

```

--Ex1

declare

type vector is varray(5) of emp_sca.employee_id%type;

t vector := vector();

s employees.salary%type;

begin

    select employee_id
    bulk collect into t
    from emp_sca
    where ROWNUM <= 5
    order by salary;

    for i in t.first..t.last loop

        update emp_sca

        set salary = salary + salary * 0.05

        where employee_id = t(i);

    end loop;

    for i in t.first..t.last loop

        select salary

        into s

        from emp_sca

        where employee_id = t(i);

        dbms_output.put_line('Angajatul: ' || t(i) || ' are salariul ' || s);

    end loop;

end;

/

```

```

Angajatul: 104 are salariul 7293.04
Angajatul: 103 are salariul 10939.56
Angajatul: 101 are salariul 20663.61
Angajatul: 102 are salariul 20663.61
Angajatul: 100 are salariul 29172.15

```

--2

create or replace type tip_orase_sca IS TABLE OF varchar2(30);

/

create table excursie_sca (

cod_excursie number(4) primary key,

denumire varchar2(20),

orase tip_orase_sca,

status varchar2(15))

nested table orase store as table_orase_sca;

--a

insert into excursie_sca

values (1, 'Excursie1', tip_orase_sca('Bucuresti', 'Constanta', 'Mangalia'), 'Disponibil');

insert into excursie_sca

values (2, 'Excursie2', tip_orase_sca('Bucuresti', 'Predeal', 'Brasov'), 'Anulat');

insert into excursie_sca

values (3, 'Excursie3', tip_orase_sca('Bucuresti'), 'Disponibil');

insert into excursie_sca

values (4, 'Excursie4', tip_orase_sca('Bucuresti', 'Constanta'), 'Anulat');

insert into excursie_sca

values (5, 'Excursie5', tip_orase_sca('Bucuresti', 'Sinaia'), 'Anulat');

commit;

Type TIP_ORASE_SCA compiled

Table EXCURSIE_SCA created.

```

--b
--oras pe ultima pozitie
declare
    excursie varchar2(20) := '&p_excursie';
    oras varchar2(30) := '&p_oras';
    v tip_orase_sca;
begin
    select orase
    into v
    from excursie_sca
    where denumire = excursie;
    v.extend;
    v(v.last) := oras;
    update excursie_sca
    set orase = v
    where denumire = excursie;
end;
/

```

	COD_EXCURSIE	DENUMIRE	ORASE	STATUS
1	3	Excursie3	GRUPA243.TIP_ORASE_SCA('Bucuresti')	Disponibil

	COD_EXCURSIE	DENUMIRE	ORASE	STATUS
1	3	Excursie3	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Craiova')	Disponibil

```

--inserare pe a doua pozitie
declare
    excursie varchar2(20) := '&p_excursie';
    oras varchar2(30) := '&p_oras';
    v tip_orase_sca;
    i number(4);
begin

```

```

select orase
into v
from excursie_sca
where lower(denumire) = lower(excursie);

```

```

v.extend;
for i in reverse 2..v.last loop
    v(i) := v(i-1);
end loop;
v(2) := initcap(oras);

```

```

update excursie_sca
set orase = v
where denumire = excursie;
commit;
end;

```

/

	COD_EXCURSIE	DENUMIRE	ORASE	STATUS
1	1	Excursie1	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Constanta', 'Mangalia')	Disponibil

	COD_EXCURSIE	DENUMIRE	ORASE
1	1	Excursie1	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Saturn', 'Constanta', 'Mangalia')

--inversare ordine vizitare

```

declare
    excursie varchar2(20) := '&p_excursie';
    oras1 varchar2(30) := '&p_oras1';
    oras2 varchar2(30) := '&p_oras2';
    v tip_orase_sca;
begin
    select orase
    into v
    from excursie_sca

```

```
where lower(denumire) = lower(excursie);
```

```
for i in v.first..v.last loop
```

```
    if initcap(v(i)) = initcap(oras1) then v(i) := initcap(oras2);
```

```
    elsif initcap(v(i)) = initcap(oras2) then v(i) := initcap(oras1);
```

```
    end if;
```

```
end loop;
```

```
update excursie_sca
```

```
set orase = v
```

```
where denumire = excursie;
```

```
commit;
```

```
end;
```

```
/
```

	⚡ COD_EXCURSIE	⚡ DENUMIRE	ORASE	
1		1 Excursie1	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Saturn', 'Constanta', 'Mangalia')	1

	⚡ COD_EXCURSIE	⚡ DENUMIRE	ORASE	
1		1 Excursie1	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Constanta', 'Saturn', 'Mangalia')	1

```
-- eliminare din lista
```

```
declare
```

```
    excursie varchar2(20) := '&p_excursie';
```

```
    oras varchar2(30) := '&p_oras';
```

```
    v1 tip_orase_sca;
```

```
    j number(4) ;
```

```
begin
```

```
    select orase
```

```
    into v1
```

```
    from excursie_sca
```

```
    where lower(denumire) = lower(excursie);
```

```
    for i in v1.first..v1.last loop
```

```
        if initcap(v1(i)) = initcap(oras) then
```

```
            j := i;
```

```

        end if;
    end loop;
    v1.delete(j);
    update excursie_sca
    set orase = v1
    where denumire = excursie;
    commit;
end;
/

