MySQL Workbench Class Exercises, Summer 2021

create database TriggerExercises;

use TriggerExercises;

Trigger to create Log File

Create table MyLog (message varchar(70));

create table Mycustomer(Fname varchar (20), Lname varchar(20),salary integer);

Delimiter $$

create trigger add_customer after insert on Mycustomer

for each row

begin

insert into Mylog values(concat('customer has been added by ',current_user(), ' ', new.Lname, ' on ',current_date()));

end;

$$

insert into Mycustomer values('Keith','Jackson',2330);

insert into Mycustomer values('Mehdi', 'Owrang', 2100);

select * from Mycustomer;

select * from Mylog;

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Delimiter $$

create trigger update_customer after update on Mycustomer

for each row

begin

```
insert into Mylog values(concat('customer has been updated by ',current_user(),'  ', new.Lname  , ' on ',current_date()));

end;

$$

update Mycustomer set salary=salary + 0.10 * salary where Lname='Owrang';

select * from Mylog;


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Delimiter $$

create trigger delete_customer after delete on Mycustomer

for each row

begin

insert into Mylog values(concat('customer has been deleted by ',current_user(),'  ', old.Lname, ' on ',current_date()));

end;

$$

delete from Mycustomer where Lname='Jackson';

select * from Mycustomer;

select * from Mylog;

**********
```

Trigger to create Summary Table

```
create table Student(id integer, name varchar(20), major varchar(20), gpa double);

create table Registration(name varchar(20), courseNo varchar(10), semester varchar(15), grade varchar(4));


create table major_gpa_summary(major varchar(15),mingpa double, maxgpa double, avggpa double);


Delimiter $$

create trigger major_gpa_insert after insert on Student

for each row

begin

delete from major_gpa_summary;

insert major_gpa_summary

select major, min(gpa),max(gpa),avg(gpa) from student group by major;

end;

$$


insert into Student value(1234,"Bob","CS", 3.8);

insert into Student value(1255,"Mary","Math", 4.0);

insert into student values(2244,"James jones","Art",3.7);

insert into student values(1991,"Ali Baba","CS",3.9);

insert into student values(4444,"Anna","Math",4.0);


select * from Student;

select * from major_gpa_summary;
```

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```
Delimiter $$
create trigger major_gpa_update after update on Student
for each row
begin
delete from major_gpa_summary;
insert major_gpa_summary
select major, min(gpa),max(gpa),avg(gpa) from student group by major;
end;
$$

Update Student set gpa=2.0 where id=1234;
select * from major_gpa_summary;
============================================================
Delimiter $$
create trigger major_gpa_delete after delete on Student
for each row
begin
delete from major_gpa_summary;
insert major_gpa_summary
select major, min(gpa),max(gpa),avg(gpa) from student group by major;
end;
$$
Delete from Student where gpa <=2.0;
select * from student;
select * from major_gpa_summary;

**********************************************************************
```

Enforcing Referential Integrity rule

Delete Parent, we need to delete children

Student is Parent, registration is Child.

insert into registration values("Bob","CSC434","Spring 2020","A");

Insert into registration values("Ali Baba","CSC493","Fall 2019","B");

This version of MySQL doesn't yet support 'multiple triggers with the same action time and event for one table'.

major_gpa_delete after delete on Student:

need to drop the major_gpa_delete trigger.

drop trigger major_gpa_delete;

```
Delimiter $$
create trigger student_delete after delete on Student
for each row
begin
delete from registration where name=old.name;
end;
$$
delete from Student where name='Bob';
select * from student;
select * from registration;
```

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Trigger for Enforcing Business Rules:

Account deposit must be at least $500.

```
create table Account(AccountType varchar(10), AccountNo varchar(10), Customer varchar(20), Balance decimal(12,2));

Delimiter $$
create trigger checkdeposit_account before insert on Account
for each row
begin
if new.balance < 500 then

SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Deposit into account can not be < 500';

end if;
end;
$$
```

Activating Trigger

```
insert into Account values('checking','12345','Mary Smith',2300.50);
insert into Account values('saving','22123','Joe Jones', 300.00);
insert into Account values('checking','23231','Jack Brown',1300.50);
insert into Account values('saving','22123','Joe Jones', 450.00);

select * from Account;
```

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Attribute Domain Checking

create table AUMajors(majors varchar(20));

Create Domain Table:

insert into AUMajors values("Art");

insert into AUMajors values("Biology");

insert into AUMajors values("Engineering");

insert into AUMajors values("Math");

insert into AUMajors values("Medicine");

insert into AUMajors values("Nursing");

insert into AUMajors values("Music");

select * from AUMajors;

// can not use multiple triggers with the same timing and event on the same table. (before insert on Student)

Delimiter $$

create trigger MajorCheck before insert on Student

for each row

Begin

declare temp Int; set temp=0;

select count(*) into temp from AUMajors

where majors = new.major;

if temp=0 then

SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Invalid major';

end if;

end;

$$

Activation:

insert into student values(3333,"Mary Jackson","Biology",3.6);

insert into student values(4141,"Isabella","Medicine",3.9);

insert into student values(4321,"Anna","Physics",4.0);

insert into student values(7676,"BiBe","Dancing",3.6);

select * from Student;

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