CSE 581

Lab 13: Triggers

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Purpose:

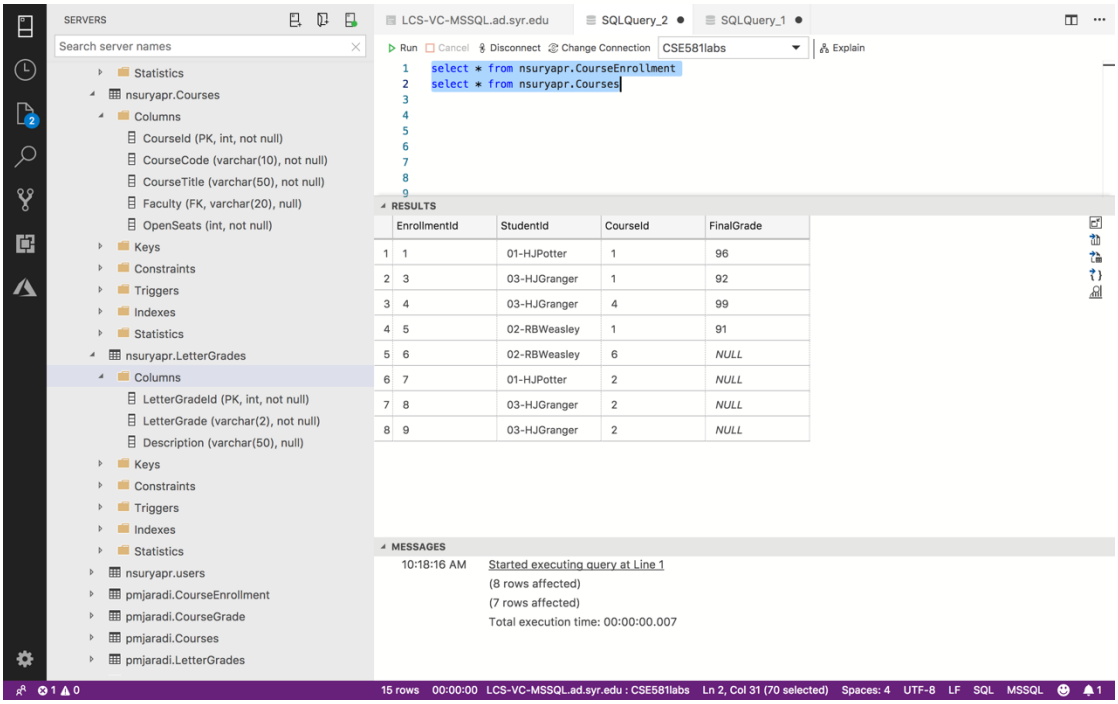
Create a trigger.

Create a trigger[1] on insert/delete/update of the Enrollment table:

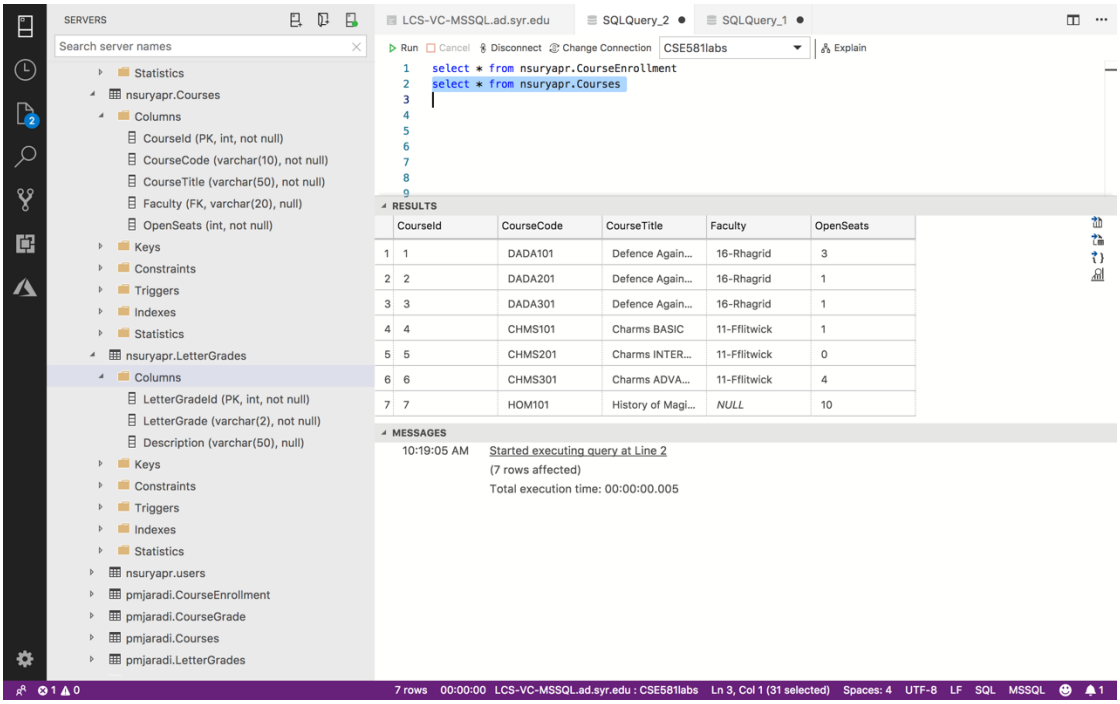
Scripts common:

```
select * from nsuryapr.CourseEnrollment
select * from nsuryapr.Courses
```