```

⚡	COD_EXCURSIE	⚡	DENUMIRE	ORASE	
1		1	Excursie1	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Saturn', 'Constanta', 'Mangalia')	1

⚡	COD_EXCURSIE	⚡	DENUMIRE	ORASE	⚡	STATUS
1		1	Excursie1	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Constanta', 'Mangalia')		Disponibil

```

--c
declare
excursie excursie_sca.cod_excursie%type := &p_cod;
type exc_type is record
    (nume excursie_sca.denumire%TYPE,
    orase excursie_sca.orase%type);
orase_vizitate exc_type;
begin
    select denumire, orase
    into orase_vizitate
    from excursie_sca
    where cod_excursie = excursie;

    dbms_output.put('In excursia cu numele ' || orase_vizitate.nume || ' au fost vizitate '
        || orase_vizitate.orase.count || ' orase: ');
    for i in orase_vizitate.orase.first..orase_vizitate.orase.last loop
        if i = orase_vizitate.orase.last then
            dbms_output.put(orase_vizitate.orase(i) || ';');

```

```

        else dbms_output.put(orase_vizitate.orase(i) || ', ');
    end if;
end loop;
dbms_output.put_line("");
end;
/

In excursia cu numele Excursiei au fost vizitate 3 orase:
Bucuresti,
Constanta,
Mangalia;

--d
declare
type exc_type is record
    (nume excursie_sca.denumire%TYPE,
    orase excursie_sca.orase%type);
TYPE tab_ind IS TABLE OF exc_type;
v tab_ind;
begin
    select denumire, orase
    bulk collect into v
    from excursie_sca;

    for i in v.first..v.last loop
        dbms_output.put(v(i).nume || ': ');
        for j in v(i).orase.first..v(i).orase.last loop
            if j = v(i).orase.last then
                dbms_output.put(v(i).orase(j) || ';');
            else dbms_output.put(v(i).orase(j) || ', ');
            end if;
        end loop;
        dbms_output.put_line("");
    end loop;
end loop;

```

end;

/

```
Excursie1: Bucuresti, Constanta, Mangalia;  
Excursie2: Bucuresti, Predeal, Brasov;  
Excursie3: Bucuresti, Craiova;  
Excursie4: Bucuresti, Constanta;  
Excursie5: Bucuresti, Sinaia;
```

--e

declare

type exc_type is record

```
    (cod_excursie_sca.cod_excursie%TYPE,  
     orase_excursie_sca.orase%type);
```

TYPE tab_ind IS TABLE OF exc_type;

v tab_ind;

nr number(4) := 1000;

begin

```
    select cod_excursie, orase
```

```
    bulk collect into v
```

```
    from excursie_sca;
```

```
    for i in v.first..v.last loop
```

```
        if v(i).orase.count < nr then nr := v(i).orase.count;
```

```
    end if;
```

```
end loop;
```

```
for i in v.first..v.last loop
```

```
    if v(i).orase.count = nr then
```

```
        update excursie_sca
```

```
        set status = 'Anulat'
```

```
        where cod_excursie = v(i).cod;
```

```
    end if;
```

```
end loop;
```


end;

/

--inaite de rulare

	DENUMIRE	ORASE	STATUS
1	Excursie1	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Constanta', 'Mangalia')	Disponibil
2	Excursie2	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Predeal', 'Brasov')	Anulat
3	Excursie3	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Craiova')	Disponibil
4	Excursie4	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Constanta')	Anulat
5	Excursie5	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Sinaia')	Anulat

--dupa rulare

	DENUMIRE	ORASE	STATUS
1	Excursie1	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Constanta', 'Mangalia')	Disponibil
2	Excursie2	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Predeal', 'Brasov')	Anulat
3	Excursie3	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Craiova')	Anulata
4	Excursie4	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Constanta')	Anulata
5	Excursie5	GRUPA243.TIP_ORASE_SCA('Bucuresti', 'Sinaia')	Anulata

--3

create or replace type tip_orase_sca as varray(10) of varchar2(30);

/

create table excursie_sca (

cod_excursie number(4) primary key,

denumire varchar2(20),

orase tip_orase_sca,

status varchar2(15))

