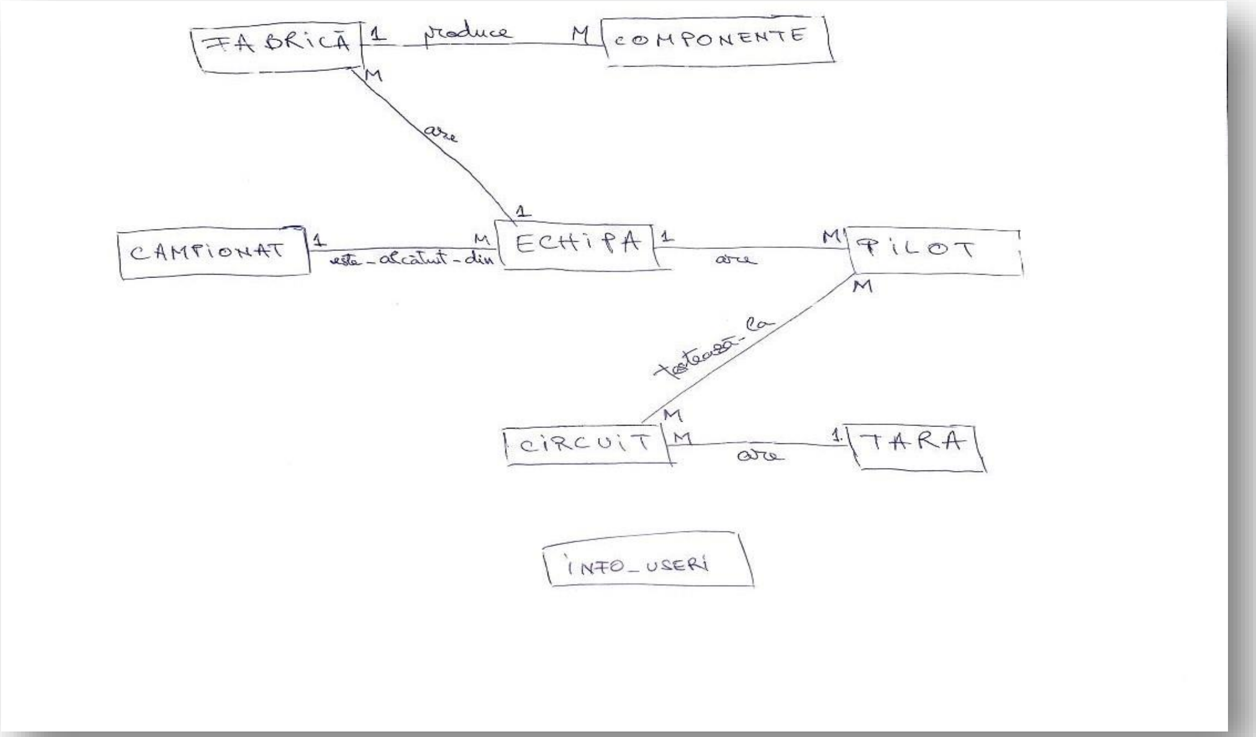
PROIECT SGBD MOTORSPORT

HERNEST MIHAI 242

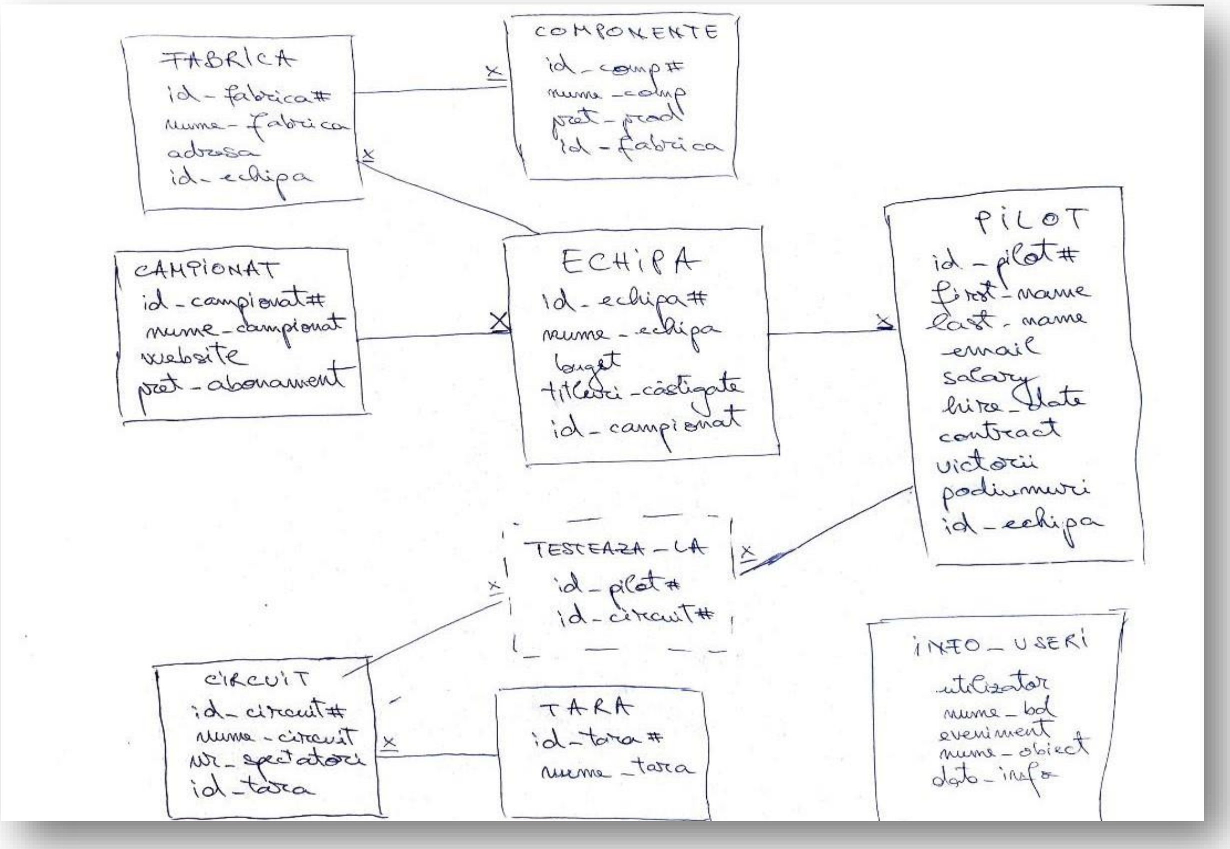
1.

Proiectul este realizat in jurul bazei de date FIA(Federatia Internationala de Automobilism) ce cuprinde campionate de motorsport precum Formula 1, Formula 2, Formula E etc. Aceasta baze de date s-a format pe baza momentului actual al desfasurarii acestor campionate si anume pre-sezonul, testarea masinilor si producerea noilor componente pentru sezonul ce urmeaza. Astfel, baza de date este alcatuita din urmatoarele entitati: campionat, ce cuprinde informatii legate de nume, website sau pretul unui abonament pentru fiecare campionat; echipa, cuprinde bugetul, cate titluri a castigat fiecare echipa; pilot contine informatii legate de palmaresul acestora, dar si informatii ce il leaga de echipa actuala(salariu, contract). Fiecare echipa are, de asemenea, fabrici in care poate poate produce componente pentru monoposturile din sezonul viitor. Pilotii au posibilitatea de a testa noile componente pe mai multe circuite, circuite ce fac parte din diferite tari ale lumii. Toate comenzile de tip LDD vor fi stocate in tabelul info_useri.

2.


FABRICĂ
1
produce
M
COMPONENTE
M
are
1
CAMPIONAT
1
este_alcătuit_din
M
ECHIPA
1
are
M
PILOT
M
testează_la
M
CIRCUIT
M
are
1
TARA
INFO_USERI

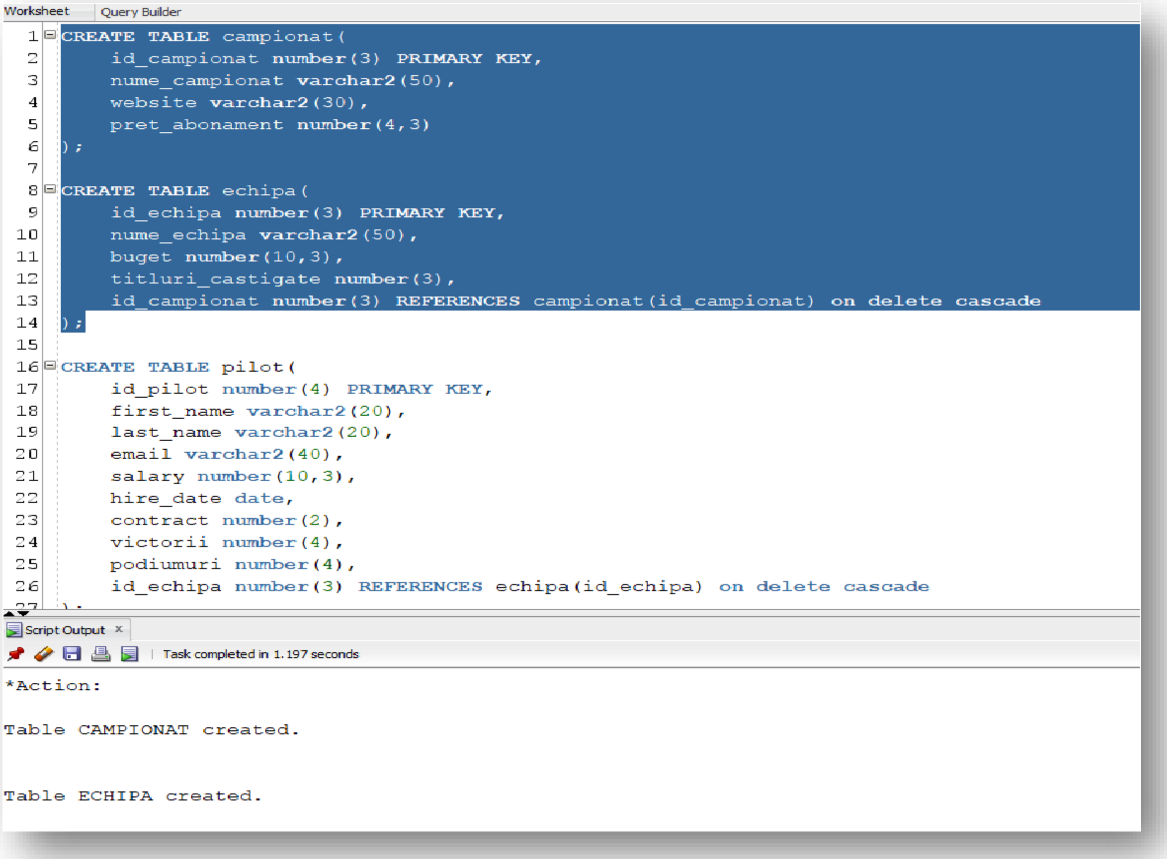
3.


FABRICA
id_fabrica#
nume_fabrica
adresa
id_echipa
COMPONENTE
id_comp#
nume_comp
pret_prod
id_fabrica
CAMPIONAT
id_campionat#
nume_campionat
website
pret_abonament
ECHIPA
id_echipa#
nume_echipa
buget
titluri_câștigate
id_campionat
PILOT
id_pilot#
first_name
last_name
email
salary
hire_date
contract
victorii
podiumuri
id_echipa
TESTEAZA_LA
id_pilot#
id_circuit#
CIRCUIT
id_circuit#
nume_circuit
nr_spectatori
id_tara
TARA
id_tara#
nume_tara
INFO_USERI
utilizator
nume_bd
eveniment
nume_obiect
data_info

4.

```
CREATE TABLE campionat(
   id_campionat number(3) PRIMARY KEY,
   nume_campionat varchar2(50),
   website varchar2(30),
   pret_abonament number(4,3)
);

CREATE TABLE echipa(
   id_echipa number(3) PRIMARY KEY,
   nume_echipa varchar2(50),
   buget number(10,3),
   titluri_castigate number(3),
   id_campionat number(3) REFERENCES campionat(id_campionat) on delete cascade
);

CREATE TABLE pilot(
   id_pilot number(4) PRIMARY KEY,
   first_name varchar2(20),
   last_name varchar2(20),
   email varchar2(40),
   salary number(10,3),
   hire_date date,
   contract number(2),
   victorii number(4),
   podiumuri number(4),
   id_echipa number(3) REFERENCES echipa(id_echipa) on delete
cascade
);

CREATE TABLE tara(
   id_tara number(3) primary key,
   nume_tara varchar2(50)
);

CREATE TABLE circuit(
   id_circuit number(3) PRIMARY KEY,
   nume_circuit varchar2(50),
   nr_spectatori number(6),
   id_tara number(3) references tara(id_tara) on delete cascade
);

CREATE TABLE testeaza_la(
   id_pilot number(4) NOT NULL,
   id_circuit number(3) NOT NULL,
   FOREIGN KEY (id_pilot) references pilot(id_pilot),
   FOREIGN KEY (id_circuit) references circuit(id_circuit),
   UNIQUE (id_pilot, id_circuit)
);
```

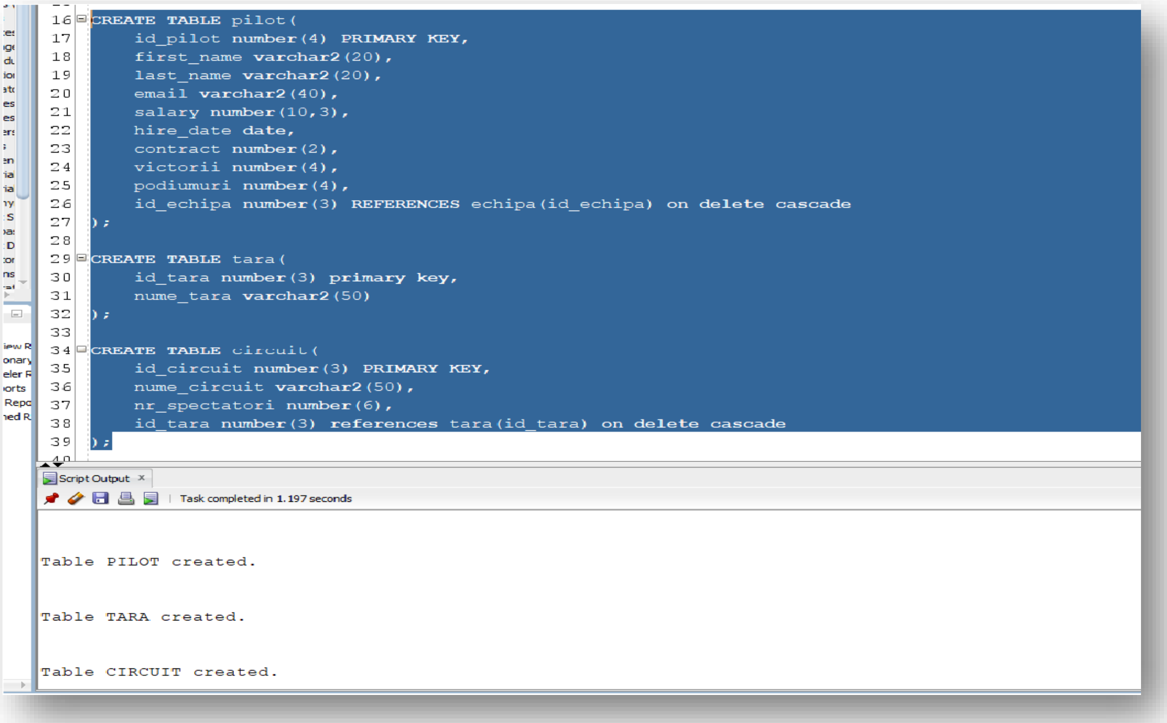
```
CREATE TABLE fabrica(
   id_fabrica number(3) PRIMARY KEY,
   nume_fabrica varchar2(40),
   adresa varchar2(40),
   id_echipa number(3) references echipa(id_echipa) on delete cascade
);

CREATE TABLE componente(
   id_comp number(4) PRIMARY KEY,
   nume_comp varchar2(30),
   pret_prod number(10, 3),
   id_fabrica number(3) references fabrica(id_fabrica) on delete cascade
);

CREATE TABLE info_useri(
   utilizator VARCHAR2(30),
   nume_bd VARCHAR2(30),
   eveniment VARCHAR2(20),
   nume_obiect VARCHAR2(30),
   data_info DATE
);
```



```
CREATE TABLE campionat(
     id_campionat number(3) PRIMARY KEY,
     nume_campionat varchar2(50),
     website varchar2(30),
     pret_abonament number(4,3)
);

CREATE TABLE echipa(
     id_echipa number(3) PRIMARY KEY,
     nume_echipa varchar2(50),
     buget number(10,3),
     titluri_castigate number(3),
     id_campionat number(3) REFERENCES campionat(id_campionat) on delete cascade
);

CREATE TABLE pilot(
     id_pilot number(4) PRIMARY KEY,
     first_name varchar2(20),
     last_name varchar2(20),
     email varchar2(40),
     salary number(10,3),
     hire_date date,
     contract number(2),
     victorii number(4),
     podiumuri number(4),
     id_echipa number(3) REFERENCES echipa(id_echipa) on delete cascade
);
```

