

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
GO

```

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Results Messages

	EnrollmentId	StudentId	CourseId	FinalGrade
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
7	7	01-HJPotter	2	85.64
8	8	03-HJGranger	6	NULL

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Results Messages

	CourseId	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-Pfritwick	2
5	5	CHMS201	Charms INTERMEDIATE	11-Pfritwick	0
6	6	CHMS301	Charms ADVANCED	11-Pfritwick	4
7	7	HOM101	History of Magic BASIC	NULL	10

100 % <					
Results		Messages			
	CourseId	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	1
3	3	DADA301	Defence Against the Dark Arts ADVANCED	16-Rhagrid	1
4	4	CHMS101	Chams BASIC	11-Pfritwick	2
5	5	CHMS201	Chams INTERMEDIATE	11-Pfritwick	0
6	6	CHMS301	Chams ADVANCED	11-Pfritwick	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
go
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

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Results		Messages			
	CourseId	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	Chams BASIC	11-Pfritwick	2
5	5	CHMS201	Chams INTERMEDIATE	11-Pfritwick	0
6	6	CHMS301	Chams ADVANCED	11-Pfritwick	4
7	7	HOM101	History of Magic BASIC	NULL	10

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

```
if(OBJECT_ID ('UpdateOpenSeats3','tr')is not null)
    drop trigger UpdateOpenSeats3
go
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
```

GO

```
UPDATE CourseEnrollment
SET CourseId = 3
WHERE EnrollmentId = 7

Select *
from Courses
```

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Results Messages					
	CourseId	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	3
3	3	DADA301	Defence Against the Dark Arts ADVANCED	16-Rhagrid	0
4	4	CHMS101	Chams BASIC	11-Pfritwick	2
5	5	CHMS201	Chams INTERMEDIATE	11-Pfritwick	0
6	6	CHMS301	Chams ADVANCED	11-Pfritwick	4
7	7	HOM101	History of Magic BASIC	NULL	10