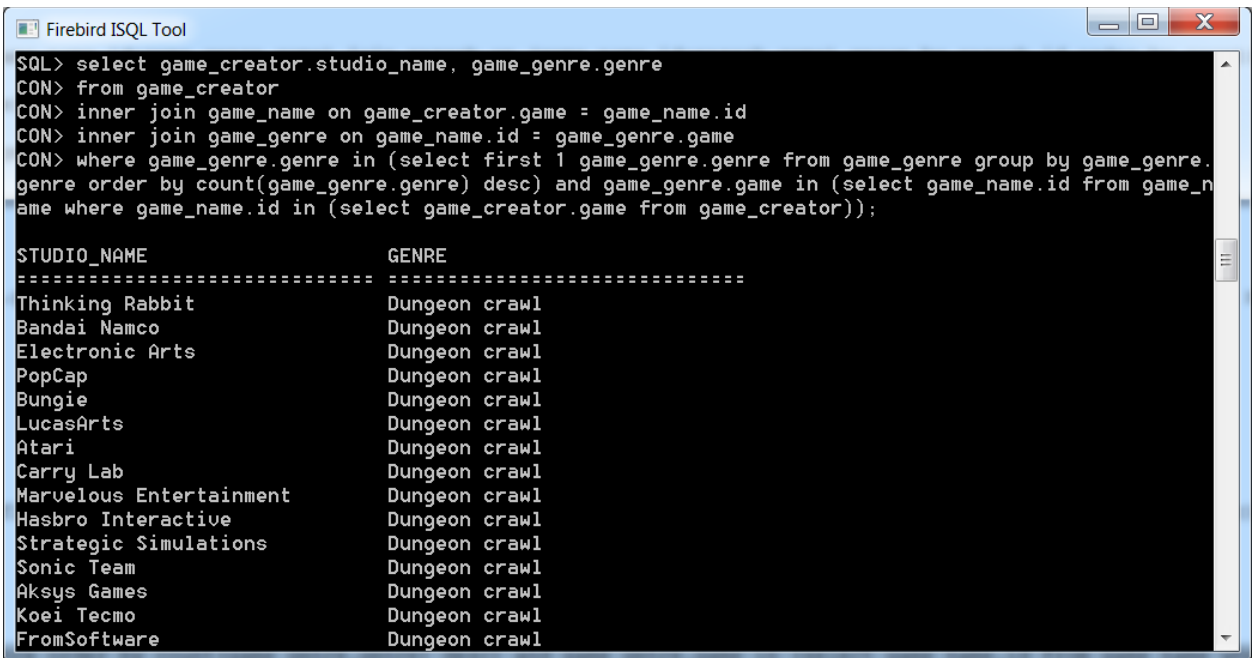
Индивидуальные задания:

1. Вывести наиболее популярные жанры для каждой студии.

```
select game_creator.studio_name, game_genre.genre

from game_creator

inner join game_name on game_creator.game = game_name.id

inner join game_genre on game_name.id = game_genre.game

where game_genre.genre in (select first 1 game_genre.genre from game_genre
group by game_genre.genre order by count(game_genre.genre) desc) and
game_genre.game in (select game_name.id from game_name where game_name.id
in (select game_creator.game from game_creator));
```


2. Вывести 10 разработчиков, которые поучаствовали в разработки наибольшего количества игр от разных студий.

```
select first 10 person.surname, count(razrab.game) from person join razrab on
(razrab.pers=person.id) group by person.surname order by count(razrab.game)
desc;
```

```
        ID NAME                                     SCORE CREATION_DATE
============ ============================== ============= =============
         1 LGUJURREMAUTAACIHMCBPPPGWY         2.0000000 1858-11-17
         2 MYHKWHWCYZASUKDLOMZDPCSGKQO        5.0000000 1858-11-17
         3 WTIKQIFQWUTGLM                     3.0000000 1858-11-17
         4 SDSLLTFZXMTQJFBGIXL                5.0000000 1858-11-17
         5 VGSAAWPHCGMUUMXGYFFGEOJBEOSFNI     8.0000000 1858-11-17

SQL> select first 10 person.surname, count(razrab.game) from person join razrab on (razrab.pers=pers
on.id) group by person.surname order by count(razrab.game) desc;

SURNAME                                        COUNT
============================================ ============
U                                                100
K                                                 96
W                                                 92
E                                                 86
P                                                 85
Z                                                 83
X                                                 82
S                                                 79
R                                                 78
F                                                 75

SQL>
```

3. Вывести 5 игр, участники турниров по которым получили наибольшие суммарные призовые.

```
select first 5 game_name.name, sum(winners.prize) from game_name join contests
on (contests.game=game_name.id) join winners on (winners.contest=contests.id)
group by game_name.name order by sum(winners.prize) desc;
```

```
============================================ ============
U                                                100
K                                                 96
W                                                 92
E                                                 86
P                                                 85
Z                                                 83
X                                                 82
S                                                 79
R                                                 78
F                                                 75

SQL> select first 5 game_name.name, sum(winners.prize) from game_name join contests on (contests.gam
e=game_name.id) join winners on (winners.contest=contests.id) group by game_name.name order by sum(w
inners.prize) desc;

NAME                                              SUM
============================================ ====================
DHBOZTCQSLXALOORGKFENBIWOF                    18535282
UGFFZDFZMZNGGSBGSERFDXQHJLB                   17926713
FASCWGHQQQTEWRQOACAX                          13346471
MZSXVJZJTOBMPULKOFI                           11225839
TSCZRMQLKLNHC                                 11157799

SQL>
```