Task completed in 1.197 seconds

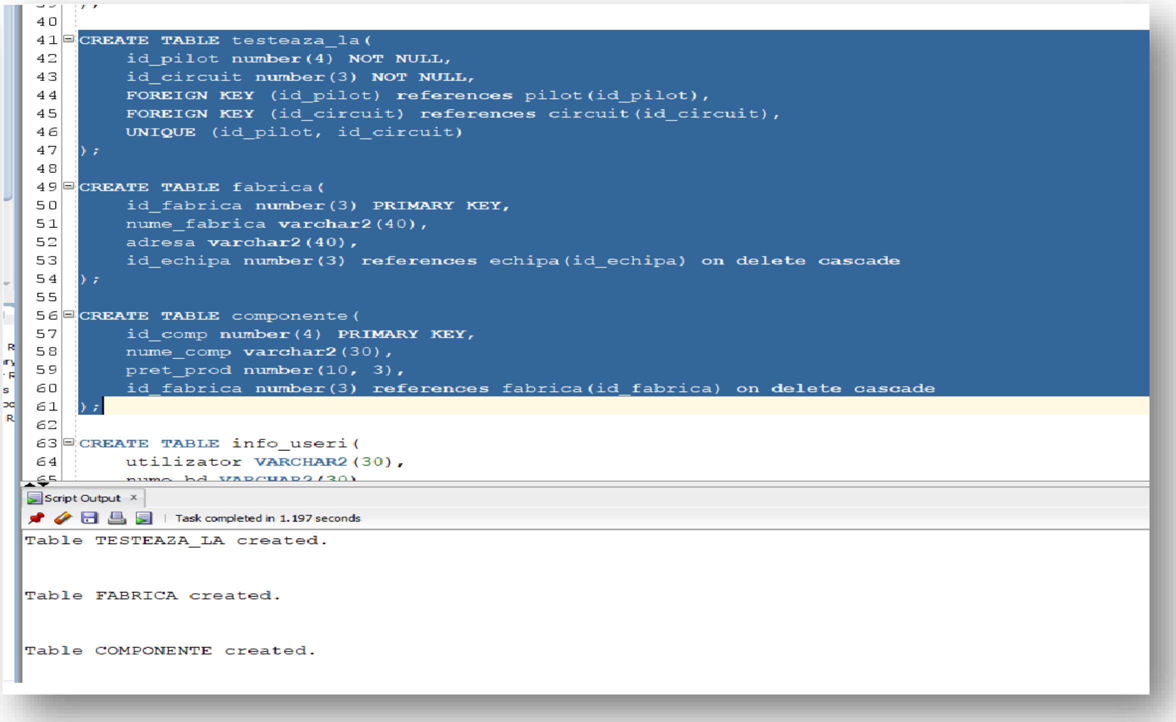
```
*Action:

Table CAMPIONAT created.


Table ECHIPA created.
```



```
CREATE TABLE pilot(
     id_pilot number(4) PRIMARY KEY,
     first_name varchar2(20),
     last_name varchar2(20),
     email varchar2(40),
     salary number(10,3),
     hire_date date,
     contract number(2),
     victorii number(4),
     podiumuri number(4),
     id_echipa number(3) REFERENCES echipa(id_echipa) on delete cascade
);

CREATE TABLE tara(
     id_tara number(3) primary key,
     nume_tara varchar2(50)
);

CREATE TABLE circuit(
     id_circuit number(3) PRIMARY KEY,
     nume_circuit varchar2(50),
     nr_spectatori number(6),
     id_tara number(3) references tara(id_tara) on delete cascade
);
```

Task completed in 1.197 seconds

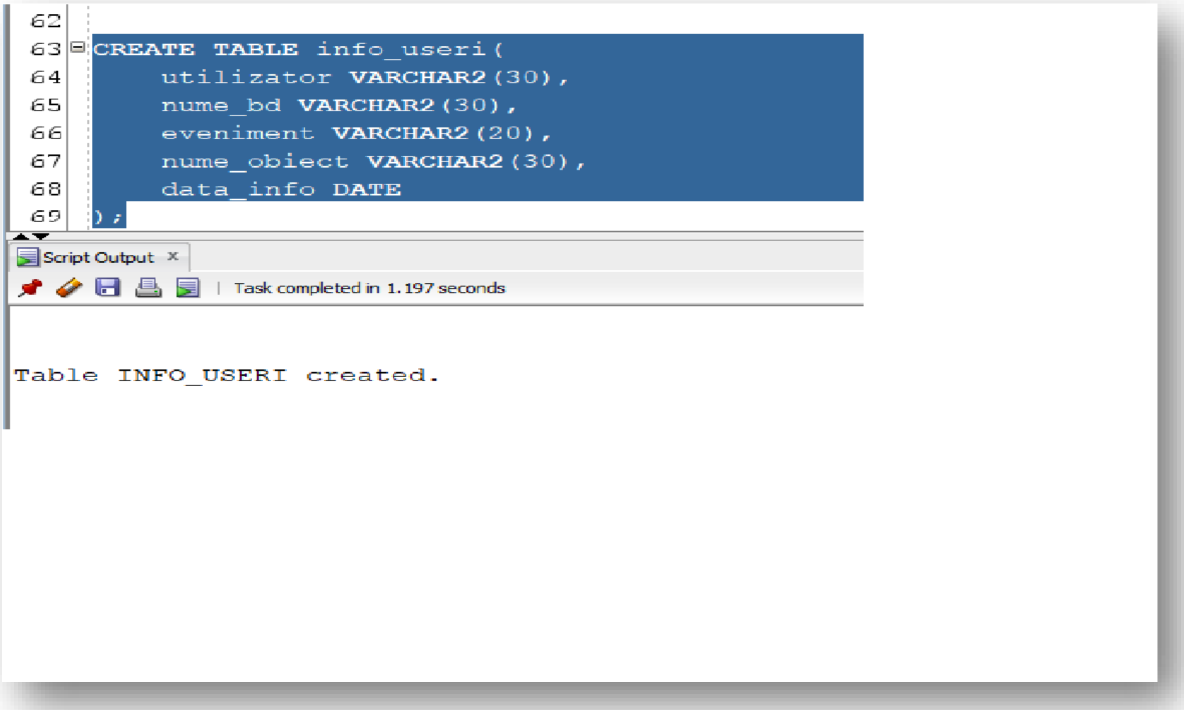
```


Table PILOT created.


Table TARA created.


Table CIRCUIT created.
```



```
CREATE TABLE testeaza_la(
    id_pilot number(4) NOT NULL,
    id_circuit number(3) NOT NULL,
    FOREIGN KEY (id_pilot) references pilot(id_pilot),
    FOREIGN KEY (id_circuit) references circuit(id_circuit),
    UNIQUE (id_pilot, id_circuit)
);

CREATE TABLE fabrica(
    id_fabrica number(3) PRIMARY KEY,
    nume_fabrica varchar2(40),
    adresa varchar2(40),
    id_echipa number(3) references echipa(id_echipa) on delete cascade
);

CREATE TABLE componente(
    id_comp number(4) PRIMARY KEY,
    nume_comp varchar2(30),
    pret_prod number(10, 3),
    id_fabrica number(3) references fabrica(id_fabrica) on delete cascade
);

CREATE TABLE info_useri(
    utilizator VARCHAR2(30),
```

Task completed in 1.197 seconds

```
Table TESTEAZA_LA created.


Table FABRICA created.


Table COMPONENTE created.
```



```
CREATE TABLE info_useri(
    utilizator VARCHAR2(30),
    nume_bd VARCHAR2(30),
    eveniment VARCHAR2(20),
    nume_obiect VARCHAR2(30),
    data_info DATE
);
```

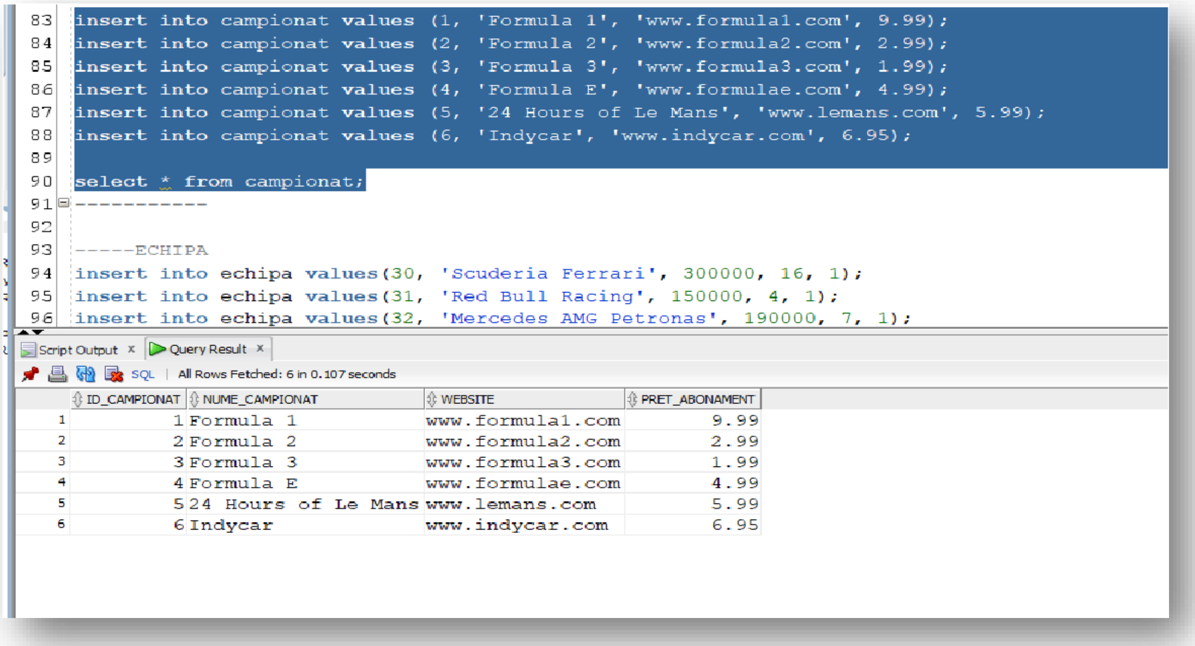
Task completed in 1.197 seconds

```
Table INFO_USERI created.
```

5.

```
----CAMPIONAT
insert into campionat values (1, 'Formula 1', 'www.formula1.com', 9.99);
insert into campionat values (2, 'Formula 2', 'www.formula2.com', 2.99);
insert into campionat values (3, 'Formula 3', 'www.formula3.com', 1.99);
insert into campionat values (4, 'Formula E', 'www.formulae.com', 4.99);
insert into campionat values (5, '24 Hours of Le Mans', 'www.lemans.com', 5.99);
insert into campionat values (6, 'Indycar', 'www.indycar.com', 6.95);
-----------

-----ECHIPA
insert into echipa values(30, 'Scuderia Ferrari', 300000, 16, 1);
insert into echipa values(31, 'Red Bull Racing', 150000, 4, 1);
insert into echipa values(32, 'Mercedes AMG Petronas', 190000, 7, 1);
insert into echipa values(40, 'Prema Racing', 50000, 1, 2);
insert into echipa values(60, 'Techeetah', 70000, 2, 4);
insert into echipa values(41, 'Uni-Virtuosi Racing', 40000, 0, 2);
insert into echipa values(33, 'Team Penske', 40000, 3, 6);
```

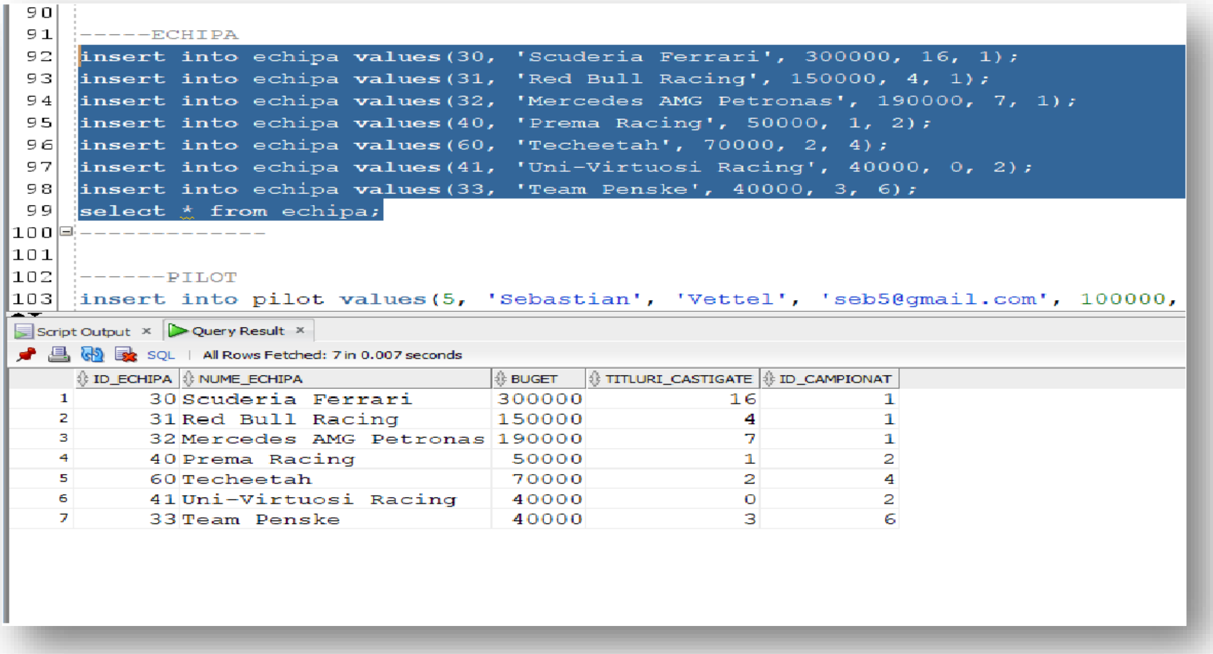
```
-------------


------PILOT

insert into pilot values(5, 'Sebastian', 'Vettel', 'seb5@gmail.com',
100000, TO_DATE('03/05/2015', 'dd/mm/yyyy'),

                    5, 53, 121, 30);

insert into pilot values(16, 'Charles', 'Leclerc', 'leclerc1@sf.com',
20000, TO_DATE('11/09/2018', 'dd/mm/yyyy'),

                    3, 2, 12, 30);

insert into pilot values(44, 'Lewis', 'Hamilton',
'hamilton@yahoo.com', 50000, TO_DATE('07/10/2013',
'dd/mm/yyyy'),

                    1, 95, 165, 32);

insert into pilot values(33, 'Max', 'Verstappen', 'max@gmail.com',
25000, TO_DATE('04/09/2016', 'dd/mm/yyyy'),

                    3, 10, 42, 31);

insert into pilot values(13, 'Antonio', 'Da Costa', 'anto@yahoo.com',
10000, TO_DATE('11/08/2018', 'dd/mm/yyyy'),

                    2, 1, 4, 60);

insert into pilot values(47, 'Mick', 'Schumacher', 'mick47@f2.com',
15000, TO_DATE('22/06/2019', 'dd/mm/yyyy'),

                    2, 5, 10, 40);

------------


--------TARA

insert into tara values(10, 'Italia');
insert into tara values(11, 'Ungaria');
insert into tara values(12, 'Belgia');
insert into tara values(13, 'Olanda');
insert into tara values(14, 'Turcia');
insert into tara values(15, 'America');
-----------

-------CIRCUIT
insert into circuit values(1, 'Autodromo Monza', 10000,10);
insert into circuit values(2, 'Hungaroring', 8000,11);
insert into circuit values(3, 'Spa-Francorchamps', 15000,12);
insert into circuit values(4, 'Park Zandvoort', 5000,13);
insert into circuit values(5, 'Mugello', 2000,10);
insert into circuit values(6, 'Circuit of the Americas', 5000, 15);
-----------

----TESTEAZA_LA
insert into testeaza_la values(5, 1);
insert into testeaza_la values(16, 1);
insert into testeaza_la values(44, 1);
insert into testeaza_la values(33, 1);
insert into testeaza_la values(5, 2);
insert into testeaza_la values(16, 2);
insert into testeaza_la values(44, 2);
insert into testeaza_la values(33, 2);

insert into testeaza_la values(13, 4);

insert into testeaza_la values(5, 3);

insert into testeaza_la values(16, 3);

insert into testeaza_la values(33, 3);

------------


--------FABRICA

insert into fabrica values(10, 'Ferrari Factory', 'Via Abetone Inferiore', 30);

insert into fabrica values(11, 'Red Bull Racing Factory', 'Bradbourne Dr MK7 8BJ', 31);

insert into fabrica values(12, 'Mercedes AMG Petronas Factory', 'Operations Centre NN13 7BD', 32);

insert into fabrica values(13, 'Prema Racing Factory', 'Via Alcide de Gasperi', 40);

insert into fabrica values(14, 'Techeetah Factory', 'Jiajin Expy', 60);

--------------


------COMPONENTE

insert into componente values(10, 'Motor Ferrari', 9999999, 10);

insert into componente values(20, 'Transmisie RB', 100000, 11);

insert into componente values(30, 'Sistem Suspensie MAMG', 400000, 12);

insert into componente values(11, 'Frane SF2000', 80000, 10);

insert into componente values(21, 'Motor RB', 8000000, 11);
```



```
insert into campionat values (1, 'Formula 1', 'www.formula1.com', 9.99);
insert into campionat values (2, 'Formula 2', 'www.formula2.com', 2.99);
insert into campionat values (3, 'Formula 3', 'www.formula3.com', 1.99);
insert into campionat values (4, 'Formula E', 'www.formulae.com', 4.99);
insert into campionat values (5, '24 Hours of Le Mans', 'www.lemans.com', 5.99);
insert into campionat values (6, 'Indycar', 'www.indycar.com', 6.95);

select * from campionat;
-----------

-----ECHIPA
insert into echipa values(30, 'Scuderia Ferrari', 300000, 16, 1);
insert into echipa values(31, 'Red Bull Racing', 150000, 4, 1);
insert into echipa values(32, 'Mercedes AMG Petronas', 190000, 7, 1);
```

