## Lab 15: Triggers

1. when inserting a new record, update the Courses table's OpenSeats for the course into which the student is being enrolled.

```
if(OBJECT_ID ('UpdateOpenSeats','tr')is not null)
    drop trigger UpdateOpenSeats
go
CREATE TRIGGER UpdateOpenSeats
    ON CourseEnrollment FOR INSERT
    AS
    DECLARE @CourseId AS INT

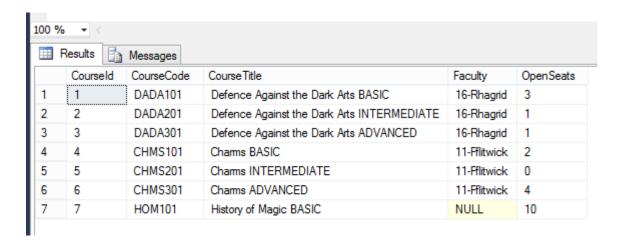
SELECT @CourseId = CourseId FROM inserted

UPDATE Courses
    set Courses.OpenSeats = Courses.OpenSeats - 1
    where Courses.CourseId = @CourseId
    AND Courses.OpenSeats >= 1
```

Results   Messages	100 %	▼ <								
1     1     01-HJPotter     1     85.64       2     2     01-HJPotter     4     99.99       3     3     03-HJGranger     1     92.22       4     4     03-HJGranger     4     99       5     5     02-RBWeasley     1     91       6     6     02-RBWeasley     4     88	Results Messages									
2 2 01-HJPotter 4 99.99 3 3 03-HJGranger 1 92.22 4 4 03-HJGranger 4 99 5 5 02-RBWeasley 1 91 6 6 02-RBWeasley 4 88		EnrollmentId	StudentId	Courseld	FinalGrade					
3 3 03-HJGranger 1 92.22 4 4 03-HJGranger 4 99 5 5 02-RBWeasley 1 91 6 6 02-RBWeasley 4 88	1	1	01-HJPotter	1	85.64					
4 4 03-HJGranger 4 99 5 5 02-RBWeasley 1 91 6 6 02-RBWeasley 4 88	2	2	01-HJPotter	4	99.99					
5 5 02-RBWeasley 1 91 6 6 02-RBWeasley 4 88	3	3	03-HJGranger	1	92.22					
6 6 02-RBWeasley 4 88	4	4	03-HJGranger	4	99					
o c caratrosco, i	5	5	02-RBWeasley	1	91					
7 7 01-HJPotter 2 85.64	6	6	02-RBWeasley	4	88					
	7	7	01-HJPotter	2	85.64					
8 8 03-HJGranger 6 NULL	8	8	03-HJGranger	6	NULL					

100 % ▼ <

	Courseld	CourseCode	CourseTitle	Faculty	OpenSeats
1	1	DADA101	Defence Against the Dark Arts BASIC	16-Rhagrid	3
2	2	DADA201	Defence Against the Dark Arts INTERMEDIATE	16-Rhagrid	2
3	3	DADA301	Defence Against the Dark Arts ADVANCED	16-Rhagrid	1
4	4	CHMS101	Charms BASIC	11-Fflitwick	2
5	5	CHMS201	Chams INTERMEDIATE	11-Fflitwick	0
6	6	CHMS301	Charms ADVANCED	11-Fflitwick	4
7	7	HOM101	History of Magic BASIC	NULL	10



2.when deleting a record, update the Courses table's OpenSeats for the course from which the student was deleted.

```
if(OBJECT_ID ('UpdateOpenSeats2','tr')is not null)
    drop trigger UpdateOpenSeats2
CREATE TRIGGER UpdateOpenSeats2
       ON CourseEnrollment FOR DELETE
       AS
               DECLARE @CourseId AS INT
               SELECT @CourseId = CourseId FROM deleted
               UPDATE Courses
                      set Courses.OpenSeats = Courses.OpenSeats + 1
                      where Courses.CourseId = @CourseId
GO
   DELETE FROM CourseEnrollment
         WHERE EnrollmentId = 11;
   from Courses
100 %
Results
           Messages
     Courseld
               CourseCode
                           Course Title
                                                                  Faculty
                                                                            OpenSeats
               DADA101
                           Defence Against the Dark Arts BASIC
                                                                  16-Rhagrid
1
     1
                                                                             3
2
      2
               DADA201
                           Defence Against the Dark Arts INTERMEDIATE
                                                                  16-Rhagrid
                                                                             2
     3
                           Defence Against the Dark Arts ADVANCED
3
               DADA301
                                                                  16-Rhagrid
                                                                             1
                           Chams BASIC
     4
               CHMS101
                                                                  11-Fflitwick
                                                                             2
4
5
     5
                           Chams INTERMEDIATE
               CHMS201
                                                                  11-Fflitwick
                           Chams ADVANCED
                                                                             4
6
     6
               CHMS301
                                                                  11-Fflitwick
     7
7
               HOM101
                           History of Magic BASIC
                                                                  NULL
                                                                             10
```

3.if an update happened on the Courseld (student switched courses), adjust the Courses table's OpenSeats accordingly.

```
if(OBJECT ID ('UpdateOpenSeats3','tr')is not null)
    drop trigger UpdateOpenSeats3
CREATE TRIGGER UpdateOpenSeats3
       ON CourseEnrollment FOR UPDATE
       AS
               DECLARE @oldCourseId AS INT
               DECLARE @newCourseId AS INT
               SELECT @oldCourseId = CourseId FROM deleted
               SELECT @newCourseId = CourseId FROM inserted
               UPDATE Courses
                       set Courses.OpenSeats = Courses.OpenSeats + 1
                       where Courses.CourseId = @oldCourseId
               UPDATE Courses
                       set Courses.OpenSeats = Courses.OpenSeats - 1
                       where Courses.CourseId = @newCourseId
                              AND Courses.OpenSeats >= 1

<u>□UPDATE</u> CourseEnrollment

        SET CourseId = 3
        WHERE EnrollmentId = 7
  ⊟Select *
      from Courses
0 %
Results
          Messages
    Courseld
                                                                 Faculty
                                                                            OpenSeats 5 4 1
              CourseCode
                          CourseTitle
              DADA101
                                                                  16-Rhagrid
    1
                           Defence Against the Dark Arts BASIC
                                                                            3
2
     2
              DADA201
                           Defence Against the Dark Arts INTERMEDIATE
                                                                            3
                                                                  16-Rhagrid
3
     3
              DADA301
                           Defence Against the Dark Arts ADVANCED
                                                                  16-Rhagrid
     4
                           Chams BASIC
                                                                            2
              CHMS101
                                                                  11-Fflitwick
5
     5
                           Chams INTERMEDIATE
              CHMS201
                                                                  11-Fflitwick
                          Chams ADVANCED
6
     6
              CHMS301
                                                                  11-Fflitwick
                                                                            4
    7
              HOM101
                           History of Magic BASIC
                                                                 NULL
                                                                            10
```