Tables before changes:



[1] You can create 3 triggers, one per action. If you create a single trigger that can do all 3, you get an extra 5% bonus.



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

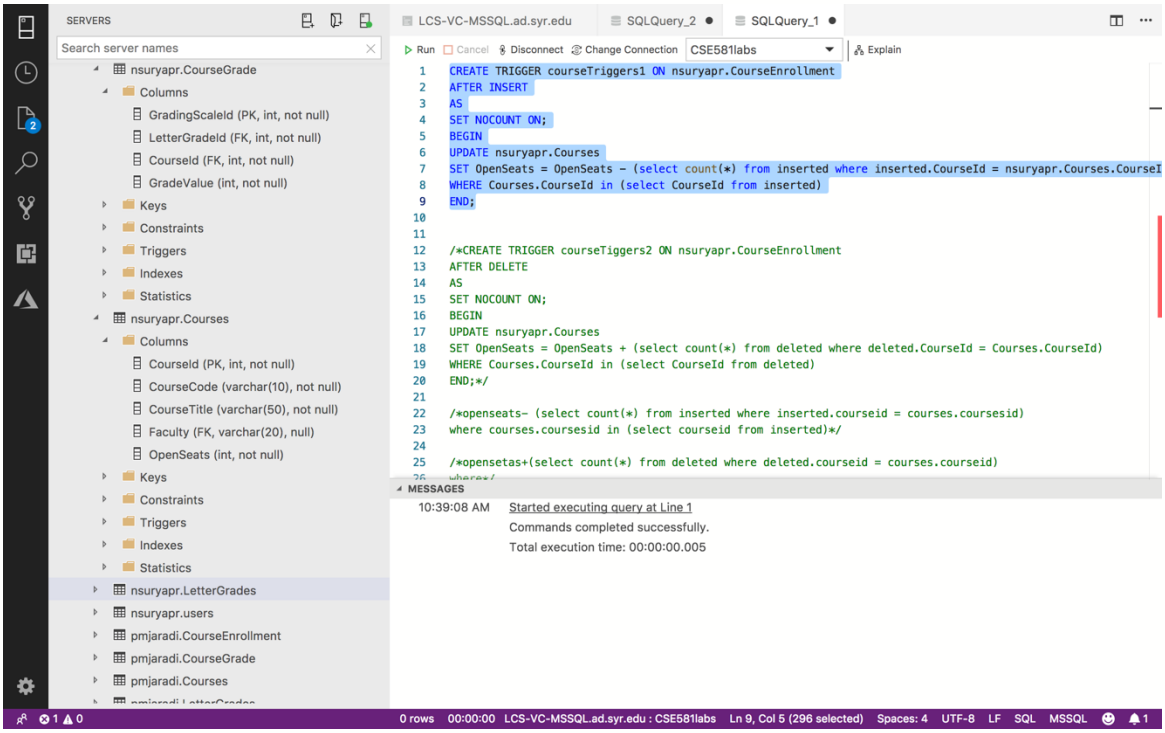
Script:

```
CREATE TRIGGER courseTriggers1 ON nsuryapr.CourseEnrollment
AFTER INSERT
AS
SET NOCOUNT ON;
BEGIN
UPDATE nsuryapr.Courses
SET OpenSeats = OpenSeats - (select count(*) from inserted where inserted.CourseId =
nsuryapr.Courses.CourseId)
WHERE Courses.CourseId in (select CourseId from inserted)
END;
```

