

HOMEWORK3

Exercise 1

Create or replace trigger manageswitching

After insert on STATE_CHANGE For each row

When(new.ChangeType<>'C')Declare

x number;

Begin

If (:new.ChangeType='O') then

Insert into TELEPHONE(PhoneNo, x, y, PhoneState)

Values(:new.PhoneNo, :new.x, :new.y, 'O');

Select CellId into x

From CELL

Where x0<= :new.x and x1>:new.x and y0<= :new.y and y1>:new.y;

Update CELL

Set CurrentPhone# = CurrentPhone#+1

Where CellId = x;

Else

If(:new.ChangeType='F')then

Delete from TELEPHONE

Where PhoneNo = :new.PhoneNo;

Select CellId into x

From CELL

Where x0<= :new.x and :new.x < x1 and y0<= :new.y and :new.y < y1;

Update CELL

Set CurrentPhone#= CurrentPhone#-1

Where CellId = x;

End if;

End if;

END;

**status of the table TELEPHONE before the insertion:

| | |
|---------------|-------------------------|
| 1 | select * from telephone |
| no data found | |

**First check on insert of two records:

| PHONENO | X | Y | PHONESTATE |
|-----------|----|----|------------|
| 333000010 | 3 | 3 | 0 |
| 333000009 | 15 | 15 | 0 |

**Second check on deletion of a record:

| PHONENO | X | Y | PHONESTATE |
|-----------|---|---|------------|
| 333000010 | 3 | 3 | 0 |

Exercise 2:

Create or replace trigger STARTCALL

After insert on STATE_CHANGE

For each row

When (new.ChangeType='C')

Declare myx0 number;myy0 number;myExId number;totphones number; myy1 number;myx1 number;myMaxCalls number;myCellId number;

Begin

Select CellId,x0,x1,y0,y1,MaxCalls into myCellId,myx0,myx1,myy0,myy1,myMaxCalls

From CELL

Where x0<= :new.x and x1>:new.x and y0<= :new.y and y1>:new.y;

Select count(*) into totphones

From TELEPHONE

Where PhoneState = 'Active' and myx0<= x and x< myx1 and myy0<= y and y< myy1;

If (totphones >=myMaxCalls) then

Select max(ExId) into myExId

From EXCEPTION_LOG

Where CellId = myCellId;

Insert into EXCEPTION_LOG(ExId, CellId, ExceptionType)

Values(myExId,myCellId,'error');

Raise_Application_Error(404,'active calls limit exceeded');

Else

Update TELEPHONE

Set PhoneState = 'Active'

Where PhoneNo= :new.PhoneNo;

end if;

END ;

****status of the table telephone before updating the status:**

| PHONENO | X | Y | PHONESTATE |
|-----------|---|---|------------|
| 333000001 | 3 | 3 | 0 |
| 333000020 | 4 | 4 | 0 |
| 333000010 | 3 | 3 | 0 |
| 333000004 | 5 | 5 | 0 |

****Check of the second exercise**

| PHONENO | X | Y | PHONESTATE |
|-----------|---|---|------------|
| 333000001 | 3 | 3 | Active |
| 333000004 | 5 | 5 | Active |
| 333000010 | 3 | 3 | Active |
| 333000020 | 4 | 4 | Active |

Download CSV

Exercise 3:

Create or replace trigger updatemaxcells

Before update of MaxCalls on CELL

For each row

Declare CurrentActive number;

BEGIN

Select count(*) into CurrentActive

From TELEPHONE

Where Phonestate = 'Active' and :new.x0<= x and x< :new.x1 and :new.y0<= y and y < :new.y1;

If(CurrentActive > :new.MaxCalls) then

:new.MaxCalls:= CurrentActive;

End if;

END;

****Status of the table before updating the attribute MaxCalls**

| CELLID | X0 | Y0 | X1 | Y1 | CURRENTPHONE# | MAXCALLS |
|--------|----|----|----|----|---------------|----------|
| 1 | 0 | 0 | 10 | 10 | 4 | 3 |
| 2 | 10 | 0 | 20 | 10 | 0 | 20 |
| 3 | 0 | 10 | 10 | 20 | 0 | 20 |
| 4 | 10 | 10 | 20 | 20 | 0 | 20 |

****check**

| CELLID | X0 | Y0 | X1 | Y1 | CURRENTPHONE# | MAXCALLS |
|--------|----|----|----|----|---------------|----------|
| 1 | 0 | 0 | 10 | 10 | 11 | 4 |
| 2 | 10 | 0 | 20 | 10 | 0 | 18 |
| 3 | 0 | 10 | 10 | 20 | 0 | 18 |
| 4 | 10 | 10 | 20 | 20 | 0 | 18 |

[Download CSV](#)

Exercise 4 :

Create or replace trigger serviceguarantee

After update of MaxCalls on CELL for each row

Declare TotMax number;

Begin

Select SUM(MaxCalls) into TotMax

From CELL;

If(TotMax < 30) then

Raise_Application_Error(404,'total active users exceed the capacity of the network');

End if;

END;

****check**

ORA-04091: table SQL_PEFDOZYACVPJJCZIUREESKY.CELL is mutating, trigger/function may not see it
ORA-06512: at "SQL_PEFDOZYACVPJJCZIUREESKY.SERVICEGUARANTEE", line 3
ORA-06512: at "SYS.DBMS_SQL", line 1721