**Zhumagali Kanat IT2-2003**

**Lab2. Creating anonymous blocks**

1. Create 6 anonymous blocks for your database (Lab 1) with the functionality according to the database domain.
2. At least three blocks must include explicit cursors.
   1. For the cursors, use the traditional way of processing them two times and the *Cursor For Loop* structure – once.
   2. One of the cursors that you create needs to be with parameters.
   3. Cursors must be used correctly, according to their functionality!!!
3. Additionally, the anonymous blocks must include:
   1. creating and application of at least one record;
   2. creating and application of at least one INDEX BY table;
   3. application of the control structures, such as IF, loops, CASE.
4. For loop fetch

declare

cursor sal\_cursor is select movie\_id, film\_name, duration, year\_of\_release from movie where YEAR\_OF\_RELEASE > 2000 order by year\_of\_release asc;

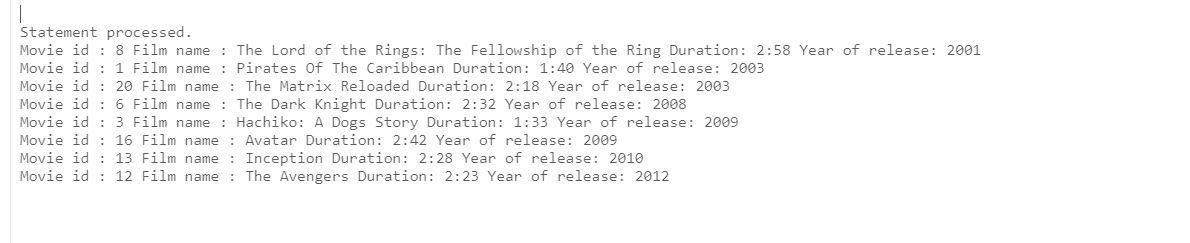
begin

for sal\_record in sal\_cursor loop

dbms\_output.put\_line('Movie id : ' || sal\_record.movie\_id || ' Film name : ' || sal\_record.film\_name || ' Duration: ' || sal\_record.duration || ' Year of release: ' || sal\_record.year\_of\_release );

end loop;

end;



2. fetch with parametrs

declare

--cursor movie\_act\_cursor is select movie\_id, film\_name, year\_of\_release, last\_name, first\_name, date\_of\_birth from movie, actors, movie\_cast where movie.movie\_id = movie\_cast.movie\_id and actors.actor\_id = movie\_cast.actor\_id;

cursor movie\_act\_cursor is select movie\_id, actor\_id from movie\_cast where mod(movie\_id, 2) = 0;

cursor movie\_act\_cursor\_info(mov\_id number) is

select m.movie\_id, m.film\_name, m.year\_of\_release, a.last\_name, a.first\_name, a.date\_of\_birth from movie m, actors a, movie\_cast mc where m.movie\_id = mc.movie\_id and a.actor\_id = mc.actor\_id and mc.movie\_id = mov\_id ;

m\_id movie.movie\_id%type;

a\_id actors.actor\_id%type;

m\_id\_i movie.movie\_id%type;

film\_name movie.film\_name%type;

yor\_i movie.year\_of\_release%type;

l\_name actors.last\_name%type;

f\_name actors.first\_name%type;

dob\_i actors.date\_of\_birth%type;

begin

open movie\_act\_cursor;

loop fetch movie\_act\_cursor into m\_id, a\_id;

exit when movie\_act\_cursor%notfound;

dbms\_output.put\_line(m\_id || ' ' || a\_id);

open movie\_act\_cursor\_info(m\_id);

loop fetch movie\_act\_cursor\_info into m\_id\_i, film\_name, yor\_i, l\_name, f\_name, dob\_i;

exit when movie\_act\_cursor\_info%notfound;

dbms\_output.put\_line('Movie id: ' || m\_id\_i ||' Film name: ' || film\_name || ' Year of release: ' || yor\_i || ' Actor name: ' || l\_name || ' ' || f\_name || ' DoB: ' || dob\_i );