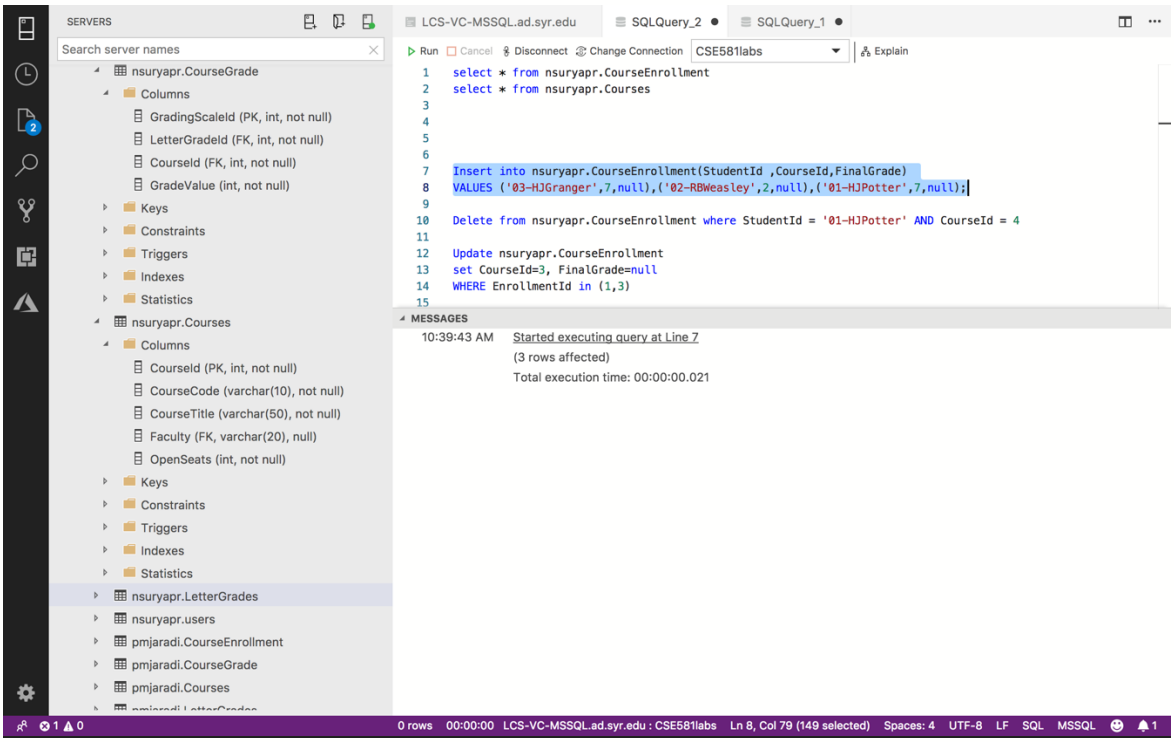
Insert statement

```
Insert into nsuryapr.CourseEnrollment(StudentId ,CourseId,FinalGrade)
VALUES ('03-HJGranger',7,null),('02-RBWeasley',2,null),('01-HJPotter',7,null);
```

