Lab 5 (2%)

Triggers

topics

* Triggers: <https://docs.microsoft.com/en-us/sql/relational-databases/triggers/dml-triggers?view=sql-server-ver15>

Group work acknowledgment

We, Divnoor Bhandohal, Sophia Huynh, declare that the attached assignment is our own work in accordance with the Seneca Academic Policy. No part of this assignment has been copied manually or electronically from any other source (including web sites) **or distributed to other students.**

Specify below what each member has done towards the completion of this work:

Name Task(s)

1- Divnoor Bhandohal 1-2

2- Sophia Huynh 2-3

3-

Before you start

You are to create a new database named “AviaCo” and run the sql script you are given to create the tables in the database.

If you already have the database created,

* delete all data from all tables and run all the insert commands all over again.

Or

* delete the existing aviaco database you already have, recreate a database named AviaCo and then run the sql script as is.

Instructions

Answer each of the following questions and show the result set underneath each part.

1. [10pts] Create a trigger named checkCrew that fires with a 'instead of' statement when a crew record is inserted in the crew table.

When there is already a crew with the same crew job on the same charter, print a message that says: ‘There is already a [job] on the trip’. Otherwise, insert the row in the crew table. See the testing commands below.

create trigger checkCrew ON crew

INSTEAD Of insert

as

select \* from crew order by CHAR\_TRIP;

BEGIN

declare @charter int, @e\_num int, @job varchar(20)

select @e\_num = EMP\_NUM from inserted

select @charter = Char\_trip from inserted

Select @job = CREW\_JOB from inserted

If exists (select \* from crew where CREW\_JOB = @job AND CHAR\_TRIP = @charter)

BEGIN

print 'There is already a '+ @job + ' on the crew'

END

else

BEGIN

Insert into crew (CHAR\_TRIP ,EMP\_NUM ,CREW\_JOB)

Select i.CHAR\_TRIP, i.EMP\_NUM, i.CREW\_JOB from inserted i;

select TOP 5 \* from crew order by CHAR\_TRIP;

END

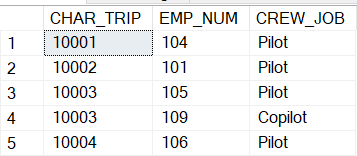
END

Go

**Testing and output:**

Show the top 5 rows from the crew table:

select \* from crew order by CHAR\_TRIP;

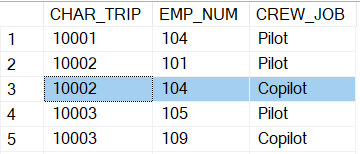


**Testing 1:**

insert into crew values (10002, 104, 'Copilot');

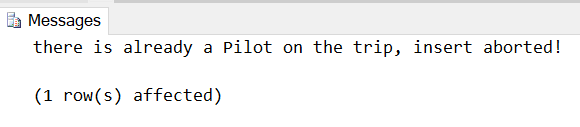
output: Show the top 5 rows from the crew table.

The insert should go through and add the highlighted row as shown below.

****

**Testing 2:**

insert into crew values (10003, 109, 'Pilot');



1. [10pts] Create a trigger named addRating on EARNEDRATING table that adds the inserted rating code to PIL\_RATINGS in the PILOT table.

create trigger addRating

ON EARNEDRATING After insert As

Begin

DECLARE @emp\_num int, @r\_code VARCHAR(10);

Set @emp\_num = (select emp\_num from inserted);

set @r\_code = (SELECT RTG\_CODE FROM inserted);

UPDATE Pilot

SET PIL\_RATINGS += '/' + @r\_code

WHERE EMP\_NUM = @emp\_num;