All Rows Fetched: 6 in 0.107 seconds

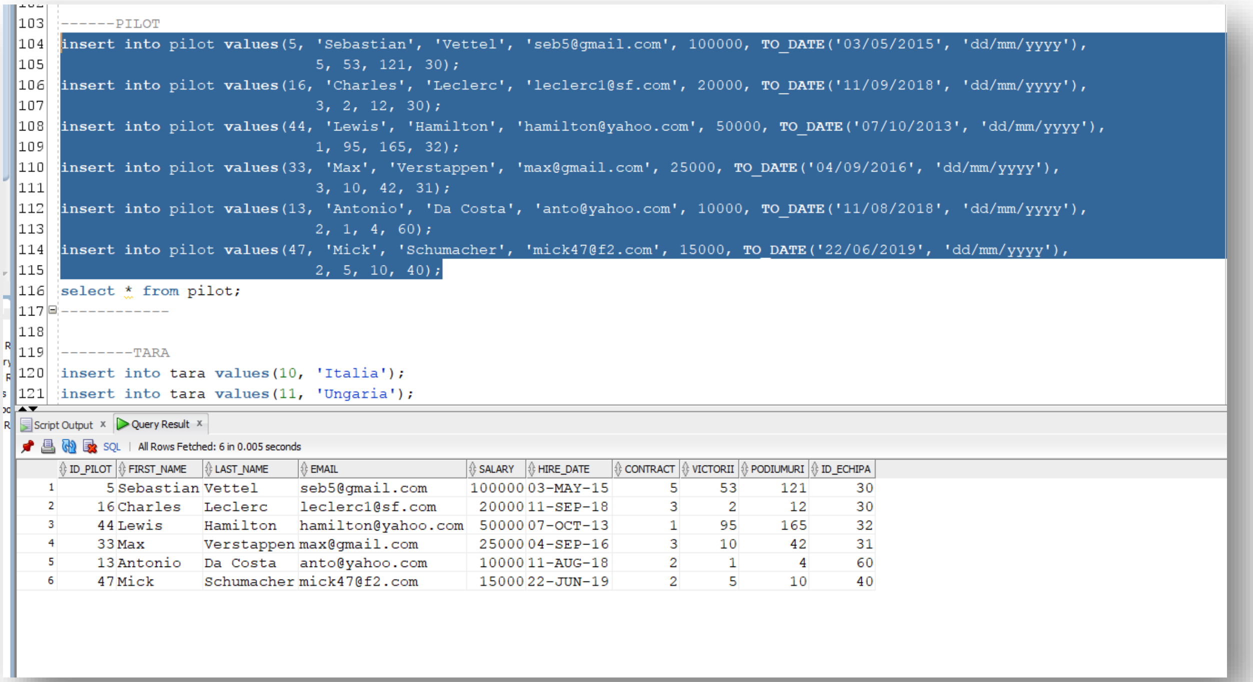
	ID_CAMPIONAT	NUME_CAMPIONAT	WEBSITE	PRET_ABONAMENT
1	1	Formula 1	www.formula1.com	9.99
2	2	Formula 2	www.formula2.com	2.99
3	3	Formula 3	www.formula3.com	1.99
4	4	Formula E	www.formulae.com	4.99
5	5	24 Hours of Le Mans	www.lemans.com	5.99
6	6	Indycar	www.indycar.com	6.95



```

-----ECHIPA
insert into echipa values(30, 'Scuderia Ferrari', 300000, 16, 1);
insert into echipa values(31, 'Red Bull Racing', 150000, 4, 1);
insert into echipa values(32, 'Mercedes AMG Petronas', 190000, 7, 1);
insert into echipa values(40, 'Prema Racing', 50000, 1, 2);
insert into echipa values(60, 'Techeetah', 70000, 2, 4);
insert into echipa values(41, 'Uni-Virtuosi Racing', 40000, 0, 2);
insert into echipa values(33, 'Team Penske', 40000, 3, 6);
select * from echipa;
-------------


------PILOT
insert into pilot values(5, 'Sebastian', 'Vettel', 'seb5@gmail.com', 100000,
```

All Rows Fetched: 7 in 0.007 seconds

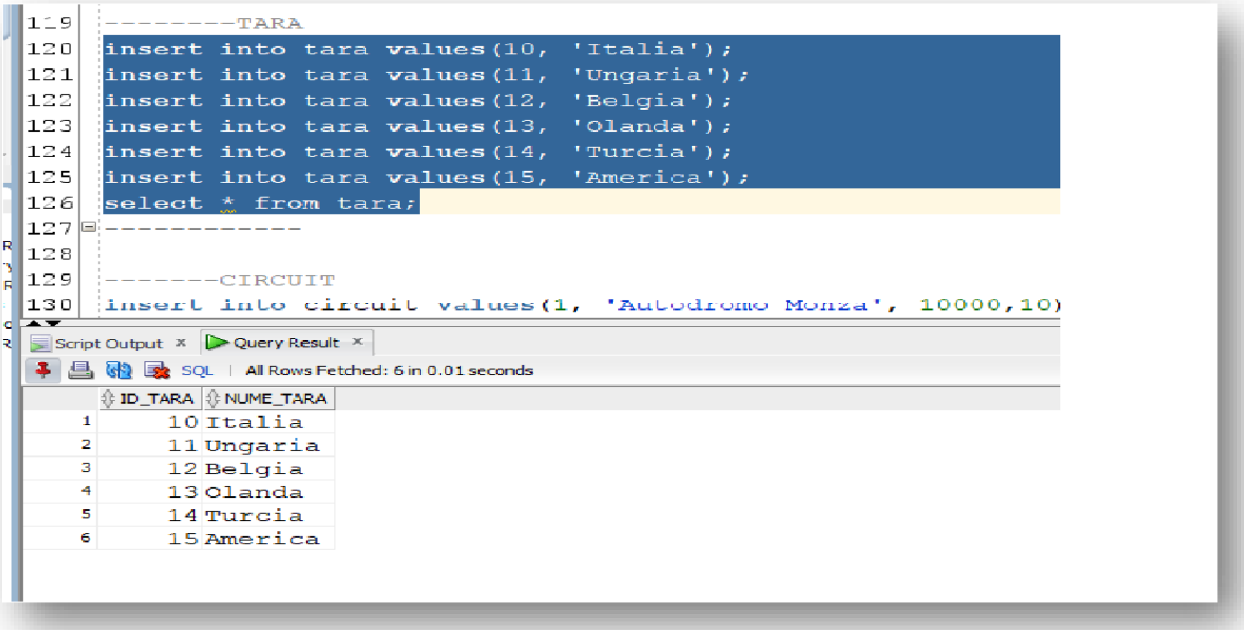
	ID_ECHIPA	NUME_ECHIPA	BUGET	TITLURI_CASTIGATE	ID_CAMPIONAT
1	30	Scuderia Ferrari	300000	16	1
2	31	Red Bull Racing	150000	4	1
3	32	Mercedes AMG Petronas	190000	7	1
4	40	Prema Racing	50000	1	2
5	60	Techeetah	70000	2	4
6	41	Uni-Virtuosi Racing	40000	0	2
7	33	Team Penske	40000	3	6



```
------PILOT
insert into pilot values(5, 'Sebastian', 'Vettel', 'seb5@gmail.com', 100000, TO_DATE('03/05/2015', 'dd/mm/yyyy'),
                          5, 53, 121, 30);
insert into pilot values(16, 'Charles', 'Leclerc', 'leclerc1@sf.com', 20000, TO_DATE('11/09/2018', 'dd/mm/yyyy'),
                          3, 2, 12, 30);
insert into pilot values(44, 'Lewis', 'Hamilton', 'hamilton@yahoo.com', 50000, TO_DATE('07/10/2013', 'dd/mm/yyyy'),
                          1, 95, 165, 32);
insert into pilot values(33, 'Max', 'Verstappen', 'max@gmail.com', 25000, TO_DATE('04/09/2016', 'dd/mm/yyyy'),
                          3, 10, 42, 31);
insert into pilot values(13, 'Antonio', 'Da Costa', 'anto@yahoo.com', 10000, TO_DATE('11/08/2018', 'dd/mm/yyyy'),
                          2, 1, 4, 60);
insert into pilot values(47, 'Mick', 'Schumacher', 'mick47@f2.com', 15000, TO_DATE('22/06/2019', 'dd/mm/yyyy'),
                          2, 5, 10, 40);
select * from pilot;
------------


--------TARA
insert into tara values(10, 'Italia');
insert into tara values(11, 'Ungaria');
```

All Rows Fetched: 6 in 0.005 seconds

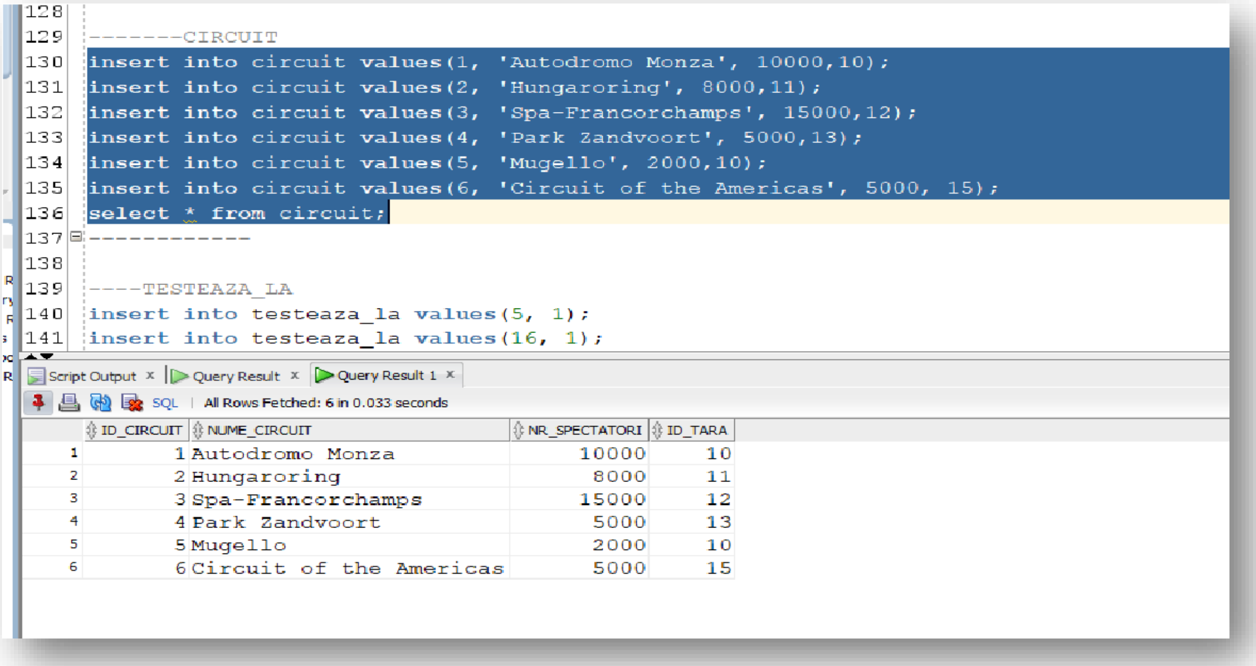
	ID_PILOT	FIRST_NAME	LAST_NAME	EMAIL	SALARY	HIRE_DATE	CONTRACT	VICTORII	PODIUMURI	ID_ECHIPA
1	5	Sebastian	Vettel	seb5@gmail.com	100000	03-MAY-15	5	53	121	30
2	16	Charles	Leclerc	leclerc1@sf.com	20000	11-SEP-18	3	2	12	30
3	44	Lewis	Hamilton	hamilton@yahoo.com	50000	07-OCT-13	1	95	165	32
4	33	Max	Verstappen	max@gmail.com	25000	04-SEP-16	3	10	42	31
5	13	Antonio	Da Costa	anto@yahoo.com	10000	11-AUG-18	2	1	4	60
6	47	Mick	Schumacher	mick47@f2.com	15000	22-JUN-19	2	5	10	40



```
--------TARA
insert into tara values(10, 'Italia');
insert into tara values(11, 'Ungaria');
insert into tara values(12, 'Belgia');
insert into tara values(13, 'Olanda');
insert into tara values(14, 'Turcia');
insert into tara values(15, 'America');
select * from tara;
------------


-------CIRCUIT
insert into circuit values(1, 'Autodromo Monza', 10000,10)
```

All Rows Fetched: 6 in 0.01 seconds

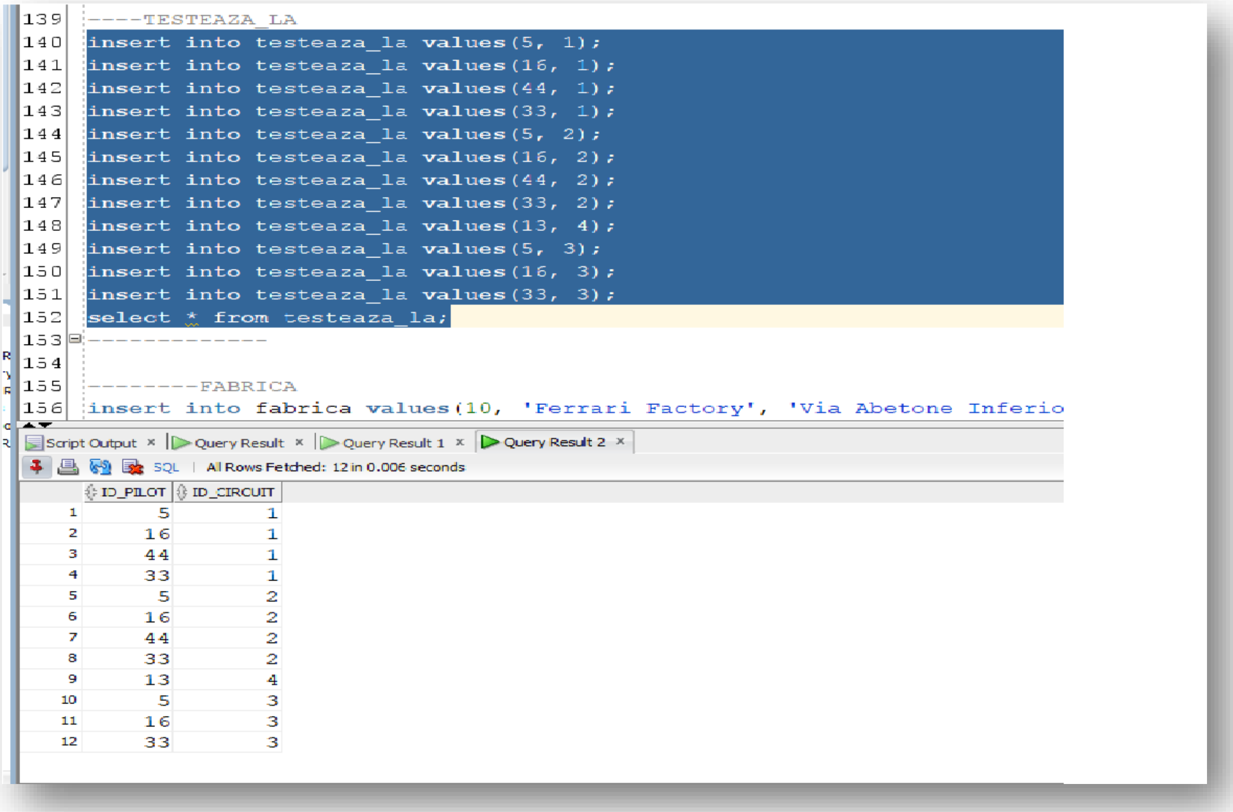
	ID_TARA	NUME_TARA
1	10	Italia
2	11	Ungaria
3	12	Belgia
4	13	Olanda
5	14	Turcia
6	15	America



```
--------CIRCUIT
insert into circuit values(1, 'Autodromo Monza', 10000,10);
insert into circuit values(2, 'Hungaroring', 8000,11);
insert into circuit values(3, 'Spa-Francorchamps', 15000,12);
insert into circuit values(4, 'Park Zandvoort', 5000,13);
insert into circuit values(5, 'Mugello', 2000,10);
insert into circuit values(6, 'Circuit of the Americas', 5000, 15);
select * from circuit;
------------

----TESTEAZA_LA
insert into testeaza_la values(5, 1);
insert into testeaza_la values(16, 1);
```

All Rows Fetched: 6 in 0.033 seconds

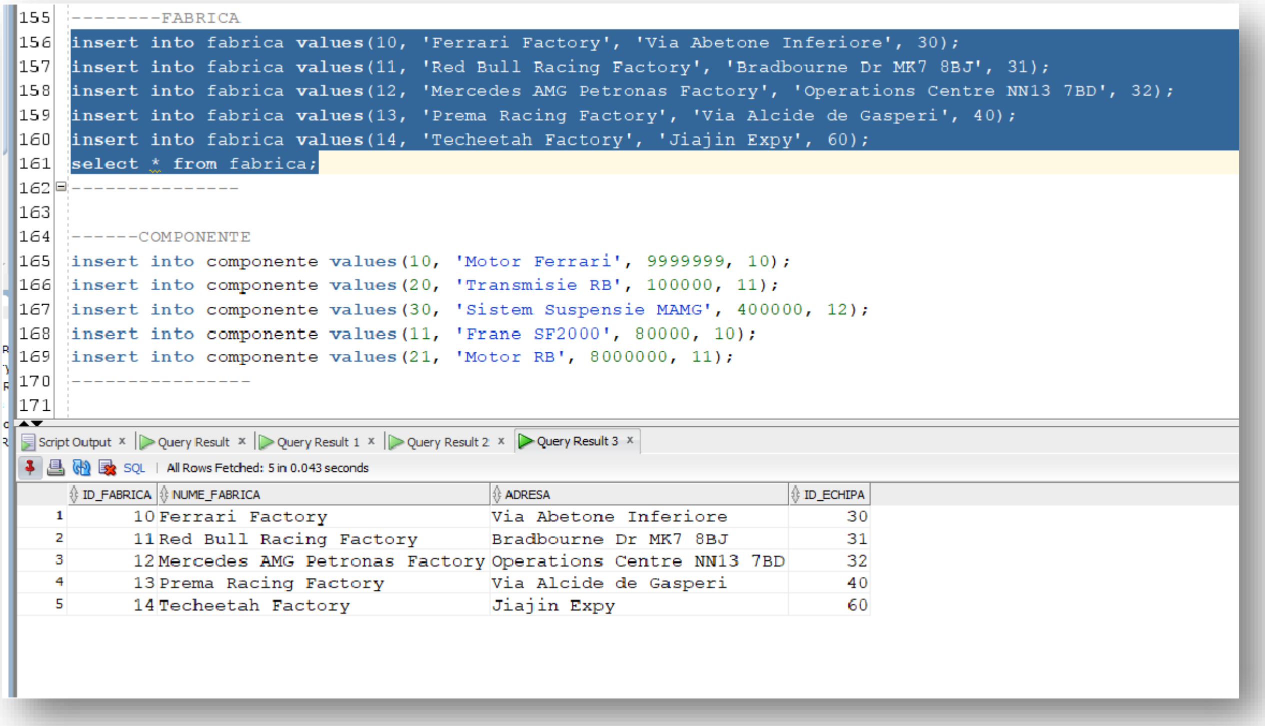
	ID_CIRCUIT	NUME_CIRCUIT	NR_SPECTATORI	ID_TARA
1	1	Autodromo Monza	10000	10
2	2	Hungaroring	8000	11
3	3	Spa-Francorchamps	15000	12
4	4	Park Zandvoort	5000	13
5	5	Mugello	2000	10
6	6	Circuit of the Americas	5000	15



```
----TESTEAZA_LA
insert into testeaza_la values(5, 1);
insert into testeaza_la values(16, 1);
insert into testeaza_la values(44, 1);
insert into testeaza_la values(33, 1);
insert into testeaza_la values(5, 2);
insert into testeaza_la values(16, 2);
insert into testeaza_la values(44, 2);
insert into testeaza_la values(33, 2);
insert into testeaza_la values(13, 4);
insert into testeaza_la values(5, 3);
insert into testeaza_la values(16, 3);
insert into testeaza_la values(33, 3);
select * from testeaza_la;
-------------

---------FABRICA
insert into fabrica values(10, 'Ferrari Factory', 'Via Abetone Inferio
```