Execution of script for insert trigger

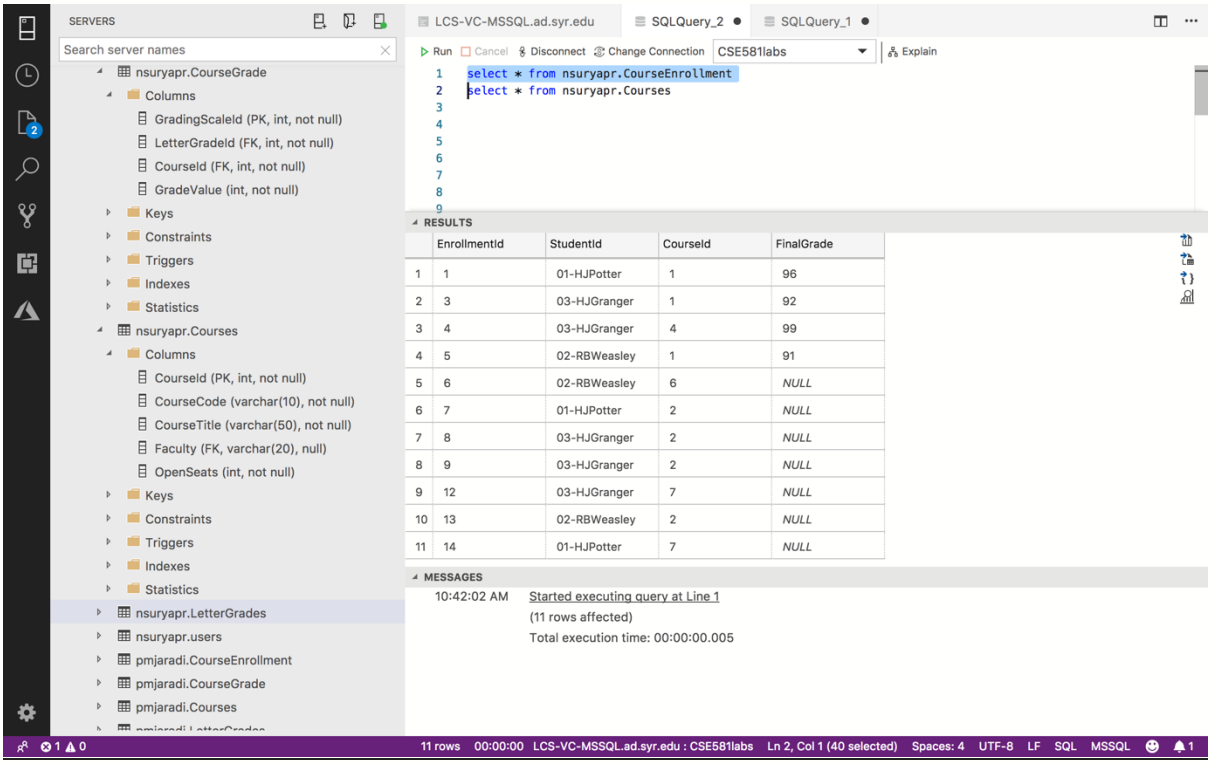


Execution of insert statement



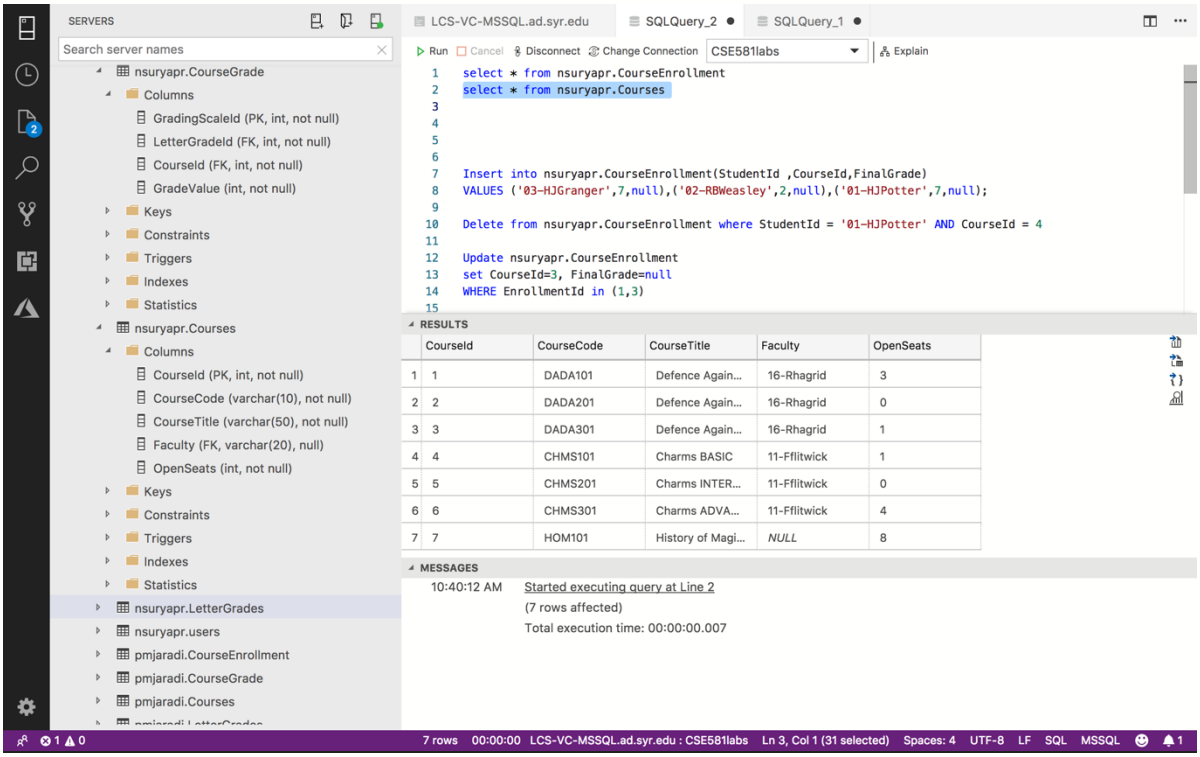
CourseEnrollment table after insert trigger

