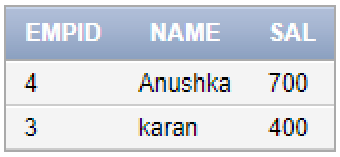
ADBMS Assignment 5

Write and implement PL/SQL Triggers

1. **Write and Implement PL/SQL trigger audit_sal on employee table. It should insert new record in another table emp_audit when salary of an employee is updated. emp_audit table consist of attributes empid, old salary, new salary and the date when salary is updated.**

```
create table emp_1(empid number primary key, name varchar2(20), sal number(5,2));
insert into emp_1(empid, name, sal) values(3, 'karan', 400);
```

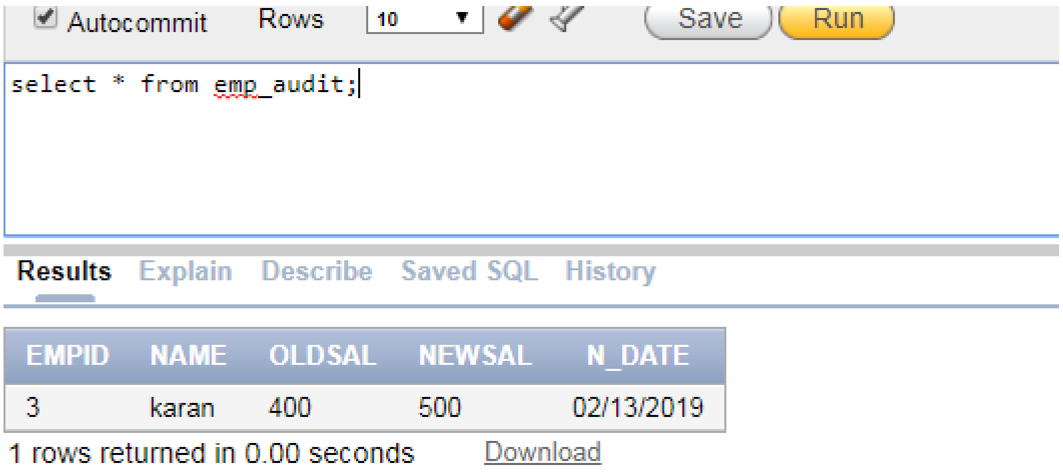


EMPID	NAME	SAL
4	Anushka	700
3	karan	400

```
create table emp_audit(empid number primary key, name varchar2(20), oldsal number(5,2), newsal number(5,2), n_date date);
update emp_1 set sal=500 where empid=3;

create or replace trigger audit_s
after update of sal on emp_1
for each row
begin
insert into emp_audit
values(:old.empid,:old.name,:old.sal,:new.sal,sysdate);

end;
```



```
select * from emp_audit;
```

EMPID	NAME	OLDSAL	NEWSAL	N_DATE
3	karan	400	500	02/13/2019

1 rows returned in 0.00 seconds

2. **Write and Implement PL/SQL trigger to raise an application error if user tries to insert, update or delete data on employee table on Saturday or Sunday or before 10 AM and after 5 pm.x**

create or replace trigger tri1

after insert or update or delete on emp_1

BEGIN

If to_char(sysdate, 'dy') = 'sat' or to_char(sysdate, 'dy') = 'sun' or

to_number(to_char(sysdate, 'hh24')) < 9 or to_number(to_char(sysdate, '24'))> 17

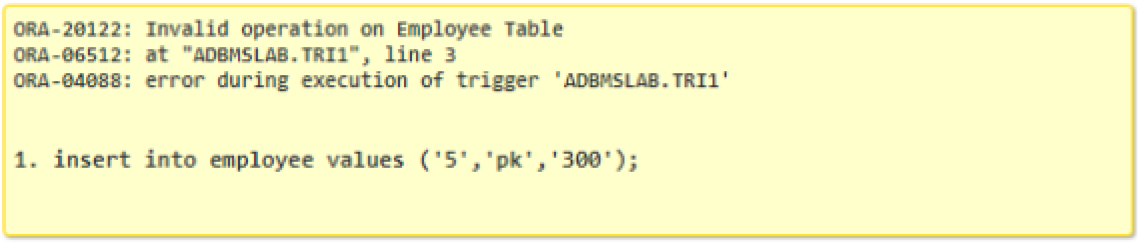
then

raise_application_error(-20122,'Invalid operation on Employee Table');

End if;

END;

insert into emp_1 values ('5', 'pk','300');