All Rows Fetched: 12 in 0.006 seconds

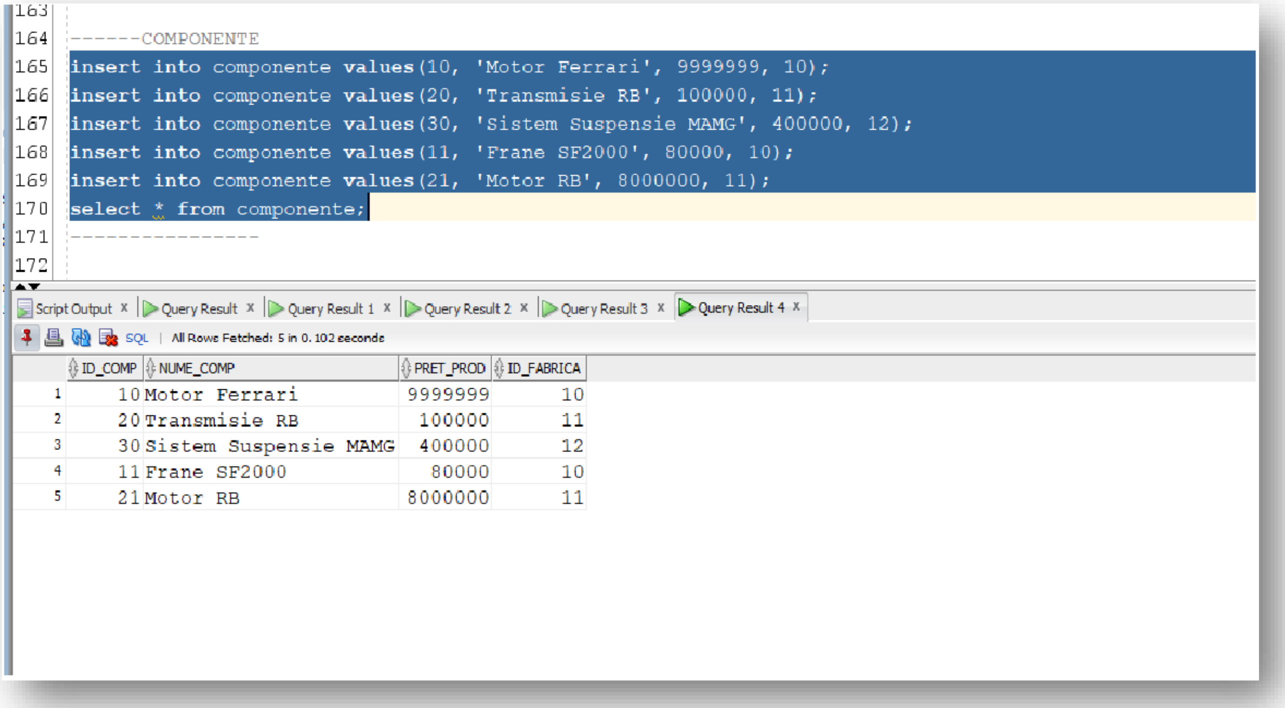
	ID_PILOT	ID_CIRCUIT
1	5	1
2	16	1
3	44	1
4	33	1
5	5	2
6	16	2
7	44	2
8	33	2
9	13	4
10	5	3
11	16	3
12	33	3



```
--------FABRICA
insert into fabrica values(10, 'Ferrari Factory', 'Via Abetone Inferiore', 30);
insert into fabrica values(11, 'Red Bull Racing Factory', 'Bradbourne Dr MK7 8BJ', 31);
insert into fabrica values(12, 'Mercedes AMG Petronas Factory', 'Operations Centre NN13 7BD', 32);
insert into fabrica values(13, 'Prema Racing Factory', 'Via Alcide de Gasperi', 40);
insert into fabrica values(14, 'Techeetah Factory', 'Jiajin Expy', 60);
select * from fabrica;
---------------

------COMPONENTE
insert into componente values(10, 'Motor Ferrari', 9999999, 10);
insert into componente values(20, 'Transmisie RB', 100000, 11);
insert into componente values(30, 'Sistem Suspensie MAMG', 400000, 12);
insert into componente values(11, 'Frane SF2000', 80000, 10);
insert into componente values(21, 'Motor RB', 8000000, 11);
----------------
```

All Rows Fetched: 5 in 0.043 seconds

```
   ID_FABRICA NUME_FABRICA                  ADRESA                     ID_ECHIPA
1          10 Ferrari Factory               Via Abetone Inferiore             30
2          11 Red Bull Racing Factory       Bradbourne Dr MK7 8BJ             31
3          12 Mercedes AMG Petronas Factory Operations Centre NN13 7BD        32
4          13 Prema Racing Factory          Via Alcide de Gasperi             40
5          14 Techeetah Factory             Jiajin Expy                       60
```



```
------COMPONENTE
insert into componente values(10, 'Motor Ferrari', 9999999, 10);
insert into componente values(20, 'Transmisie RB', 100000, 11);
insert into componente values(30, 'Sistem Suspensie MAMG', 400000, 12);
insert into componente values(11, 'Frane SF2000', 80000, 10);
insert into componente values(21, 'Motor RB', 8000000, 11);
select * from componente;
----------------
```

All Rows Fetched: 5 in 0.102 seconds

```
   ID_COMP NUME_COMP             PRET_PROD ID_FABRICA
1       10 Motor Ferrari           9999999         10
2       20 Transmisie RB            100000         11
3       30 Sistem Suspensie MAMG    400000         12
4       11 Frane SF2000              80000         10
5       21 Motor RB                8000000         11
```

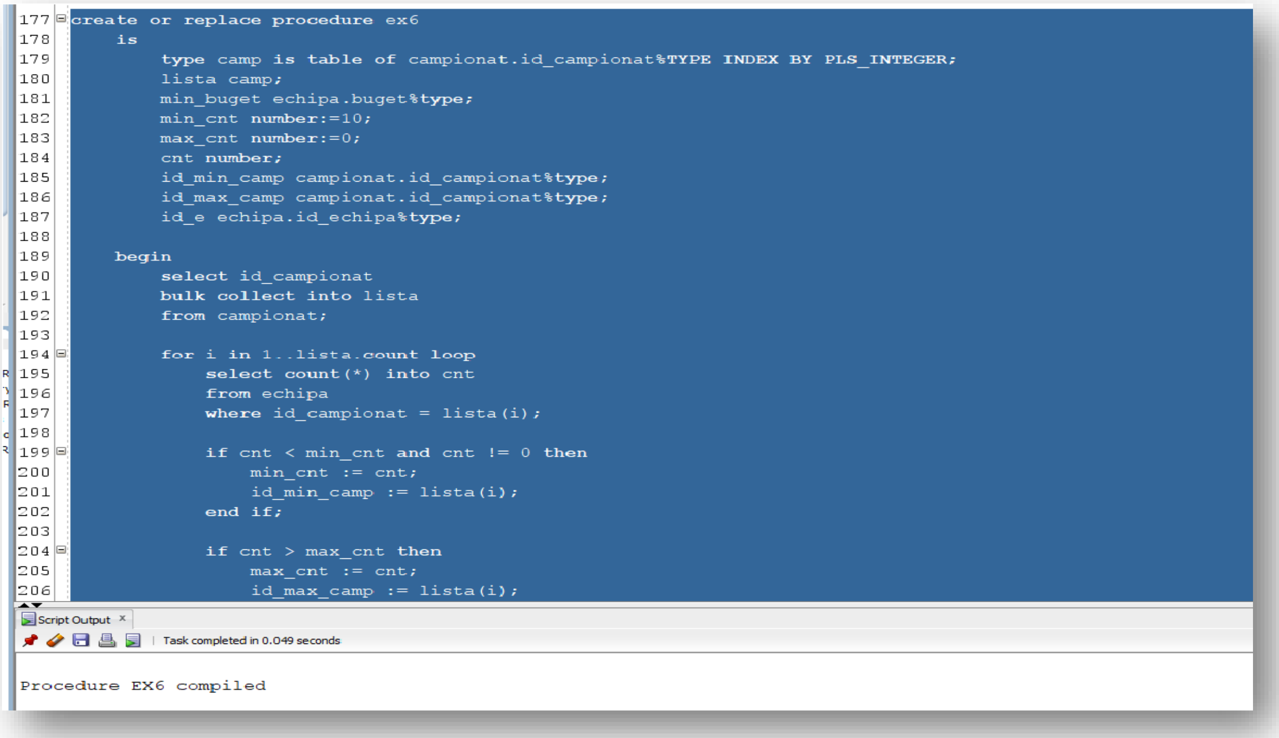
6.

Pentru campionatul cu cele mai putine echipe(numar diferit de zero), inserati o noua echipa cu bugetul 10000 si afisati echipa cu cel mai mic buget din campionatul cu cele mai multe echipe. Afisati modificarile.

```
CREATE SEQUENCE id_echipe START WITH 105;


create or replace procedure ex6
  is
      type camp is table of campionat.id_campionat%TYPE INDEX BY PLS_INTEGER;
      lista camp;
      min_buget echipa.buget%type;
      min_cnt number:=10;
      max_cnt number:=0;
      cnt number;
      id_min_camp campionat.id_campionat%type;
      id_max_camp campionat.id_campionat%type;
      id_e echipa.id_echipa%type;

  begin
      select id_campionat
      bulk collect into lista
      from campionat;
```

```
    for i in 1..lista.count loop
      select count(*) into cnt
      from echipa
      where id_campionat = lista(i);

      if cnt < min_cnt and cnt != 0 then
        min_cnt := cnt;
        id_min_camp := lista(i);
      end if;

      if cnt > max_cnt then
        max_cnt := cnt;
        id_max_camp := lista(i);
        select min(buget) into min_buget
        from echipa
        where id_campionat = lista(i);
      end if;
    end loop;

    insert into echipa values(id_echipe.nextval, 'EX6 RACING',
10000, 0, id_min_camp);
    dbms_output.put_line('A fost inserata echipa in campionatul
cu id ' || id_min_camp);

    select id_echipa into id_e
```

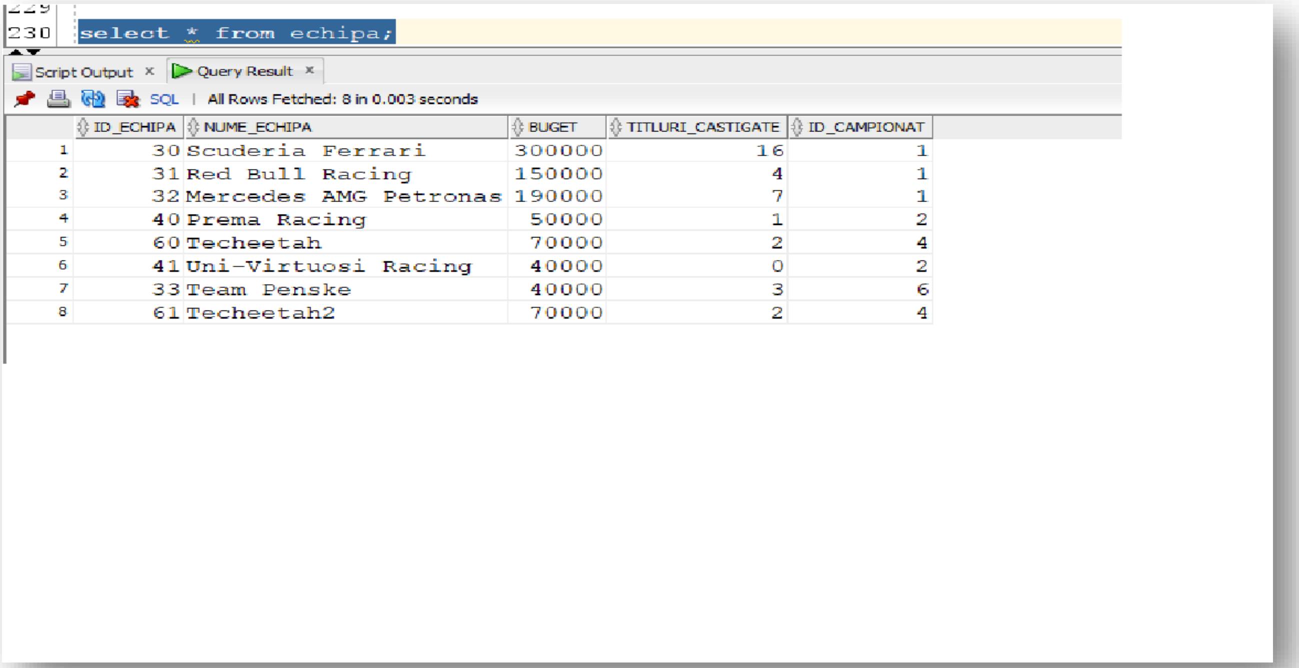
```
        from echipa
        where id_campionat = id_max_camp and buget = min_buget;

        dbms_output.put_line('Echipa cu cel mai mic buget are id-ul ' || id_e);

end ex6;

begin
    ex6;
end;
/
```



```
create or replace procedure ex6
    is
        type camp is table of campionat.id_campionat%TYPE INDEX BY PLS_INTEGER;
        lista camp;
        min_buget echipa.buget%type;
        min_cnt number:=10;
        max_cnt number:=0;
        cnt number;
        id_min_camp campionat.id_campionat%type;
        id_max_camp campionat.id_campionat%type;
        id_e echipa.id_echipa%type;

    begin
        select id_campionat
        bulk collect into lista
        from campionat;

        for i in 1..lista.count loop
            select count(*) into cnt
            from echipa
            where id_campionat = lista(i);

            if cnt < min_cnt and cnt != 0 then
                min_cnt := cnt;
                id_min_camp := lista(i);
            end if;

            if cnt > max_cnt then
                max_cnt := cnt;
                id_max_camp := lista(i);
```

```
Procedure EX6 compiled
```

Tabelul ECHIPA inainte de apelarea procedurii:

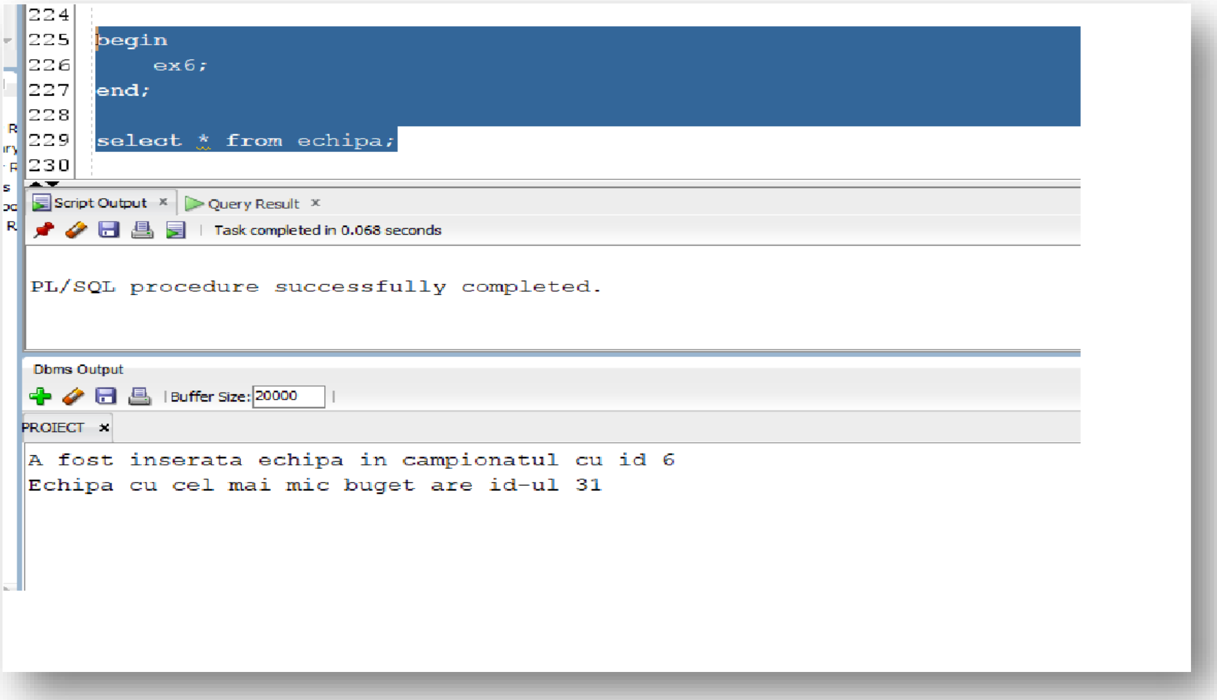


```
select * from echipa;
```

All Rows Fetched: 8 in 0.003 seconds

	ID_ECHIPA	NUME_ECHIPA	BUGET	TITLURI_CASTIGATE	ID_CAMPIONAT
1	30	Scuderia Ferrari	300000	16	1
2	31	Red Bull Racing	150000	4	1
3	32	Mercedes AMG Petronas	190000	7	1
4	40	Prema Racing	50000	1	2
5	60	Techeetah	70000	2	4
6	41	Uni-Virtuosi Racing	40000	0	2
7	33	Team Penske	40000	3	6
8	61	Techeetah2	70000	2	4