Inserted for enrollment id = 12,13,14
I had previously added and deleted for enrollment id 10,11 and did not reset.



Courses table after insert trigger

CourseID = 7 open seats became 8 from 10 and for CourseID = 2 openseats became 0 from 1



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

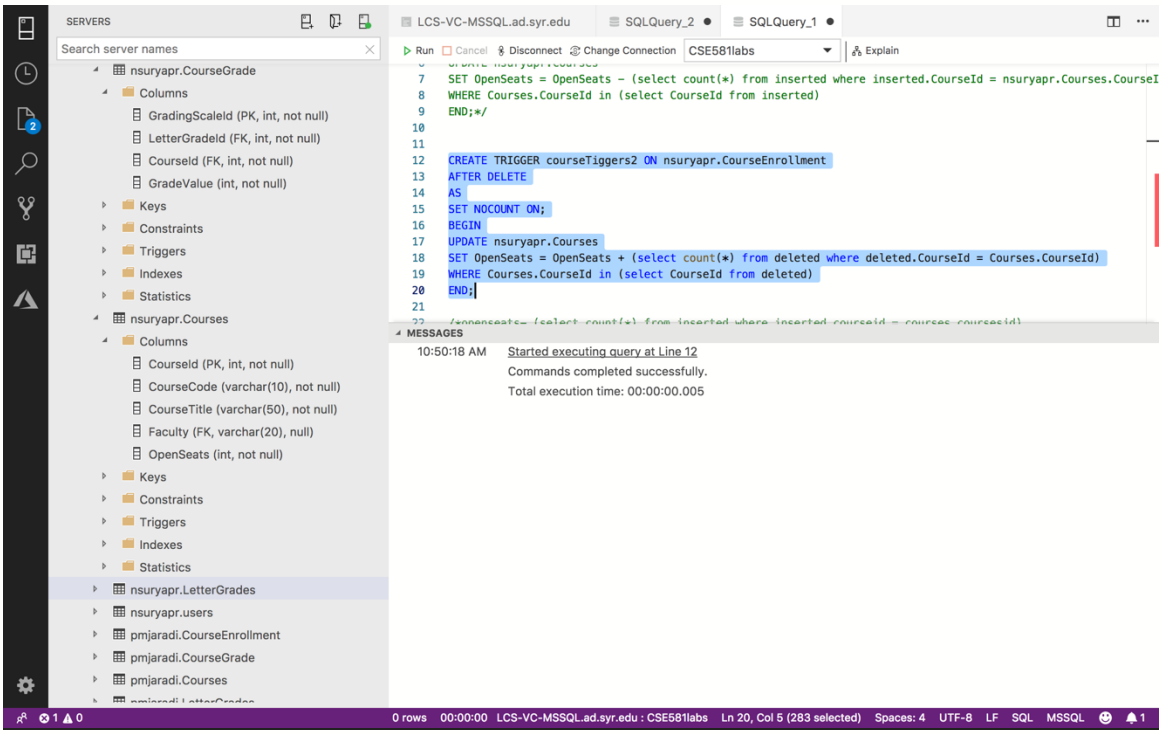
SCRIPT:

```
CREATE TRIGGER courseTiggers2 ON nsuryapr.CourseEnrollment
AFTER DELETE
AS
SET NOCOUNT ON;
BEGIN
UPDATE nsuryapr.Courses
SET OpenSeats = OpenSeats + (select count(*) from deleted where deleted.CourseId =
Courses.CourseId)
WHERE Courses.CourseId in (select CourseId from deleted)
END;
```