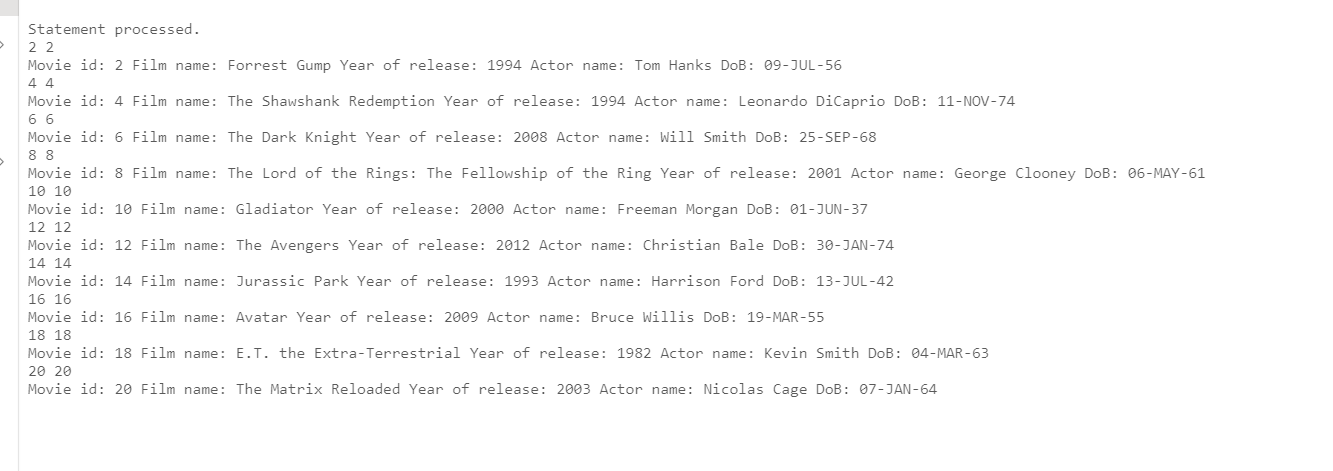
end loop;

close movie\_act\_cursor\_info;

end loop;

close movie\_act\_cursor;

end;



3.fetch for loop with parametrs

DECLARE

cursor genre\_cursor is select genre\_id, genre\_name from genre where genre\_name = 'Action';

cursor movie\_g\_info(g\_id number) is

select m.movie\_id, m.film\_name, m.year\_of\_release from movie m join movie\_genre mg on mg.movie\_id = m.movie\_id where mg.genre\_id = g\_id ;

begin

for genre\_rec in genre\_cursor loop

dbms\_output.put\_line(genre\_rec.genre\_id || ' Genre name: ' || genre\_rec.genre\_name );

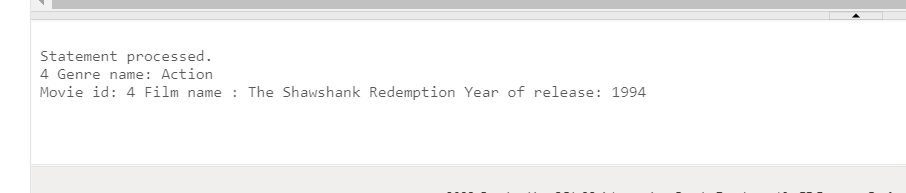
for movie\_genre\_info\_rec in movie\_g\_info(genre\_rec.genre\_id) loop

dbms\_output.put\_line('Movie id: ' || movie\_genre\_info\_rec.movie\_id ||' Film name : ' || movie\_genre\_info\_rec.film\_name|| ' Year of release: ' || movie\_genre\_info\_rec.year\_of\_release );

end loop;

end loop;

end;



4.record type and cursor

declare

type movie\_info is record(

movie\_id movie.movie\_id%type,

film\_name movie.film\_name%type,

duration movie.duration%type,

rating\_imbdb movie.rating\_imbdb%type

);

my\_id number;

m\_info movie\_info;

cursor m\_info\_cursor is select movie\_id, film\_name, duration,rating\_imbdb from movie where movie\_id = my\_id;

begin

my\_id := '2';

open m\_info\_cursor;

fetch m\_info\_cursor into m\_info;

close m\_info\_cursor;

dbms\_output.put\_line(m\_info.movie\_id || ' ' || m\_info.film\_name || ' ' || m\_info.duration);

end;