Campionatul cu cele mai putine echipe: id_campionat - 6 (are o singura echipa), iar campionatul cu cele mai multe echipe este: id_campionat – 1(are trei echipe). In urma apelarii ex6 va fi adaugata echipa din enunt in campionatul cu id 6, iar echipa cu cel mai mic buget din campionatul 1 este Red Bull Racing, astfel va fi afisat id-ul 31.



```
begin
      ex6;
end;

select * from echipa;
```

```
PL/SQL procedure successfully completed.
```

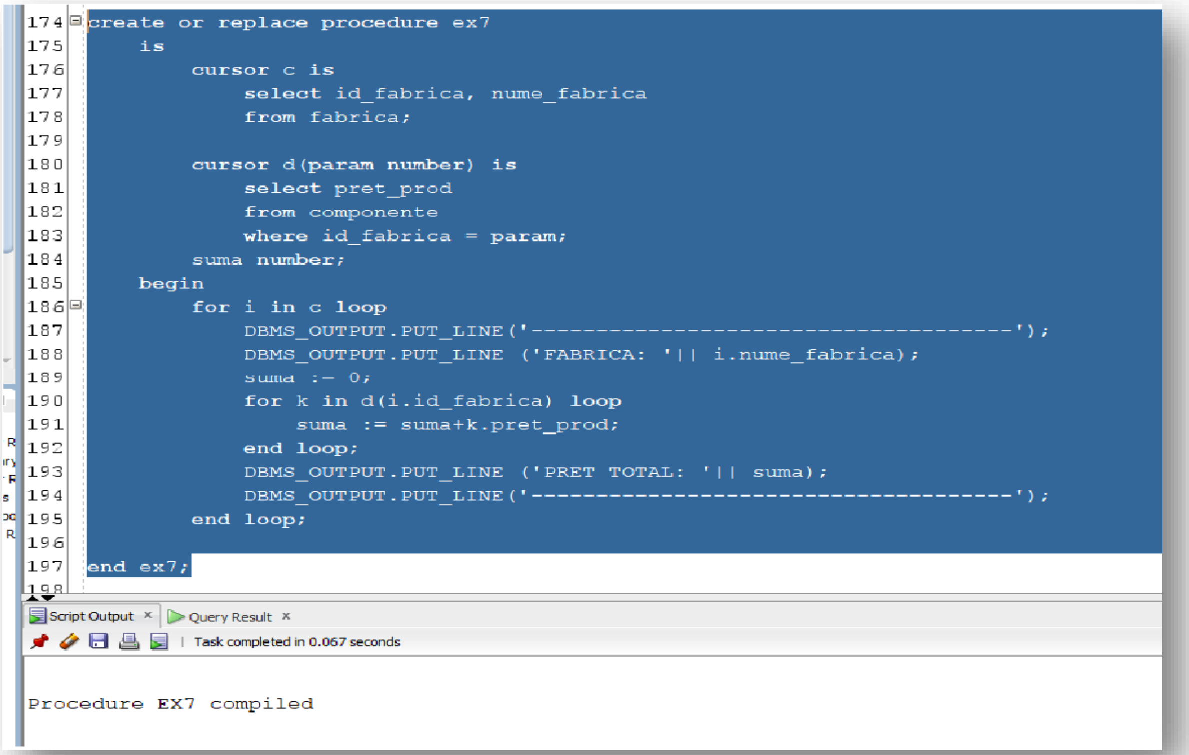
```
A fost inserata echipa in campionatul cu id 6
Echipa cu cel mai mic buget are id-ul 31
```

7.

Sa se afiseze pentru fiecare fabrica, pretul total al componentelor.

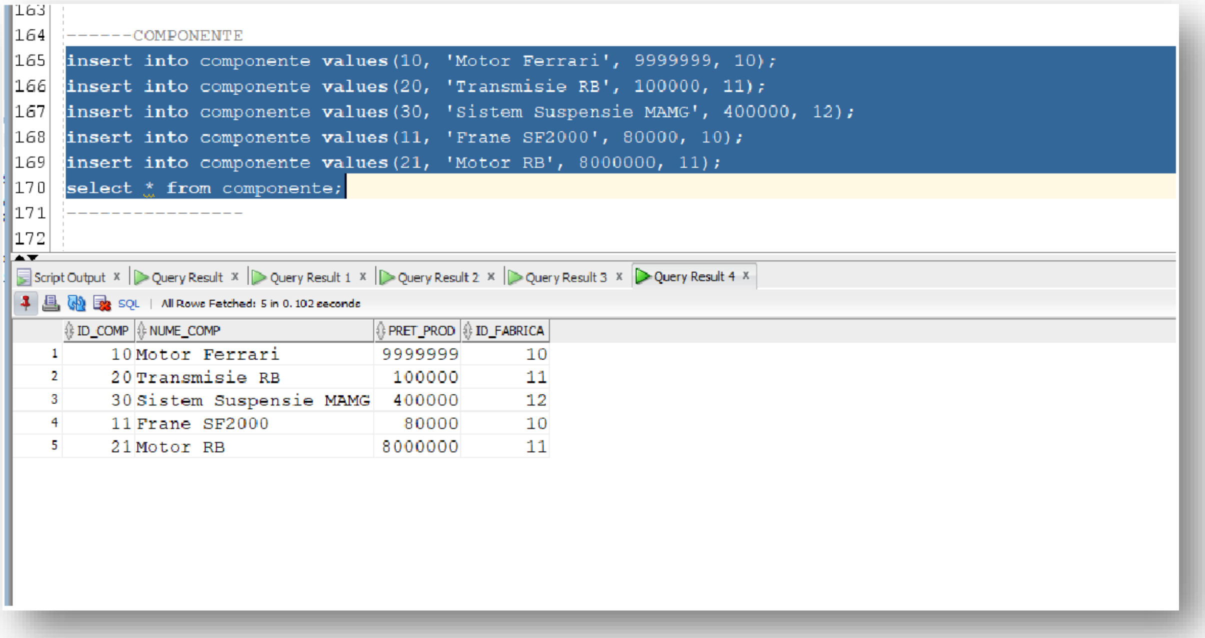
```
create or replace procedure ex7
  is
    cursor c is
      select id_fabrica, nume_fabrica
      from fabrica;
```

```
        cursor d(param number) is
            select pret_prod
            from componente
            where id_fabrica = param;
        suma number;
    begin
        for i in c loop
            DBMS_OUTPUT.PUT_LINE('------------------------------------');
            DBMS_OUTPUT.PUT_LINE ('FABRICA: '|| i.nume_fabrica);
            suma := 0;
            for k in d(i.id_fabrica) loop
                suma := suma+k.pret_prod;
            end loop;
            DBMS_OUTPUT.PUT_LINE ('PRET TOTAL: '|| suma);
            DBMS_OUTPUT.PUT_LINE('------------------------------------');
        end loop;

end ex7;
 begin
    ex7;
end;
/
```



```
create or replace procedure ex7
    is
        cursor c is
            select id_fabrica, nume_fabrica
            from fabrica;

        cursor d(param number) is
            select pret_prod
            from componente
            where id_fabrica = param;
        suma number;
    begin
        for i in c loop
            DBMS_OUTPUT.PUT_LINE('-------------------------------------');
            DBMS_OUTPUT.PUT_LINE ('FABRICA: '|| i.nume_fabrica);
            suma := 0;
            for k in d(i.id_fabrica) loop
                suma := suma+k.pret_prod;
            end loop;
            DBMS_OUTPUT.PUT_LINE ('PRET TOTAL: '|| suma);
            DBMS_OUTPUT.PUT_LINE('-------------------------------------');
        end loop;

end ex7;
```

```
Procedure EX7 compiled
```



```
------COMPONENTE
insert into componente values(10, 'Motor Ferrari', 9999999, 10);
insert into componente values(20, 'Transmisie RB', 100000, 11);
insert into componente values(30, 'Sistem Suspensie MAMG', 400000, 12);
insert into componente values(11, 'Frane SF2000', 80000, 10);
insert into componente values(21, 'Motor RB', 8000000, 11);
select * from componente;
----------------
```

	ID_COMP	NUME_COMP	PRET_PROD	ID_FABRICA
1	10	Motor Ferrari	9999999	10
2	20	Transmisie RB	100000	11
3	30	Sistem Suspensie MAMG	400000	12
4	11	Frane SF2000	80000	10
5	21	Motor RB	8000000	11

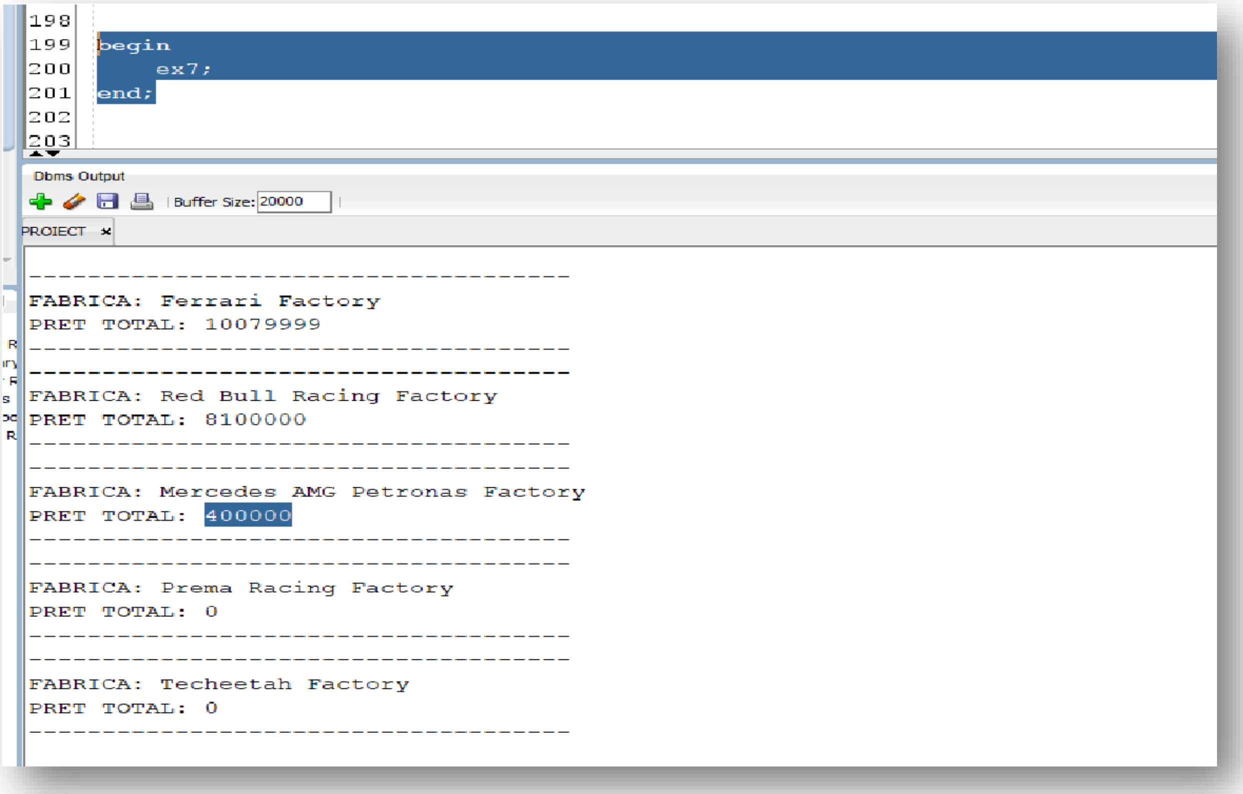
Suma componentelor din fabrica cu id 10(Ferrari Factory) este: 10079999.

Suma componentelor din fabrica cu id 11(Red Bull Racing Factory) este: 8100000.

Suma componentelor din fabrica cu id 12(Mercedes AMG Petronas Factory) este: 400000.

Suma componentelor din fabrica cu id 13(Prema Racing Factory) este: 0.

Suma componentelor din fabrica cu id 14(Techeetah Factory) este: 0.



```
begin
      ex7;
end;
```

```
------------------------------------
FABRICA: Ferrari Factory
PRET TOTAL: 10079999
------------------------------------
------------------------------------
FABRICA: Red Bull Racing Factory
PRET TOTAL: 8100000
------------------------------------
------------------------------------
FABRICA: Mercedes AMG Petronas Factory
PRET TOTAL: 400000
------------------------------------
------------------------------------
FABRICA: Prema Racing Factory
PRET TOTAL: 0
------------------------------------
------------------------------------
FABRICA: Techeetah Factory
PRET TOTAL: 0
------------------------------------
```

8.

Pentru un pilot dat ca parametru sa se returneze numarul total al victoriilor pilotilor din campionatul in care concureaza acesta.

create or replace function ex8(v_last_name pilot.last_name%type) return number

is

type echipe is table of echipa.id_echipa%TYPE INDEX BY PLS_INTEGER;

lista echipe;

id_e pilot.id_echipa%type;

nume campionat.nume_campionat%type;

total number := 0;

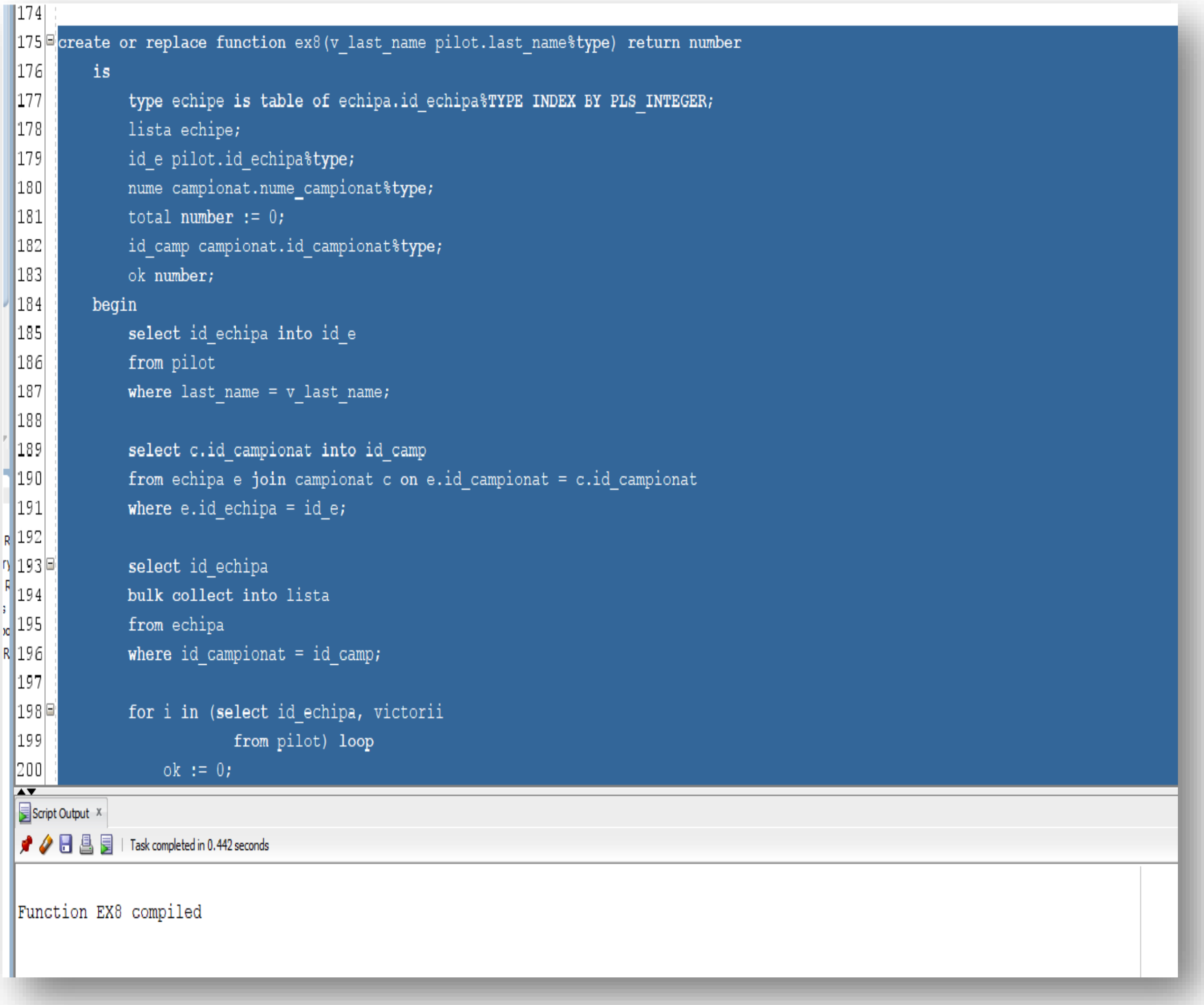
id_camp campionat.id_campionat%type;

```
         ok number;

       begin

         select id_echipa into id_e

         from pilot

         where last_name = v_last_name;


         select c.id_campionat into id_camp

         from echipa e join campionat c on e.id_campionat =
c.id_campionat

         where e.id_echipa = id_e;


         select id_echipa

         bulk collect into lista

         from echipa

         where id_campionat = id_camp;


         for i in (select id_echipa, victorii

               from pilot) loop

           ok := 0;

           for j in 1..lista.count loop

             if i.id_echipa = lista(j) then

               ok := 1;

             end if;

             exit when ok = 1;
```

```
                end loop;
                if ok = 1 then
                    total := total + i.victorii;
                end if;
            end loop;

            return total;

            EXCEPTION
                WHEN NO_DATA_FOUND THEN
                DBMS_OUTPUT.PUT_LINE ('Nu exista pilot cu acest nume');
                return -1;

                WHEN TOO_MANY_ROWS THEN
                DBMS_OUTPUT.PUT_LINE ('Exista mai multi piloti cu acest nume');
                return -2;

    end;
    begin
        DBMS_OUTPUT.PUT_LINE(ex8('Vettel'));
        DBMS_OUTPUT.PUT_LINE(ex8('Hernest'));
        DBMS_OUTPUT.PUT_LINE(ex8('Schumacher'));
```

end;