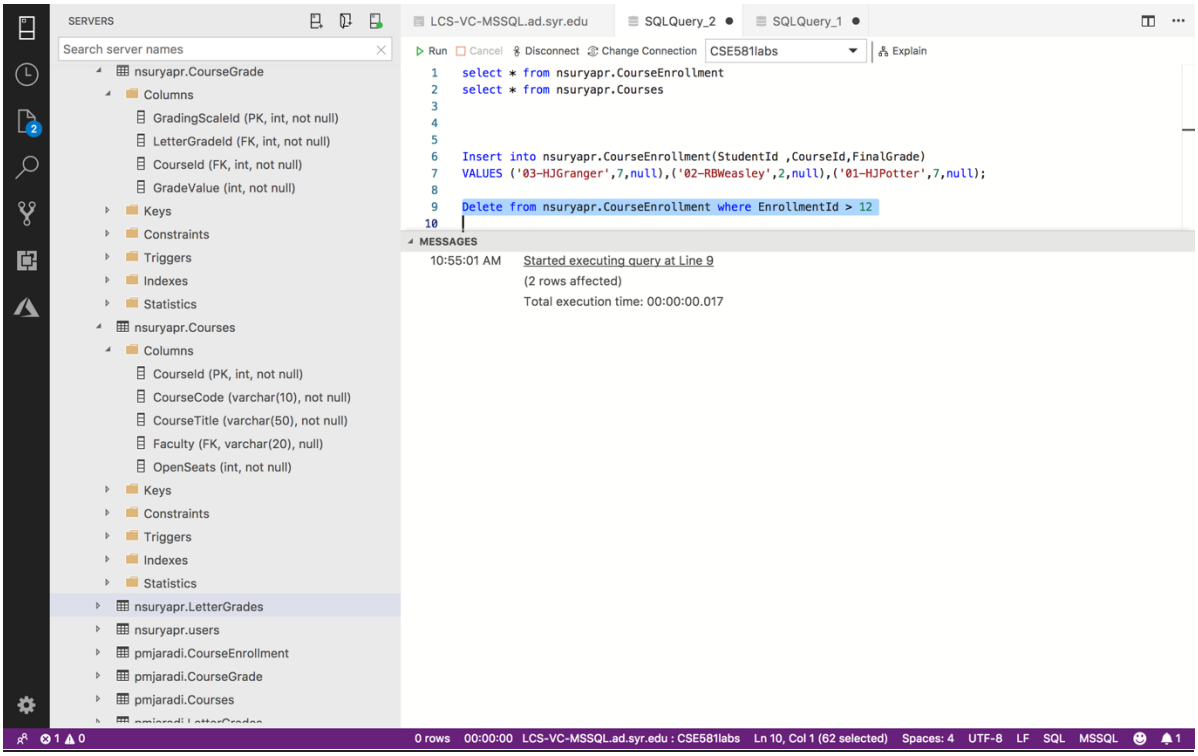
Delete statement

```
Delete from nsuryapr.CourseEnrollment where EnrollmentId > 12
```