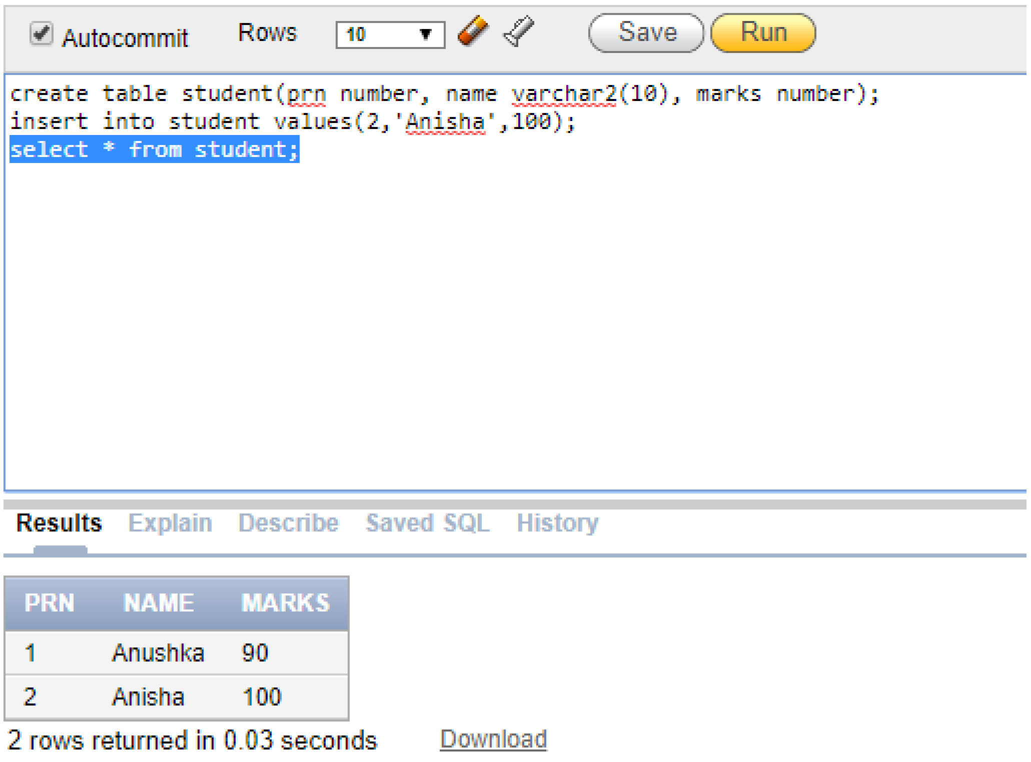


```
ORA-20122: Invalid operation on Employee Table
ORA-06512: at "ADBMSLAB.TRI1", line 3
ORA-04088: error during execution of trigger 'ADBMSLAB.TRI1'


1. insert into employee values ('5','pk','300');
```

3. **Write and Implement PL/SQL trigger display_mark_changes on student table. The trigger will be automatically fired before any student's marks updated in the table. It should also display old and new marks.**

create table student(prn number, name varchar2(10), marks number);
insert into student values(1,'pooja',90);



```
create table student(prn number, name varchar2(10), marks number);
insert into student values(2,'Anisha',100);
select * from student;
```

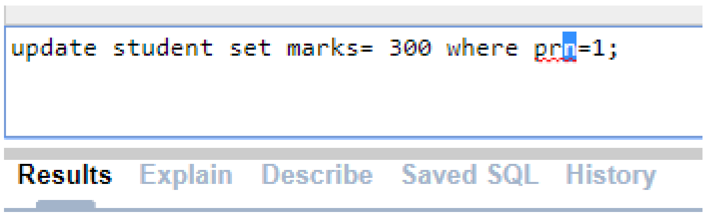
PRN	NAME	MARKS
1	Anushka	90
2	Anisha	100

2 rows returned in 0.03 seconds

CREATE OR REPLACE TRIGGER display_mark_changes
BEFORE UPDATE of marks ON student
FOR EACH ROW
WHEN (NEW.prn > 0)
DECLARE
mark_diff number;

```
BEGIN
mark_diff := :NEW.marks - :OLD.marks;
dbms_output.put_line('Old marks: ' || :OLD.marks);
dbms_output.put_line('New marks: ' || :NEW.marks);
dbms_output.put_line('marks difference: ' || mark_diff);

END;
```



```
update student set marks= 300 where prn=1;
```

```
Old marks: 90
New marks: 300
marks difference: 210

1 row(s) updated.
```

4. **Write and Implement PL/SQL trigger on employee table that automatically calculates the commission amount based on the salary and the job. If job is salesman or analyst, comm will be increased by 20% of the new salary. Additional condition is that, if the commission amount was less than 1000, then the additional commission is 1000; otherwise the additional commission is 2000. This trigger will be automaticity fired before updating salary of an employee.**

```
Create trigger calc_comm
        before update of emp_sal on employee
        for each row
        DECLARE
        sal number;
        comm number;
        job varchar(50);
        BEGIN
        sal := :old.emp_sal;
        job := :old.emp_job_post;
        If job = 'Salesman' or job = 'Analyst' then
        comm := 0.20 * :new.emp_sal;
        End if;
```

```
If comm < 1000 then
comm := comm + 1000;
Else
comm := comm + 2000;
End if;
:new.emp_sal := :new.emp_sal + comm;
END;
```

update employee set emp_sal = 30000 where emp_id=4

Output

EMP_ID	EMP_NAME	EMP_SAL	EMP_JOB_POST
1	xyz	70000	Manager
2	xyz	50000	General Manager
3	abc	300	IT Manager
4	dk	38000	Analyst