/



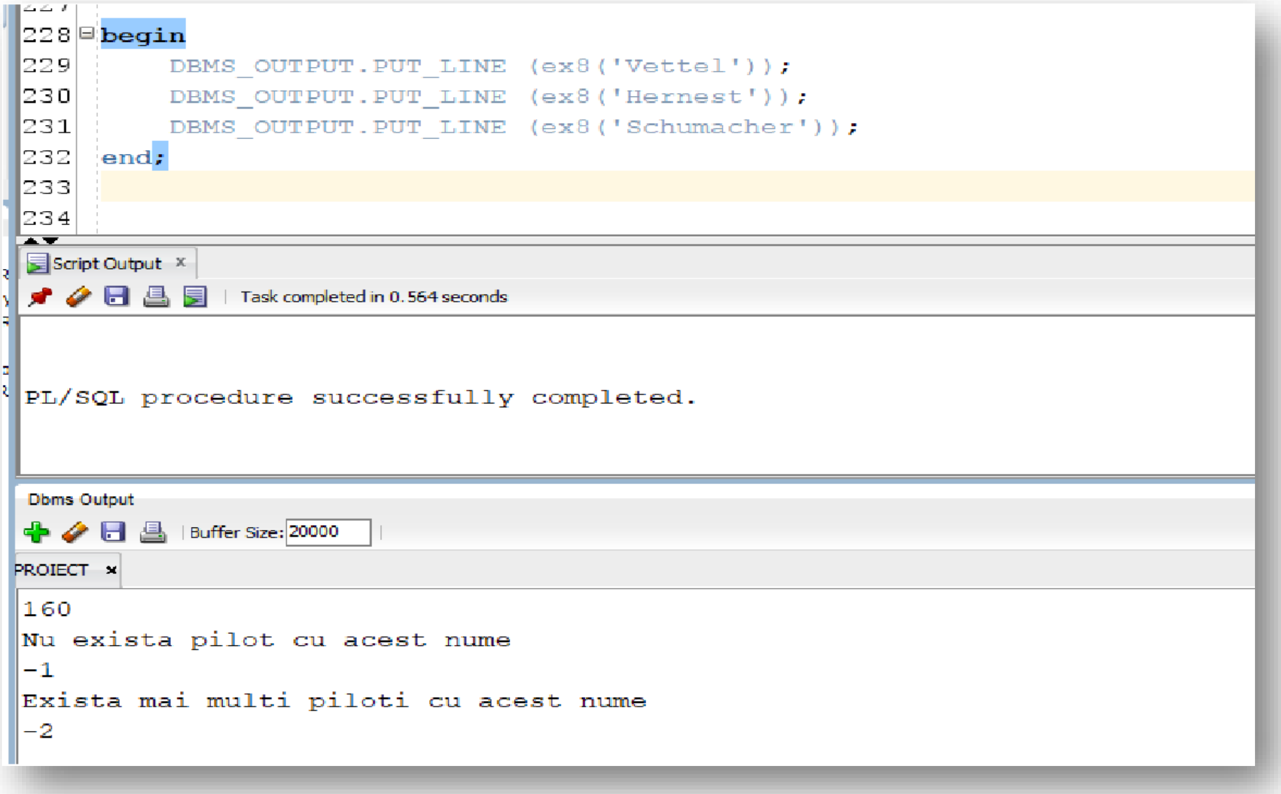
```
create or replace function ex8(v_last_name pilot.last_name%type) return number
    is
        type echipe is table of echipa.id_echipa%TYPE INDEX BY PLS_INTEGER;
        lista echipe;
        id_e pilot.id_echipa%type;
        nume campionat.nume_campionat%type;
        total number := 0;
        id_camp campionat.id_campionat%type;
        ok number;
    begin
        select id_echipa into id_e
        from pilot
        where last_name = v_last_name;

        select c.id_campionat into id_camp
        from echipa e join campionat c on e.id_campionat = c.id_campionat
        where e.id_echipa = id_e;

        select id_echipa
        bulk collect into lista
        from echipa
        where id_campionat = id_camp;

        for i in (select id_echipa, victorii
                    from pilot) loop
            ok := 0;
```

```
Function EX8 compiled
```

Daca apelam ex8("Vettel"), vom avea toti pilotii care concureaza in campionatul cu id 1: Vettel – 53 de victorii, Leclerc - 2 victorii, Hamilton – 95 de victorii, Verstappen – 10 victorii => In total sunt 160 de victorii.

Prima exceptie: nu exista pilotul cu numele dat ca parametru.

A doua exceptie: exista mai multi piloti cu acelasi nume.(ulterior a fost adaugat un alt pilot cu acelasi nume: insert into pilot values(48, 'Michael', 'Schumacher', 'legend@f1.com', 555555, TO_DATE('22/06/1996', 'dd/mm/yyyy'), 99, 91, 155, 30);   )



```
begin
     DBMS_OUTPUT.PUT_LINE (ex8('Vettel'));
     DBMS_OUTPUT.PUT_LINE (ex8('Hernest'));
     DBMS_OUTPUT.PUT_LINE (ex8('Schumacher'));
end;
```

```
PL/SQL procedure successfully completed.
```

```
160
Nu exista pilot cu acest nume
-1
Exista mai multi piloti cu acest nume
-2
```

9.

Pentru circuitul cu cel mai mic numar de spectatori din tara data ca parametru, sa se transfere pilotul cu cel mai mic salariu care a testat la acel circuit, la echipa cu cele mai multe titluri castigate cu un salariu dublu(bugetul noii echipe va fi scazut corespunzator), iar pentru echipa care a pierdut pilotul sa se construiasca o noua fabrica cu jumatate din banii repartizati fostului pilot(bugetul se va schimba corespunzator).

CREATE SEQUENCE new_factory START WITH 50;

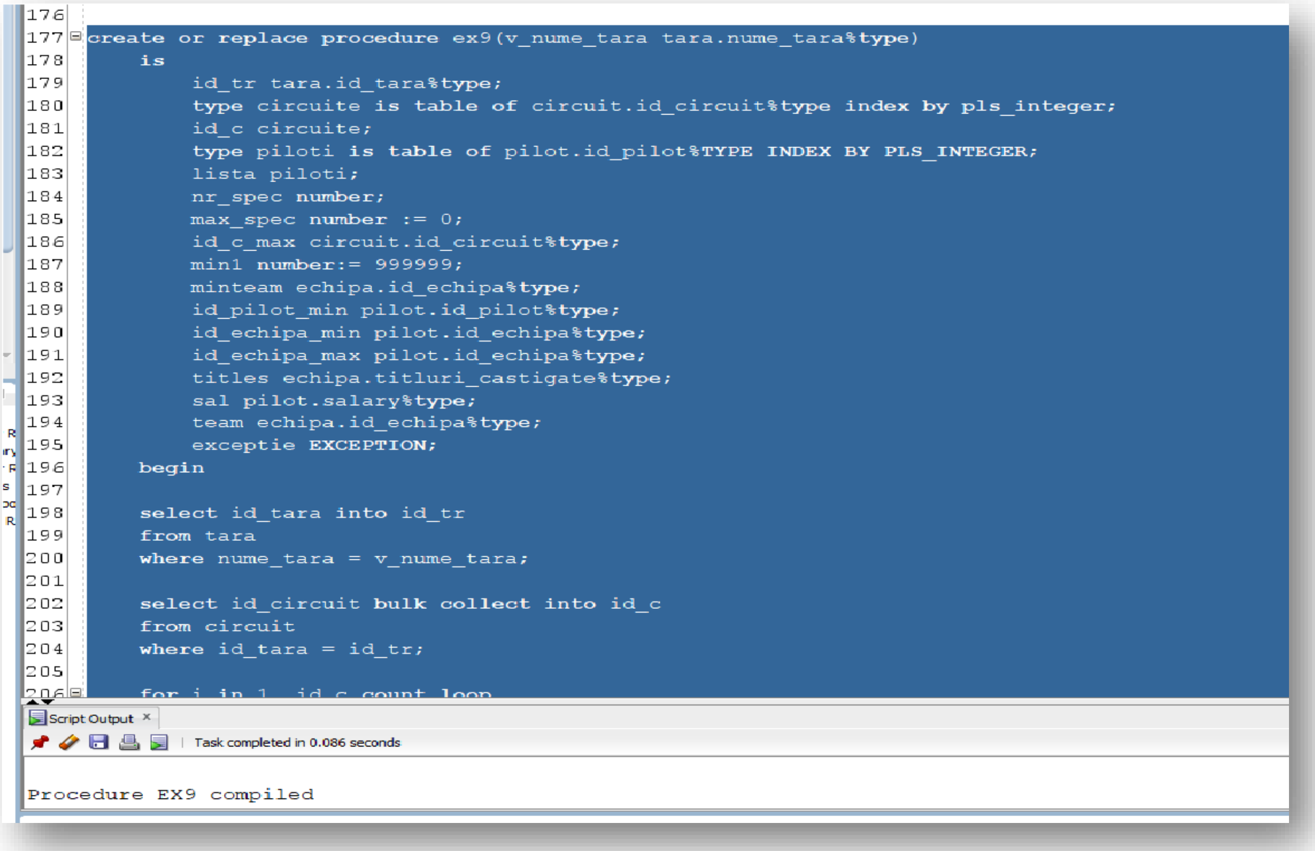
```
create or replace procedure ex9(v_nume_tara
tara.nume_tara%type)
    is
        id_tr tara.id_tara%type;
        type circuite is table of circuit.id_circuit%type index by
pls_integer;
        id_c circuite;
        type piloti is table of pilot.id_pilot%TYPE INDEX BY
PLS_INTEGER;
        lista piloti;
        nr_spec number;
        max_spec number := 0;
        id_c_max circuit.id_circuit%type;
        min1 number:= 999999;
        minteam echipa.id_echipa%type;
        id_pilot_min pilot.id_pilot%type;
        id_echipa_min pilot.id_echipa%type;
        id_echipa_max pilot.id_echipa%type;
        titles echipa.titluri_castigate%type;
        sal pilot.salary%type;
        team echipa.id_echipa%type;
        exceptie EXCEPTION;
    begin

    select id_tara into id_tr
```

```
from tara
where nume_tara = v_nume_tara;

select id_circuit bulk collect into id_c
from circuit
where id_tara = id_tr;

for i in 1..id_c.count loop
   select nr_spectatori into nr_spec
   from circuit
   where id_circuit = id_c(i);

   if nr_spec > max_spec then
      max_spec := nr_spec;
      id_c_max := id_c(i);
   end if;
end loop;

select id_pilot
bulk collect into lista
from testeaza_la
where id_circuit = id_c_max;

for i in 1..lista.count loop
```

```
   select salary, id_echipa into sal, team
   from pilot
   where id_pilot = lista(i);

   if sal < min1 then
      min1 := sal;
      minteam := team;
      id_pilot_min := lista(i);
   end if;
end loop;

select id_echipa, titluri_castigate into id_echipa_max, titles
from echipa
where titluri_castigate in (select max(titluri_castigate)
                     from echipa);
if minteam = id_echipa_max then
   raise exceptie;
end if;

update pilot set id_echipa = id_echipa_max,
             salary = salary * 2,
             hire_date = SYSDATE,
             contract = 1
         where id_pilot = id_pilot_min;
   select salary into sal
   from pilot
   where id_pilot = id_pilot_min;

   update echipa set buget = buget - sal where id_echipa = id_echipa_max;

   insert into fabrica values(new_factory.nextval, 'New Factory', 'New Street', minteam);

   update echipa set buget = buget + sal/4 where id_echipa = minteam;

   EXCEPTION
      WHEN NO_DATA_FOUND THEN
         DBMS_OUTPUT.PUT_LINE('Nu exista tara cu acest nume');
      WHEN exceptie THEN
         DBMS_OUTPUT.PUT_LINE('Echipa la care trebuie transferat pilotul corespunde cu echipa actuala');
end ex9;
begin
   ex9('Italia');
   ex9('Test');
   ex9('Italia');
```

end;

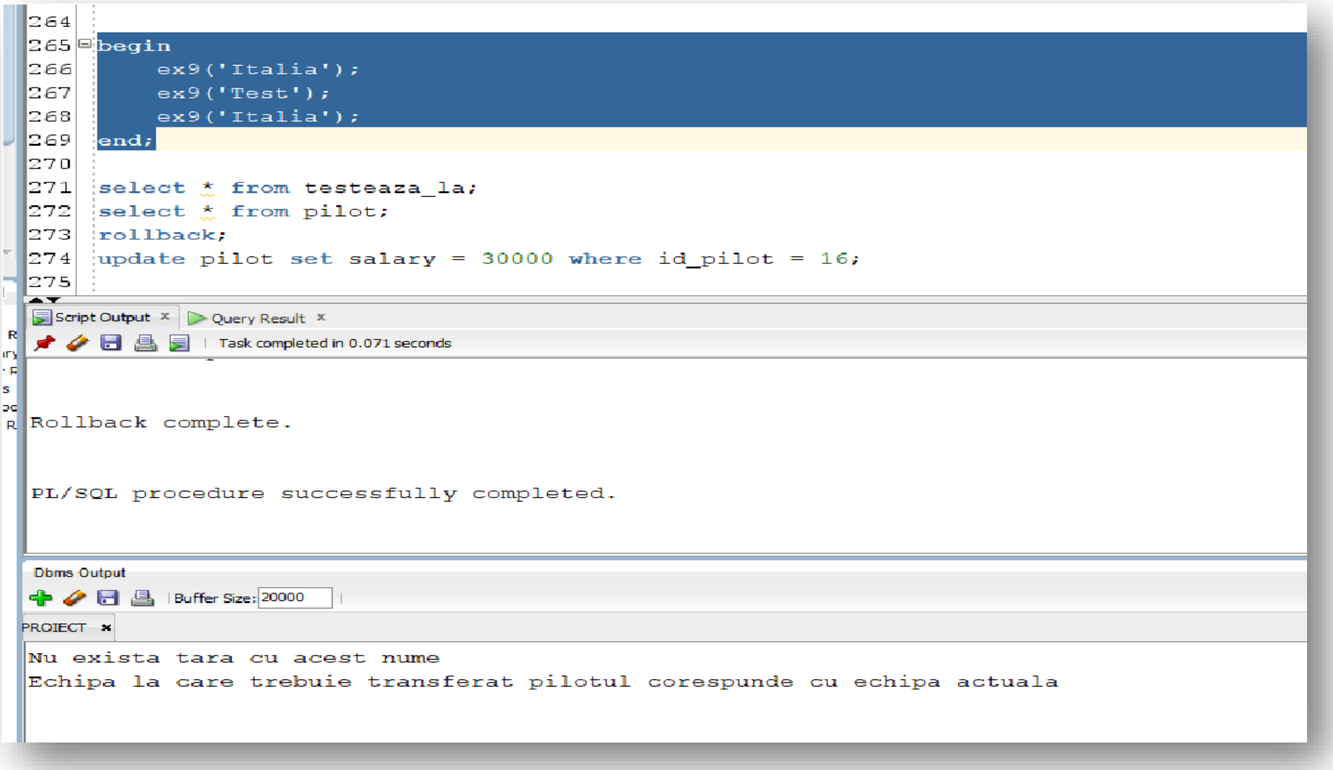
/



```
create or replace procedure ex9(v_nume_tara tara.nume_tara%type)
    is
        id_tr tara.id_tara%type;
        type circuite is table of circuit.id_circuit%type index by pls_integer;
        id_c circuite;
        type piloti is table of pilot.id_pilot%TYPE INDEX BY PLS_INTEGER;
        lista piloti;
        nr_spec number;
        max_spec number := 0;
        id_c_max circuit.id_circuit%type;
        min1 number:= 999999;
        minteam echipa.id_echipa%type;
        id_pilot_min pilot.id_pilot%type;
        id_echipa_min pilot.id_echipa%type;
        id_echipa_max pilot.id_echipa%type;
        titles echipa.titluri_castigate%type;
        sal pilot.salary%type;
        team echipa.id_echipa%type;
        exceptie EXCEPTION;
    begin

    select id_tara into id_tr
    from tara
    where nume_tara = v_nume_tara;

    select id_circuit bulk collect into id_c
    from circuit
    where id_tara = id_tr;

    for i in 1..id_c.count loop
```

Task completed in 0.086 seconds

```
Procedure EX9 compiled
```



```
begin
     ex9('Italia');
     ex9('Test');
     ex9('Italia');
end;

select * from testeaza_la;
select * from pilot;
rollback;
update pilot set salary = 30000 where id_pilot = 16;
```

Task completed in 0.071 seconds

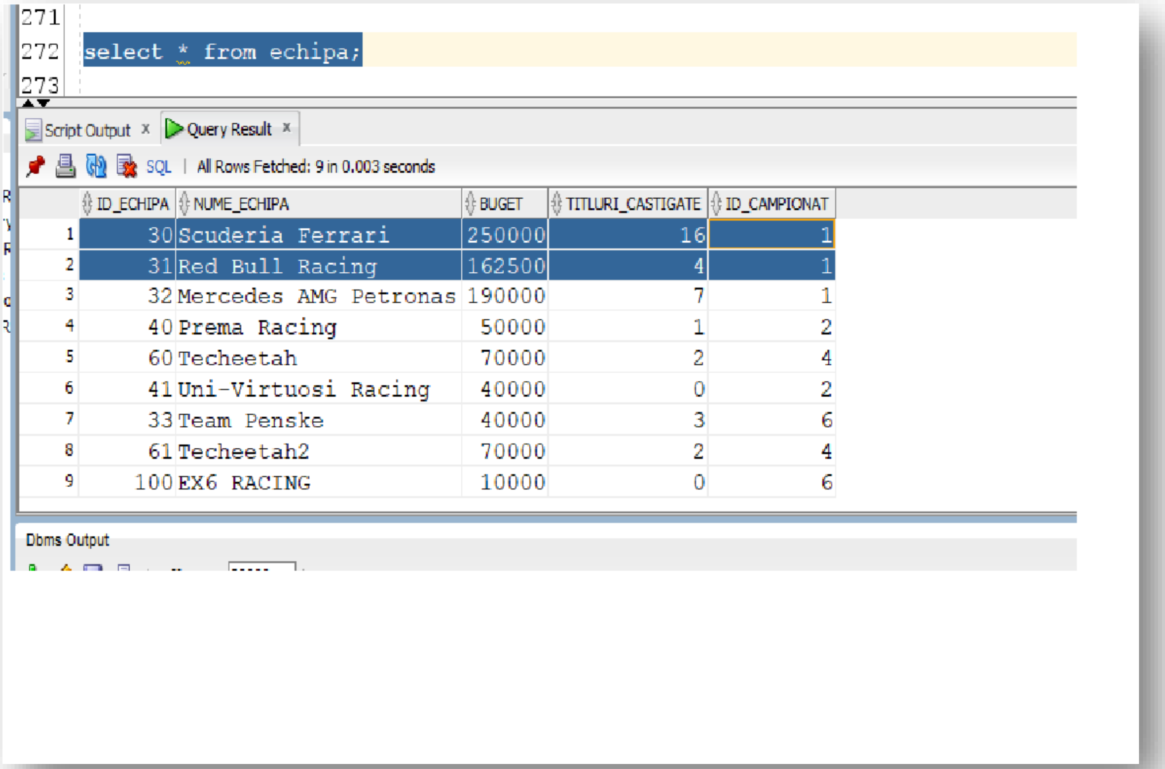
```
Rollback complete.


PL/SQL procedure successfully completed.
```

```
Nu exista tara cu acest nume
Echipa la care trebuie transferat pilotul corespunde cu echipa actuala
```

In exemplul de mai sus, pilotul cu cel mai mic salariu care a testat in Italia este Verstappen(id 33), cu un salariu de 25000(a fost actualizata valoarea salariului pilotului cu id 16, deoarece se afla in situatia cu cel mai mic salariu si nu s-ar fi produs schimbarea).