Execution of script for delete trigger

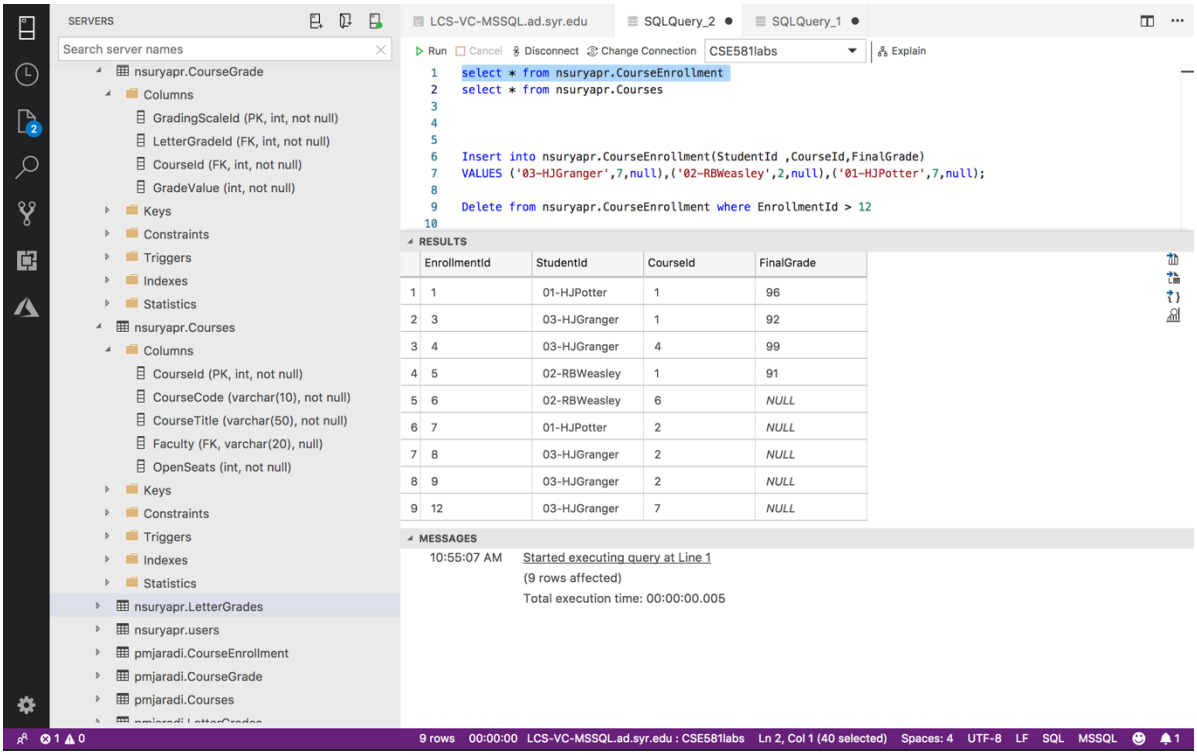


Execution of delete statement



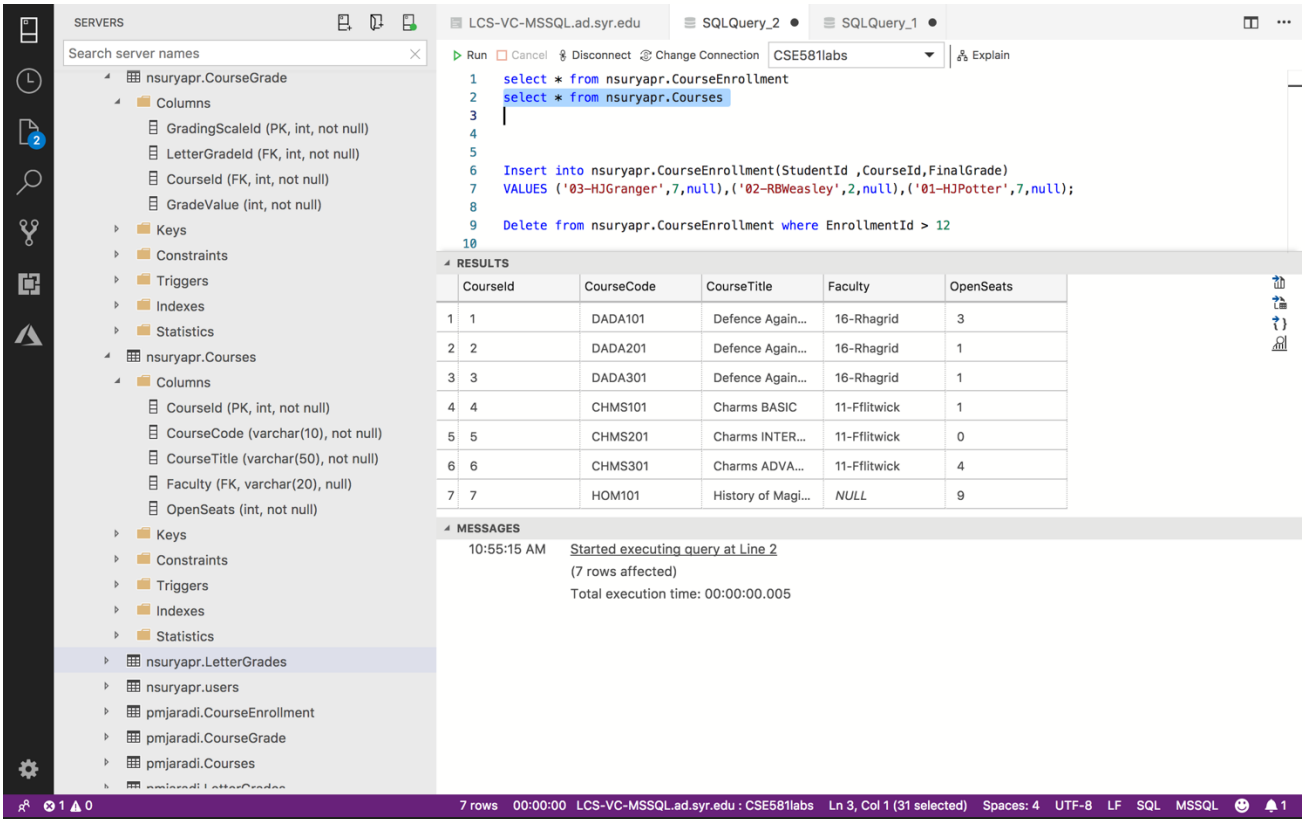
CourseEnrollment table after delete trigger