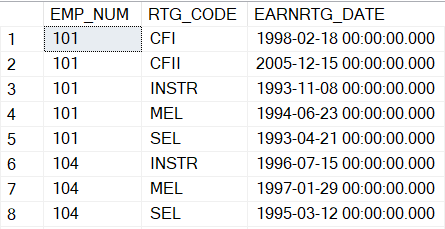
END

GO

**Before trigger:**

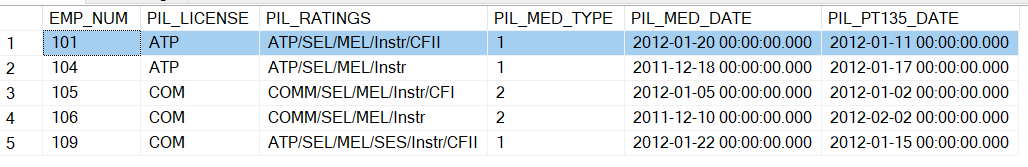
select \* from EARNEDRATING;

output: top 8 rows



select \* from PILOT;

output:



**Fire the trigger:**

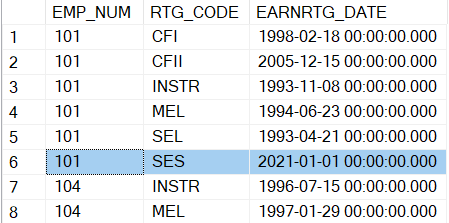
insert into EARNEDRATING values (101, 'SES', '2021-01-01')

**After trigger:**

select \* from EARNEDRATING;

output: top 8 rows

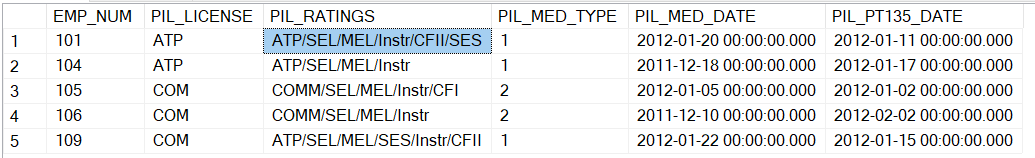
insert went through, highlighted row is added



select \* from PILOT;

output:

SES is appended to PIL\_RATINGS



1. [15pts] Create a trigger named update\_cusbalance that fires after a charter record is inserted in the charter table. The customer balance should be incremented by the charter charges calculated as CHAR\_DISTANCE (given in inserted) \* MOD\_CHG\_MILE (from the model table given the AC\_number in inserted).

create trigger update\_cusbalance

on CHARTER

after insert

as

begin

declare @code int

declare @ac\_num varchar(5)

declare @distance real

declare line\_cursor CURSOR

for select CUS\_CODE, AC\_NUMBER, CHAR\_DISTANCE from inserted;

OPEN line\_cursor;

FETCH NEXT FROM line\_cursor INTO @code, @ac\_num, @distance;

WHILE @@FETCH\_STATUS = 0

BEGIN

declare @model varchar(10)

select @model = MOD\_CODE from AIRCRAFT where @ac\_num = AC\_NUMBER

declare @miles real

select @miles = MOD\_CHG\_MILE from MODEL where @model = MOD\_CODE

declare @balance real

select @balance = @distance\* @miles

update CUSTOMER

set CUS\_BALANCE = CUS\_BALANCE + @balance

where @code = CUS\_CODE

FETCH NEXT FROM line\_cursor INTO @code, @ac\_num, @distance;

END

close line\_cursor;

DEALLOCATE line\_cursor;

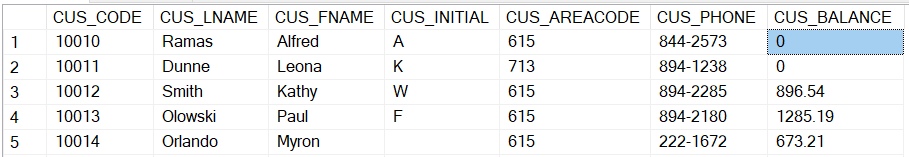
end

go

**Testing scenario 1: one-row insert**

**Before trigger:**

select \* from customer where cus\_code = 10010;



**Fire the trigger:**

insert into CHARTER values(10019, '2012-02-09', '2778V', 'MQY', 312, 1.5, 0, 67.2, 0, 10010);

**After the trigger:**

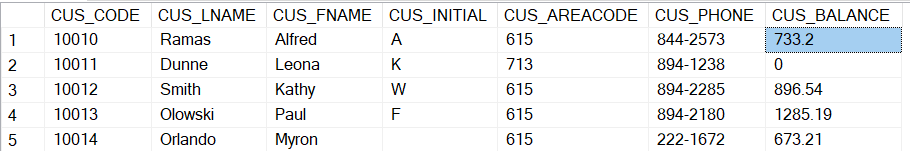
select \* from charter where char\_trip = 10019;

output:



select \* from customer where cus\_code= 10010;

output: top 5 rows. cus\_balance updated.