Pentru parametru Test se afiseaza mesajul “Nu exista tara”.

Apoi, la reapelarea metodei cu parametrul Italia, pilotul cu id 16 are salariul 30000, devenind pilotul cu cel mai mic salariu dupa actualizarea de mai sus. Astfel, fiind din echipa la care trebuie transferat, se afiseaza mesajul corespunzator.

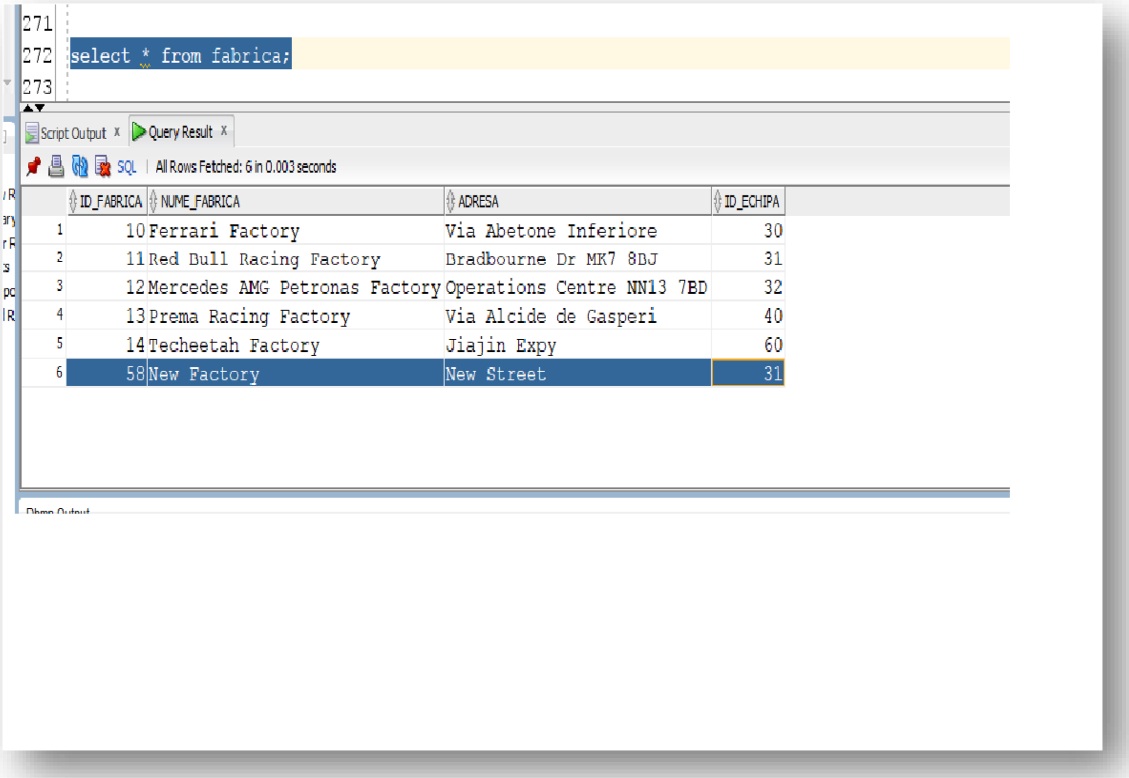


```
select * from echipa;
```

All Rows Fetched: 9 in 0.003 seconds

	ID_ECHIPA	NUME_ECHIPA	BUGET	TITLURI_CASTIGATE	ID_CAMPIONAT
1	30	Scuderia Ferrari	250000	16	1
2	31	Red Bull Racing	162500	4	1
3	32	Mercedes AMG Petronas	190000	7	1
4	40	Prema Racing	50000	1	2
5	60	Techeetah	70000	2	4
6	41	Uni-Virtuosi Racing	40000	0	2
7	33	Team Penske	40000	3	6
8	61	Techeetah2	70000	2	4
9	100	EX6 RACING	10000	0	6

In poza de sus se pot observa schimbarile in bugetul echipelor(Ferrari are un buget de 250000 de la 300000, iar Redbull de 162500 de la 150000).



```
select * from fabrica;
```

All Rows Fetched: 6 in 0.003 seconds

	ID_FABRICA	NUME_FABRICA	ADRESA	ID_ECHIPA
1	10	Ferrari Factory	Via Abetone Inferiore	30
2	11	Red Bull Racing Factory	Bradbourne Dr MK7 8BJ	31
3	12	Mercedes AMG Petronas Factory	Operations Centre NN13 7BD	32
4	13	Prema Racing Factory	Via Alcide de Gasperi	40
5	14	Techeetah Factory	Jiajin Expy	60
6	58	New Factory	New Street	31

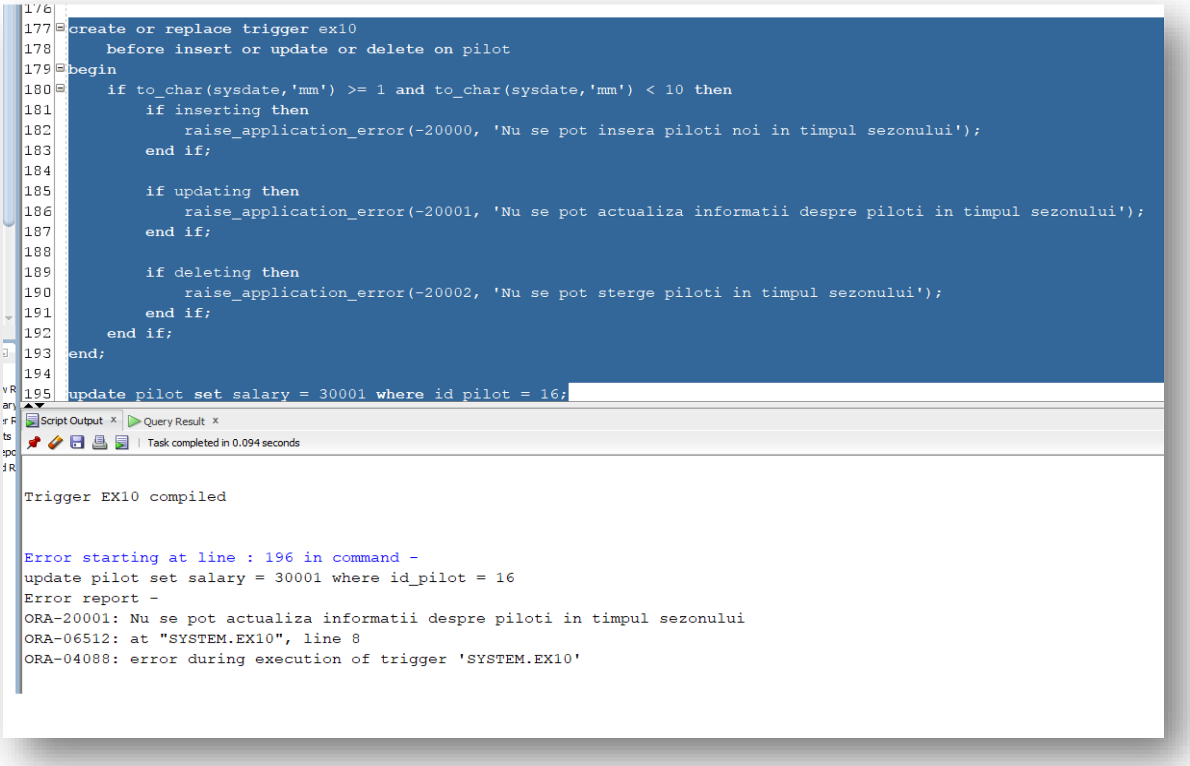
Mai sus se poate observa noua fabrica adaugata in urma transferului, in dreptul echipei cu id 31, care a pierdut pilotul.

10.

Triggerul nu permite modificarea tabelului pilot in timpul sezonului regulat(ianuarie-octombrie).

```
create or replace trigger ex10
   before insert or update or delete on pilot
begin
   if to_char(sysdate,'mm') >= 1 and to_char(sysdate,'mm') < 10
then
      if inserting then
         raise_application_error(-20000, 'Nu se pot insera piloti noi in
timpul sezonului');
```

```
        end if;

        if updating then
            raise_application_error(-20001, 'Nu se pot actualiza informatii despre piloti in timpul sezonului');
        end if;

        if deleting then
            raise_application_error(-20002, 'Nu se pot sterge piloti in timpul sezonului');
        end if;
    end if;
end;
```



```
create or replace trigger ex10
    before insert or update or delete on pilot
begin
    if to_char(sysdate,'mm') >= 1 and to_char(sysdate,'mm') < 10 then
        if inserting then
            raise_application_error(-20000, 'Nu se pot insera piloti noi in timpul sezonului');
        end if;

        if updating then
            raise_application_error(-20001, 'Nu se pot actualiza informatii despre piloti in timpul sezonului');
        end if;

        if deleting then
            raise_application_error(-20002, 'Nu se pot sterge piloti in timpul sezonului');
        end if;
    end if;
end;

update pilot set salary = 30001 where id_pilot = 16;
```

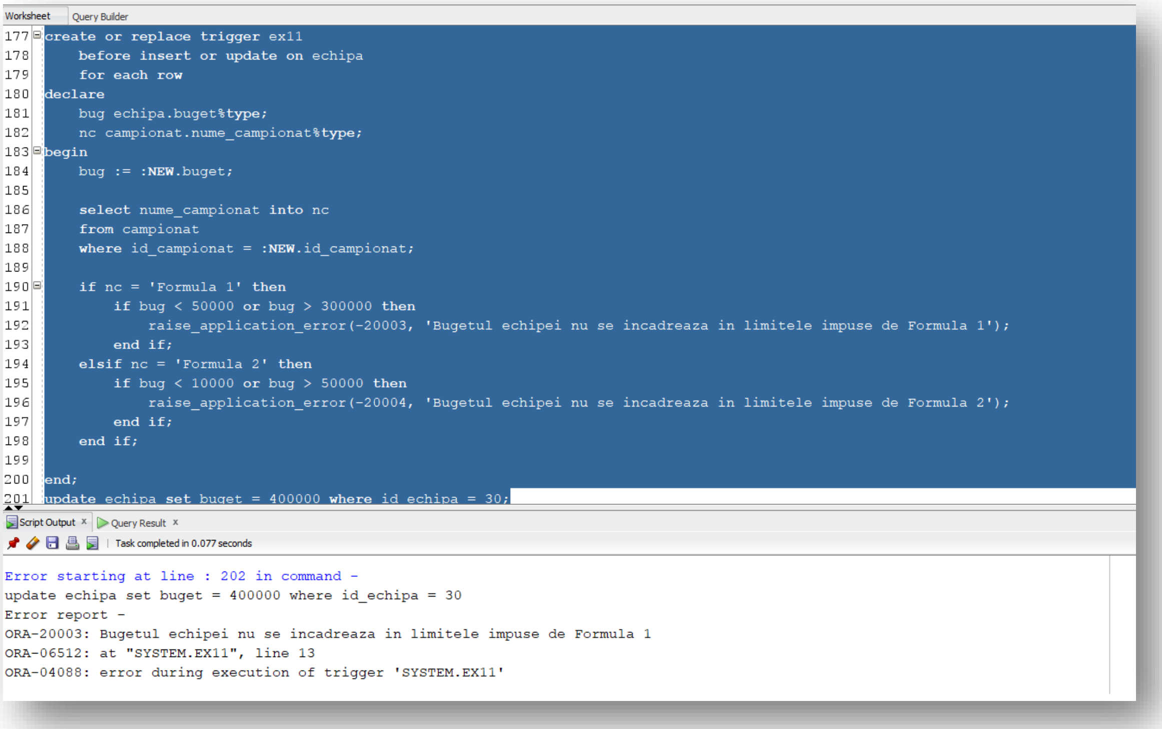
```
Trigger EX10 compiled


Error starting at line : 196 in command -
update pilot set salary = 30001 where id_pilot = 16
Error report -
ORA-20001: Nu se pot actualiza informatii despre piloti in timpul sezonului
ORA-06512: at "SYSTEM.EX10", line 8
ORA-04088: error during execution of trigger 'SYSTEM.EX10'
```

11.

Triggerul intoarce o eroare atunci cand este introdus sau actualizat bugetul unei echipe intr-un mod ce nu corespunde limitelor impuse de campionat.

```
create or replace trigger ex11
   before insert or update on echipa
   for each row
declare
   bug echipa.buget%type;
   nc campionat.nume_campionat%type;
begin
   bug := :NEW.buget;

   select nume_campionat into nc
   from campionat
   where id_campionat = :NEW.id_campionat;

   if nc = 'Formula 1' then
      if bug < 50000 or bug > 300000 then
         raise_application_error(-20003, 'Bugetul echipei nu se
incadreaza in limitele impuse de Formula 1');
      end if;
   elsif nc = 'Formula 2' then
      if bug < 10000 or bug > 50000 then
         raise_application_error(-20004, 'Bugetul echipei nu se
incadreaza in limitele impuse de Formula 2');
```

```
        end if;
    end if;

end;
/
update echipa set buget = 400000 where id_echipa = 30;
```



```
create or replace trigger ex11
    before insert or update on echipa
    for each row
declare
    bug echipa.buget%type;
    nc campionat.nume_campionat%type;
begin
    bug := :NEW.buget;

    select nume_campionat into nc
    from campionat
    where id_campionat = :NEW.id_campionat;

    if nc = 'Formula 1' then
        if bug < 50000 or bug > 300000 then
            raise_application_error(-20003, 'Bugetul echipei nu se incadreaza in limitele impuse de Formula 1');
        end if;
    elsif nc = 'Formula 2' then
        if bug < 10000 or bug > 50000 then
            raise_application_error(-20004, 'Bugetul echipei nu se incadreaza in limitele impuse de Formula 2');
        end if;
    end if;

end;
update echipa set buget = 400000 where id_echipa = 30;
```

Task completed in 0.077 seconds

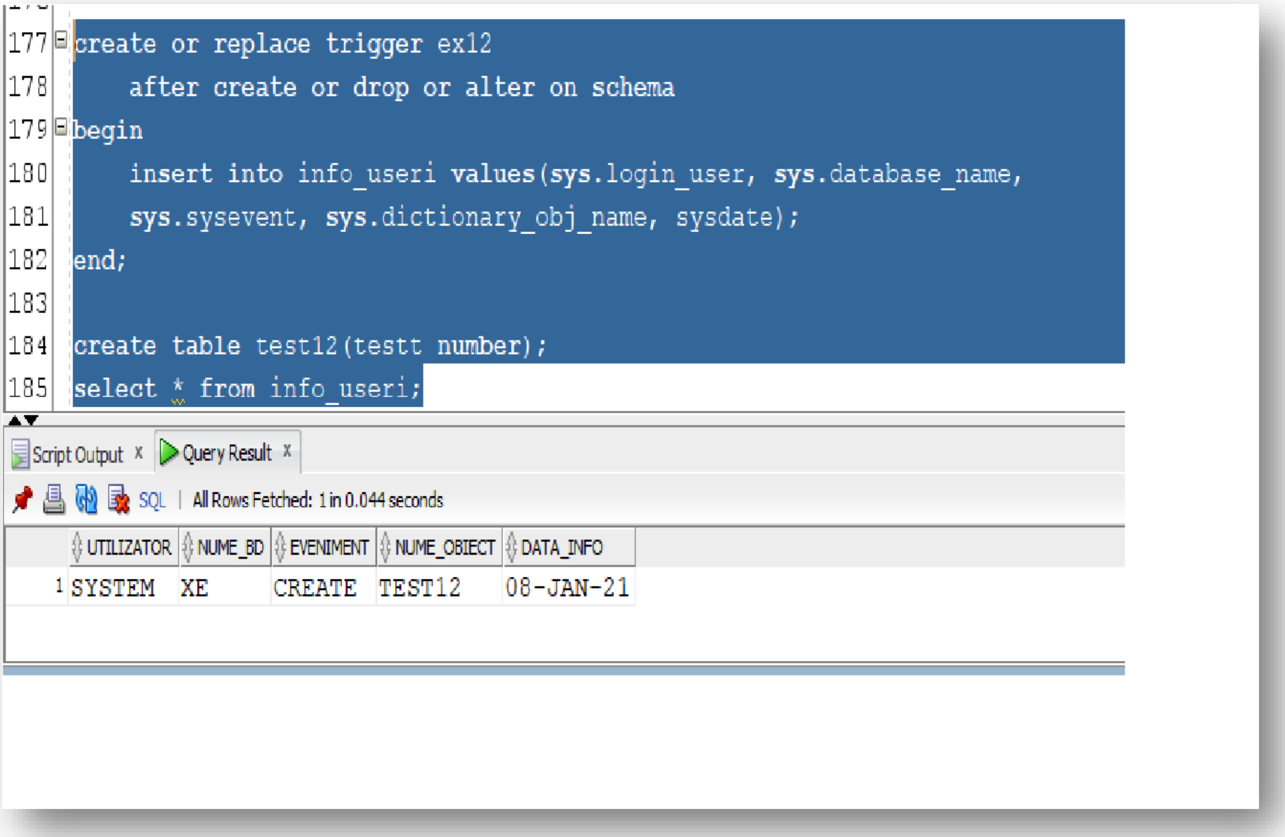
```
Error starting at line : 202 in command -
update echipa set buget = 400000 where id_echipa = 30
Error report -
ORA-20003: Bugetul echipei nu se incadreaza in limitele impuse de Formula 1
ORA-06512: at "SYSTEM.EX11", line 13
ORA-04088: error during execution of trigger 'SYSTEM.EX11'
```

12.