--a

insert into excursie_sca

values (1, 'Excursie1', tip_orase_sca('Bucuresti', 'Constanta', 'Mangalia'), 'Disponibil');

insert into excursie_sca

values (2, 'Excursie2', tip_orase_sca('Bucuresti', 'Predeal', 'Brasov'), 'Anulat');

insert into excursie_sca

values (3, 'Excursie3', tip_orase_sca('Bucuresti'), 'Disponibil');

insert into excursie_sca

values (4, 'Excursie4', tip_orase_sca('Bucuresti', 'Constanta'), 'Anulat');

insert into excursie_sca

values (5, 'Excursie5', tip_orase_sca('Bucuresti', 'Sinaia'), 'Anulat');

```
commit;
select * from excursie_sca;
rollback;
drop table excursie_sca;

--b
--oras pe ultima pozitie
declare
    excursie varchar2(20) := '&p_excursie';
    oras varchar2(30) := '&p_oras';
    v tip_orase_sca;
    i number(2) := 1;
begin
    select orase
    into v
    from excursie_sca
    where denumire = excursie;

    v.extend;
    v(v.count) := oras;

    update excursie_sca
    set orase = v
    where denumire = excursie;
end;
/

--inserare pe a doua pozitie
declare
    excursie varchar2(20) := '&p_excursie';
    oras varchar2(30) := '&p_oras';
    v tip_orase_sca;
```

```

        i number(4);
begin
    select orase
    into v
    from excursie_sca
    where lower(denumire) = lower(excursie);
    v.extend;

    for i in reverse 2..v.last loop
        v(i) := v(i-1);
    end loop;

    v(2) := initcap(orase);

    update excursie_sca
    set orase = v
    where denumire = excursie;
    commit;
end;
/

```

--inversare ordine vizitare

```

declare
    excursie varchar2(20) := '&p_excursie';
    oras1 varchar2(30) := '&p_oras1';
    oras2 varchar2(30) := '&p_oras2';
    v tip_orase_sca;
begin
    select orase
    into v

```

```
from excursie_sca
where lower(denumire) = lower(excursie);
```

```
for i in v.first..v.last loop
    if initcap(v(i)) = initcap(oras1) then v(i) := initcap(oras2);
    elsif initcap(v(i)) = initcap(oras2) then v(i) := initcap(oras1);
    end if;
end loop;
```

```
update excursie_sca
set orase = v
where denumire = excursie;
```

```
end;
```

```
/
```

```
-- eliminare din lista
```

```
declare
```

```
    excursie varchar2(20) := '&p_excursie';
```

```
    oras varchar2(30) := '&p_oras';
```

```
    v1 tip_orase_sca;
```

```
    j number(4);
```

```
begin
```

```
    select orase
```

```
    into v1
```

```
    from excursie_sca
```

```
    where lower(denumire) = lower(excursie);
```

```
for i in v1.first..v1.last loop
```

```
    if initcap(v1(i)) = initcap(oras) then
```

```
        j := i;
```

```
    end if;
```

```

end loop;

for i in j..v1.count-1 loop
    v1(j) :=v1(j + 1);
end loop;
v1.trim;

update excursie_sca
set orase = v1
where denumire = excursie;

end;

/

--c

declare
excursie excursie_sca.cod_excursie%type := &p_cod;
type exc_type is record
    (nume excursie_sca.denumire%TYPE,
    orase excursie_sca.orase%type);
orase_vizitate exc_type;
begin

    select denumire, orase
    into orase_vizitate
    from excursie_sca
    where cod_excursie = excursie;

    dbms_output.put('In excursia cu numele ' || orase_vizitate.nume || ' au fost vizitate '
        || orase_vizitate.orase.count || ' orase: ');

```

```

for i in 1..orase_vizitate.orase.count loop
    if i = orase_vizitate.orase.last then
        dbms_output.put(orase_vizitate.orase(i) || ';');
    else dbms_output.put(orase_vizitate.orase(i) || ', ');
    end if;
end loop;
dbms_output.put_line("");

```

```

end;

```

```

/

```

```

--d

```

```

declare

```

```

type exc_type is record

```

```

    (nume excursie_sca.denumire%TYPE,

```

```

    orase excursie_sca.orase%type);

```

```

TYPE tab_ind IS TABLE OF exc_type;

```

```

v tab_ind;

```

```

begin

```

```

    select denumire, orase

```

```

    bulk collect into v

```

```

    from excursie_sca;

```

```

for i in v.first..v.last loop

```

```

    dbms_output.put(v(i).nume || ': ');

```

```

    for j in v(i).orase.first..v(i).orase.last loop

```

```

        if j = v(i).orase.last then

```

```

            dbms_output.put(v(i).orase(j) || ';');

```

```

        else dbms_output.put(v(i).orase(j) || ', ');

```

```

        end if;

```

```

    end loop;

```

```
        dbms_output.put_line("");
    end loop;
end;
/
```

--e

```
declare
type exc_type is record
    (cod excursie_sca.cod_excursie%TYPE,
     orase excursie_sca.orase%type);
TYPE tab_ind IS TABLE OF exc_type;
v tab_ind;
nr number(4) := 1000;
begin
    select cod_excursie, orase
    bulk collect into v
    from excursie_sca;

    for i in 1..v.count loop
        if v(i).orase.count < nr then nr := v(i).orase.count;
        end if;
    end loop;

    for i in v.first..v.last loop
        if v(i).orase.count = nr then
            update excursie_sca
            set status = 'Anulat'
            where cod_excursie = v(i).cod;
        end if;
    end loop;
```

```
end;
```

```
/
```

```
commit;
```