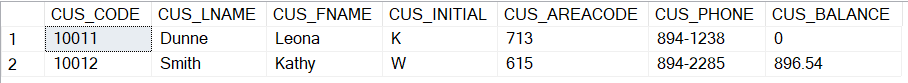


**Testing scenario 2: multi-row insert, with diff cus\_code**

**Before trigger:**

select \* from customer where cus\_code in (10011, 10012);

output:

****

**Fire the trigger:**

insert into CHARTER values

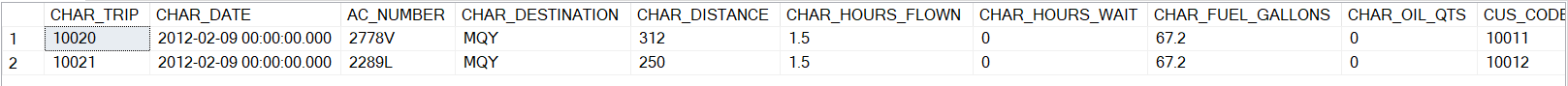
(10020, '2012-02-09', '2778V', 'MQY', 312, 1.5, 0, 67.2, 0, 10011),

(10021, '2012-02-09', '2289L', 'MQY', 250, 1.5, 0, 67.2, 0, 10012);

**After trigger:**

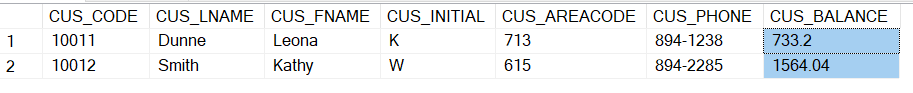
select \* from charter where char\_trip in (10020, 10021);

output:

****

select \* from customer where cus\_code in (10011, 10012);

output:



**Testing scenario 3: multi-row insert, with same cus\_code**

**Before trigger:**

select \* from customer where cus\_code=10016;

output:



**Fire the trigger:**

insert into CHARTER values

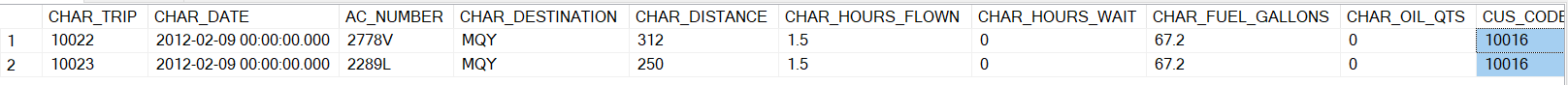
(10022, '2012-02-09', '2778V', 'MQY', 312, 1.5, 0, 67.2, 0, 10016),

(10023, '2012-02-09', '2289L', 'MQY', 250, 1.5, 0, 67.2, 0, 10016);

**After the trigger:**

select \* from charter where char\_trip in (10022, 10023);

output:

****

select \* from customer where cus\_code=10016;

****

Manual calculation:

-- MOD\_CHG\_MILE= 2.35

-- CHAR\_DISTANCE= 312

-- cus\_balance increment by 733.2

-- MOD\_CHG\_MILE= 2.67

-- char\_distance= 250

-- cus\_balance increment by 667.5

-- total increment for cus 10016 is : 733.2 + 667.5

SUBMISSION

Submit your lab5\_GroupX.doc file on BB. Replace X with your group number.

If a student does not contribute to the work, do not list his/her name(s) under the group section in the lab file and will get 0.