Triggerul introduce date in tabelul info_useri dupa ce utilizatorul a folosit o comanda LDD.

```
create or replace trigger ex12
    after create or drop or alter on schema
begin
    insert into info_useri values(sys.login_user, sys.database_name,
    sys.sysevent, sys.dictionary_obj_name, sysdate);
```

```
end;

create table test12(testt number);
```



```
create or replace trigger ex12
    after create or drop or alter on schema
begin
    insert into info_useri values(sys.login_user, sys.database_name,
    sys.sysevent, sys.dictionary_obj_name, sysdate);
end;

create table test12(testt number);
select * from info_useri;
```

All Rows Fetched: 1 in 0.044 seconds

	UTILIZATOR	NUME_BD	EVENIMENT	NUME_OBIECT	DATA_INFO
1	SYSTEM	XE	CREATE	TEST12	08-JAN-21

13.

```
create or replace package pachet_proiect as
   procedure ex6;

   procedure ex7;

   function ex8(v_last_name pilot.last_name%type) return number;

   procedure ex9(v_nume_tara tara.nume_tara%type);
end pachet_proiect;
```

```
/

create or replace package body pachet_proiect as
   procedure ex6
   is
      type camp is table of campionat.id_campionat%TYPE INDEX BY
PLS_INTEGER;
      lista camp;
      min_buget echipa.buget%type;
      min_cnt number:=10;
      max_cnt number:=0;
      cnt number;
      id_min_camp campionat.id_campionat%type;
      id_max_camp campionat.id_campionat%type;
      id_e echipa.id_echipa%type;

   begin
      select id_campionat
      bulk collect into lista
      from campionat;

      for i in 1..lista.count loop
         select count(*) into cnt
         from echipa
         where id_campionat = lista(i);
      if cnt < min_cnt and cnt != 0 then
        min_cnt := cnt;
        id_min_camp := lista(i);
      end if;

      if cnt > max_cnt then
        max_cnt := cnt;
        id_max_camp := lista(i);
        select min(buget) into min_buget
        from echipa
        where id_campionat = lista(i);
      end if;
    end loop;

    insert into echipa values(id_echipe.nextval, 'EX6 RACING', 10000, 0, id_min_camp);

    dbms_output.put_line('A fost inserata echipa in campionatul cu id ' || id_min_camp);

    select id_echipa into id_e
    from echipa
    where id_campionat = id_max_camp and buget = min_buget;
    dbms_output.put_line('Echipa cu cel mai mic buget are id-ul '
|| id_e);

end ex6;

  procedure ex7
  is
    cursor c is
      select id_fabrica, nume_fabrica
      from fabrica;

    cursor d(param number) is
      select pret_prod
      from componente
      where id_fabrica = param;
    suma number;
  begin
    for i in c loop
      DBMS_OUTPUT.PUT_LINE('------------------------------------');
      DBMS_OUTPUT.PUT_LINE ('FABRICA: '|| i.nume_fabrica);
      suma := 0;
      for k in d(i.id_fabrica) loop
        suma := suma+k.pret_prod;
      end loop;
      DBMS_OUTPUT.PUT_LINE ('PRET TOTAL: '|| suma);
```

```
          DBMS_OUTPUT.PUT_LINE('-------------------------------------');
        end loop;

end ex7;

    function ex8(v_last_name pilot.last_name%type) return number
    is
        type echipe is table of echipa.id_echipa%TYPE INDEX BY PLS_INTEGER;
        lista echipe;
        id_e pilot.id_echipa%type;
        nume campionat.nume_campionat%type;
        total number := 0;
        id_camp campionat.id_campionat%type;
        ok number;
    begin
        select id_echipa into id_e
        from pilot
        where last_name = v_last_name;

        select c.id_campionat into id_camp
        from echipa e join campionat c on e.id_campionat = c.id_campionat
        where e.id_echipa = id_e;
```

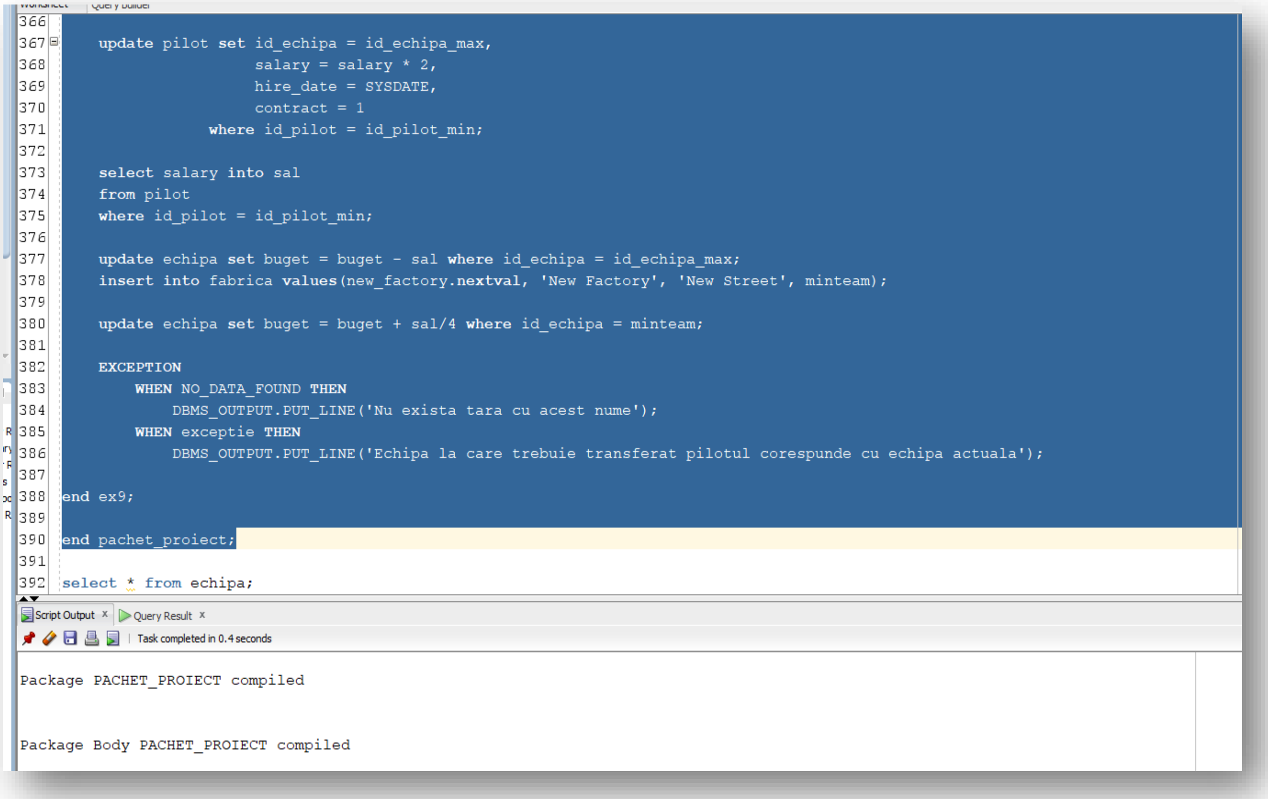
```
select id_echipa
bulk collect into lista
from echipa
where id_campionat = id_camp;

for i in (select id_echipa, victorii
         from pilot) loop
   ok := 0;
   for j in 1..lista.count loop
      if i.id_echipa = lista(j) then
         ok := 1;
      end if;
      exit when ok = 1;
   end loop;

   if ok = 1 then
      total := total + i.victorii;
   end if;
end loop;

return total;

EXCEPTION
   WHEN NO_DATA_FOUND THEN
   DBMS_OUTPUT.PUT_LINE ('Nu exista pilot cu acest nume');
```

```
         return -1;

         WHEN TOO_MANY_ROWS THEN
         DBMS_OUTPUT.PUT_LINE ('Exista mai multi piloti cu acest
nume');
         return -2;

end;

   procedure ex9(v_nume_tara tara.nume_tara%type)
   is
      id_tr tara.id_tara%type;
      type circuite is table of circuit.id_circuit%type index by
pls_integer;
      id_c circuite;
      type piloti is table of pilot.id_pilot%TYPE INDEX BY
PLS_INTEGER;
      lista piloti;
      nr_spec number;
      max_spec number := 0;
      id_c_max circuit.id_circuit%type;
      min1 number:= 999999;
      minteam echipa.id_echipa%type;
      id_pilot_min pilot.id_pilot%type;
      id_echipa_min pilot.id_echipa%type;
   id_echipa_max pilot.id_echipa%type;
   titles echipa.titluri_castigate%type;
   sal pilot.salary%type;
   team echipa.id_echipa%type;
   exceptie EXCEPTION;
begin

select id_tara into id_tr
from tara
where nume_tara = v_nume_tara;

select id_circuit bulk collect into id_c
from circuit
where id_tara = id_tr;

for i in 1..id_c.count loop
   select nr_spectatori into nr_spec
   from circuit
   where id_circuit = id_c(i);

   if nr_spec > max_spec then
      max_spec := nr_spec;
      id_c_max := id_c(i);
   end if;
end loop;
```

```
select id_pilot
bulk collect into lista
from testeaza_la
where id_circuit = id_c_max;

for i in 1..lista.count loop
   select salary, id_echipa into sal, team
   from pilot
   where id_pilot = lista(i);

   if sal < min1 then
      min1 := sal;
      minteam := team;
      id_pilot_min := lista(i);
   end if;
end loop;

select id_echipa, titluri_castigate into id_echipa_max, titles
from echipa
where titluri_castigate in (select max(titluri_castigate)
                           from echipa);
if minteam = id_echipa_max then
   raise exceptie;
end if;
```

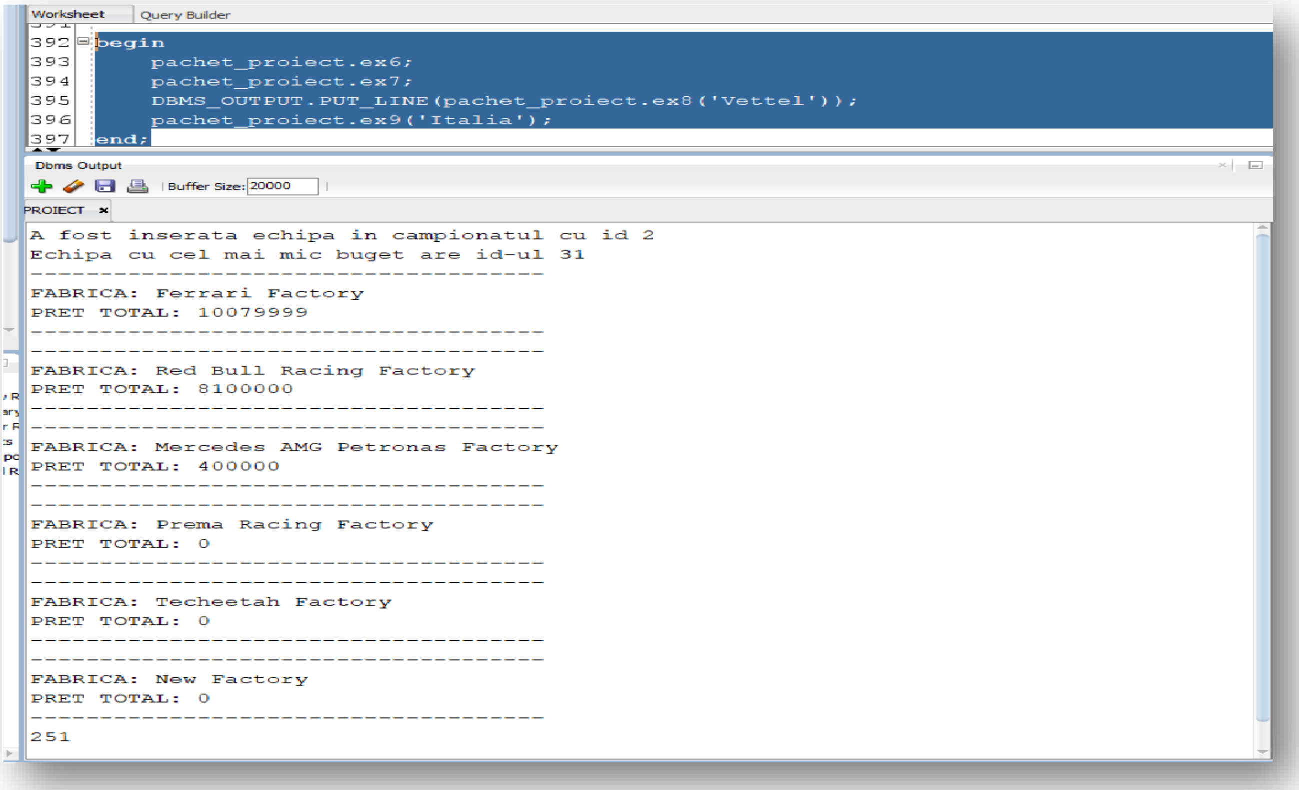
```
   update pilot set id_echipa = id_echipa_max,
                salary = salary * 2,
                hire_date = SYSDATE,
                contract = 1
            where id_pilot = id_pilot_min;

   select salary into sal
   from pilot
   where id_pilot = id_pilot_min;

   update echipa set buget = buget - sal where id_echipa =
id_echipa_max;
   insert into fabrica values(new_factory.nextval, 'New Factory',
'New Street', minteam);

   update echipa set buget = buget + sal/4 where id_echipa =
minteam;

   EXCEPTION
      WHEN NO_DATA_FOUND THEN
         DBMS_OUTPUT.PUT_LINE('Nu exista tara cu acest nume');
      WHEN exceptie THEN
         DBMS_OUTPUT.PUT_LINE('Echipa la care trebuie transferat
pilotul corespunde cu echipa actuala');
```

```
end ex9;


end pachet_proiect;
/
begin
   pachet_proiect.ex6;
   pachet_proiect.ex7;
   DBMS_OUTPUT.PUT_LINE(pachet_proiect.ex8('Vettel'));
   pachet_proiect.ex9('Italia');
end;
/
```



```

    update pilot set id_echipa = id_echipa_max,
                     salary = salary * 2,
                     hire_date = SYSDATE,
                     contract = 1
                where id_pilot = id_pilot_min;

    select salary into sal
    from pilot
    where id_pilot = id_pilot_min;

    update echipa set buget = buget - sal where id_echipa = id_echipa_max;
    insert into fabrica values(new_factory.nextval, 'New Factory', 'New Street', minteam);

    update echipa set buget = buget + sal/4 where id_echipa = minteam;

    EXCEPTION
        WHEN NO_DATA_FOUND THEN
            DBMS_OUTPUT.PUT_LINE('Nu exista tara cu acest nume');
        WHEN exceptie THEN
            DBMS_OUTPUT.PUT_LINE('Echipa la care trebuie transferat pilotul corespunde cu echipa actuala');

end ex9;

end pachet_proiect;

select * from echipa;
```

```
Package PACHET_PROIECT compiled


Package Body PACHET_PROIECT compiled
```



```
begin
    pachet_proiect.ex6;
    pachet_proiect.ex7;
    DBMS_OUTPUT.PUT_LINE(pachet_proiect.ex8('Vettel'));
    pachet_proiect.ex9('Italia');
end;
```

Buffer Size: 20000

```
A fost inserata echipa in campionatul cu id 2
Echipa cu cel mai mic buget are id-ul 31
-------------------------------------
FABRICA: Ferrari Factory
PRET TOTAL: 10079999
-------------------------------------
-------------------------------------
FABRICA: Red Bull Racing Factory
PRET TOTAL: 8100000
-------------------------------------
-------------------------------------
FABRICA: Mercedes AMG Petronas Factory
PRET TOTAL: 400000
-------------------------------------
-------------------------------------
FABRICA: Prema Racing Factory
PRET TOTAL: 0
-------------------------------------
-------------------------------------
FABRICA: Techeetah Factory
PRET TOTAL: 0
-------------------------------------
-------------------------------------
FABRICA: New Factory
PRET TOTAL: 0
-------------------------------------
251
```