Lab – 7 : Dipesh Singh – 190905520

Question 1 : The HRD manager has decided to raise the salary of all the Instructors in a given department number by 5%. Whenever, any such raise is given to the instructor, a record for the same is maintained in the salary\_raise table. It includes the Instuctor Id, the date when the raise was given and the actual raise amount. Write a PL/SQL block to update the salary of each Instructor and insert a record in the salary\_raise table.

salary\_raise(Instructor\_Id, Raise\_date, Raise\_amt)

create table salaryraise(

    id number(8),

    raise\_date date,

    raise\_amt number(8)

);

declare dt constant varchar(20) := '09/06/2021';

cursor c is

select \*

from instructor;

begin for ins in c loop

insert into salaryraise

values(

        ins.id,

        to\_date(dt, 'dd/mm/yyyy'),

        ins.salary \* 0.05

    );

end loop;

update instructor

set salary = salary \* 1.05;

end;

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Question 2 : Write a PL/SQL block that will display the ID, name, dept\_name and tot\_cred of the first 10 students with lowest total credit.

declare cursor c is

select \*

from student

order by tot\_cred asc;

stu student %rowtype;

cnt number(5);

begin cnt := 0;

open c;

loop fetch c into stu;

dbms\_output.put\_line(

    'ID:' || stu.id || ' Name:' || stu.name || ' Dept:' || stu.dept\_name || ' Credits:' || stu.tot\_cred

);

cnt := cnt + 1;

exit

when cnt >= 10;

end loop;

close c;

end;

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Question 3 : Print the Course details and the total number of students registered for each course along with the course details -(Course-id, title, dept-name, credits, tot\_student\_no )

declare cursor c is

select course\_id,

    title,

    dept\_name,

    credits,

    tot

from course

    natural join (

        select course\_id,

            count(\*) as tot

        from takes

        group by course\_id

    );

begin for co in c loop dbms\_output.put\_line(

    'ID: ' || co.course\_id || ' Title: ' || co.title || ' Dept: ' || co.dept\_name || ' Credits: ' || co.credits || ' Total ' || co.tot

);

end loop;

end;

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Question 4 : Find all students who take the course with Course-id: 747 and if he/ she has less than 30 total credit (tot-cred), deregister the student from that course. (Delete the entry in Takes table)

declare cursor c is

select \*

from takes

where course\_id = '747';

cre student.tot\_cred %type;

cnt number(8);

begin cnt := 0;

for s in c loop

select tot\_cred into cre

from student

where id = s.id;

if cre < 30 then

delete from takes

where course\_id = '747'

    and id = s.id;

dbms\_output.put\_line('deleted : ' || s.id || ' credits : ' || cre);

cnt := cnt + 1;

end if;

end loop;

dbms\_output.put\_line(

    cnt || ' students de-enrolled from the course 747'

);

end;

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Question 5 : Alter StudentTable(refer Lab No. 8 Exercise)by resetting column LetterGrade to F. Then write a PL/SQL block to update the table by mapping GPA to the corresponding letter grade foreach student.

declare cursor c is

select \*

from studenttable for

update;

begin for stu in c loop if stu.gpa > 4

and stu.gpa <= 5 then

update studenttable

set grade = 'e'

where current of c;

elsif stu.gpa > 5

and stu.gpa <= 6 then

update studenttable

set grade = 'd'

where current of c;

elsif stu.gpa > 6

and stu.gpa <= 7 then

update studenttable

set grade = 'c'

where current of c;

elsif stu.gpa > 7

and stu.gpa <= 8 then

update studenttable

set grade = 'b'

where current of c;

elsif stu.gpa > 8

and stu.gpa <= 9 then

update studenttable

set grade = 'a'

where current of c;

elsif stu.gpa > 9

and stu.gpa <= 10 then

update studenttable

set grade = 'a+'

where current of c;

end if;

end loop;

end;

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Question 6 : Write a PL/SQL block to print the list of Instructors teaching a specified course.

declare cursor c(courseid teaches.course\_id %type) is

select id

from teaches

where course\_id = courseid;

i instructor %rowtype;

begin for ins in c(& courseid) loop

select \* into i

from instructor

where id = ins.id;

dbms\_output.put\_line(

    'ID: ' || i.id || ' Name: ' || i.name || ' Dept: ' || i.dept\_name || ' Salary: ' || i.salary

);

end loop;

end;

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Question 7 : Write a PL/SQL block to list the students who have registered for a course taught by his/her advisor.

declare cursor a is

select unique t.id as s,

    s.id as i

from takes t,

    teaches s

where t.course\_id = s.course\_id;

cursor b(s student.id %type, i instructor.id %type) is

select unique s\_id

from advisor

where s\_id = s

    and i\_id = i;

st student %rowtype;

cnt number(8);

begin cnt := 0;

for tuple in a loop for stu in b(tuple.s, tuple.i) loop

select \* into st

from student

where id = stu.s\_id;

dbms\_output.put\_line(st.name || ' ' || st.id || ' ' || st.dept\_name);

cnt := cnt + 1;

end loop;

end loop;

dbms\_output.put\_line(cnt || ' rows selected');

end;

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Question 8 : Write a PL/SQL block that updates the salary of ‘Biology’ department instructors by 20%. Subsequently, check the whether the department budget can support the raise. If not, undo the raise given to the instructors.

declare cursor c is

select \*

from instructor

where dept\_name = 'Biology' for update;

cnt number(20);

temp number(20);

begin savepoint a;

cnt := 0;

for ins in c loop cnt := cnt + ins.salary \* 1.2;

update instructor

set salary = salary \* 1.2

where current of c;

end loop;

select budget into temp

from department

where dept\_name = 'Biology';

if temp < cnt then rollback to savepoint a;

else commit;

end if;

end;

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