5.index by and for loops

declare

type companies\_name is table of Film\_Production\_Companies.prod\_name%type index by pls\_integer;

c\_table companies\_name;

counter pls\_integer := 0;

begin

for rec in (select prod\_name from Film\_Production\_Companies) loop

counter := counter + 1;

c\_table(counter) := rec.prod\_name;

dbms\_output.put\_line(counter ||' Name of company: ' || c\_table(counter));

end loop;

end;



6. if case using records+cursors

declare

type movie\_fin\_info is record(

movie\_id movie.movie\_id%type,

film\_name movie.film\_name%type,

budget finance.budget%type,

income finance.income%type

);

m\_info movie\_fin\_info;

my\_b number;

cursor fin\_cursor is select m.movie\_id, m.film\_name, f.budget, f.income from movie\_fin mf join movie m on mf.movie\_id = m.movie\_id join finance f on mf.fin\_id = f.fin\_id;

begin

my\_b := 1000000;

for fin\_record in fin\_cursor loop

m\_info := fin\_record;

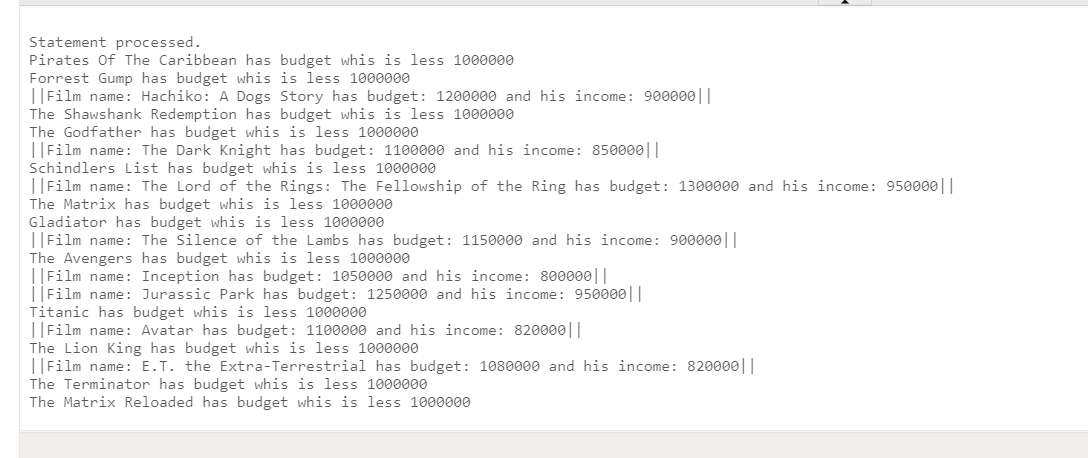
if(to\_number(m\_info.budget) > my\_b) then dbms\_output.put\_line('||Film name: ' || m\_info.film\_name || ' has budget: ' || m\_info.budget || ' and his income: ' || m\_info.income || '||');

else dbms\_output.put\_line(m\_info.film\_name || ' has budget whis is less ' || my\_b);

end if;

end loop;

end;



Questions:

1. Describe the structure of an anonymous block
2. What types of blocks exist in PL/SQL?
3. The rules to declare variables
4. What types of composite data types do you know?
5. What is the main difference between records and INDEX BY tables?
6. Show how to create records (2 ways)
7. Show how to create INDEX BY table
8. The use of %TYPE attribute
9. The use of %ROWTYPE attribute
10. The types of loops
11. The types of CASE
12. Implicit cursors and their attributes
13. Explicit cursors
14. The attributes of explicit cursors
15. What happens when we **declare** an explicit cursor?
16. What happens when we **open** the explicit cursor?
17. What happens when we **fetch** the explicit cursor?
18. What happens when we **close** the explicit cursor?