CourseID = 13,14 DELETED SINCE >12



Courses table after delete trigger

Courseid = 7 openseats increased by 1 and for coursed = 2 increased by 1



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

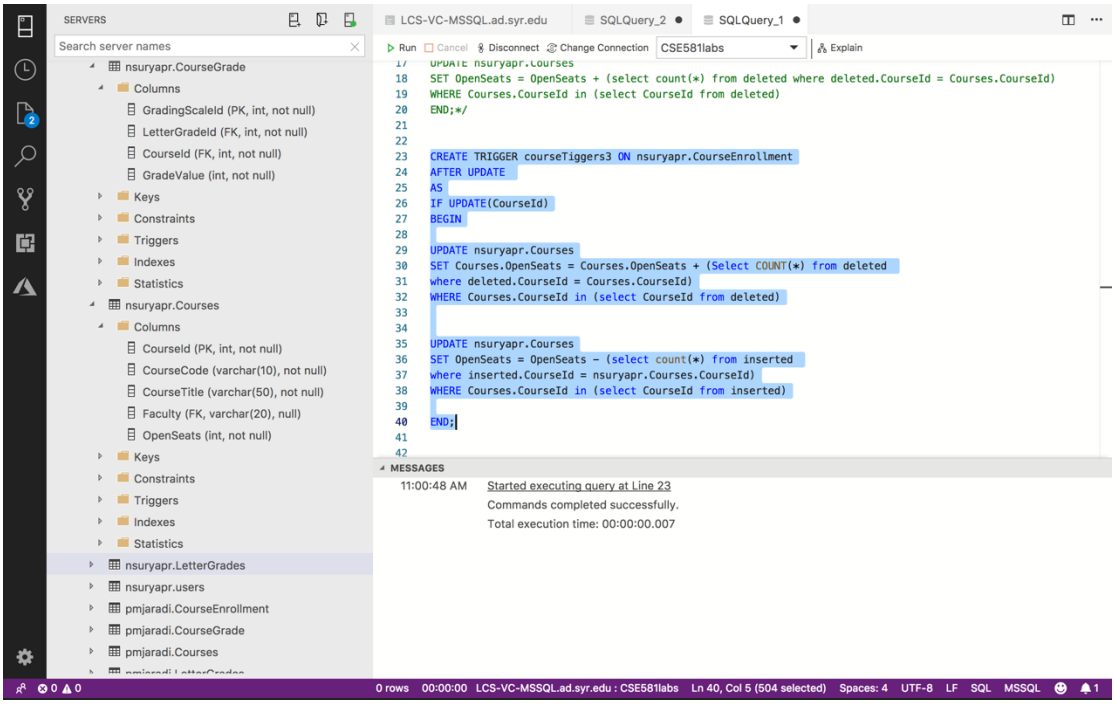
SCRIPT:

```
CREATE TRIGGER courseTiggers3 ON nsuryapr.CourseEnrollment
AFTER UPDATE
AS
IF UPDATE(CourseId)
BEGIN

UPDATE nsuryapr.Courses
SET Courses.OpenSeats = Courses.OpenSeats + (Select COUNT(*) from deleted
where deleted.CourseId = Courses.CourseId)
WHERE Courses.CourseId in (select CourseId from deleted)


UPDATE nsuryapr.Courses
SET OpenSeats = OpenSeats - (select count(*) from inserted
where inserted.CourseId = nsuryapr.Courses.CourseId)
WHERE Courses.CourseId in (select CourseId from inserted)

END;
```

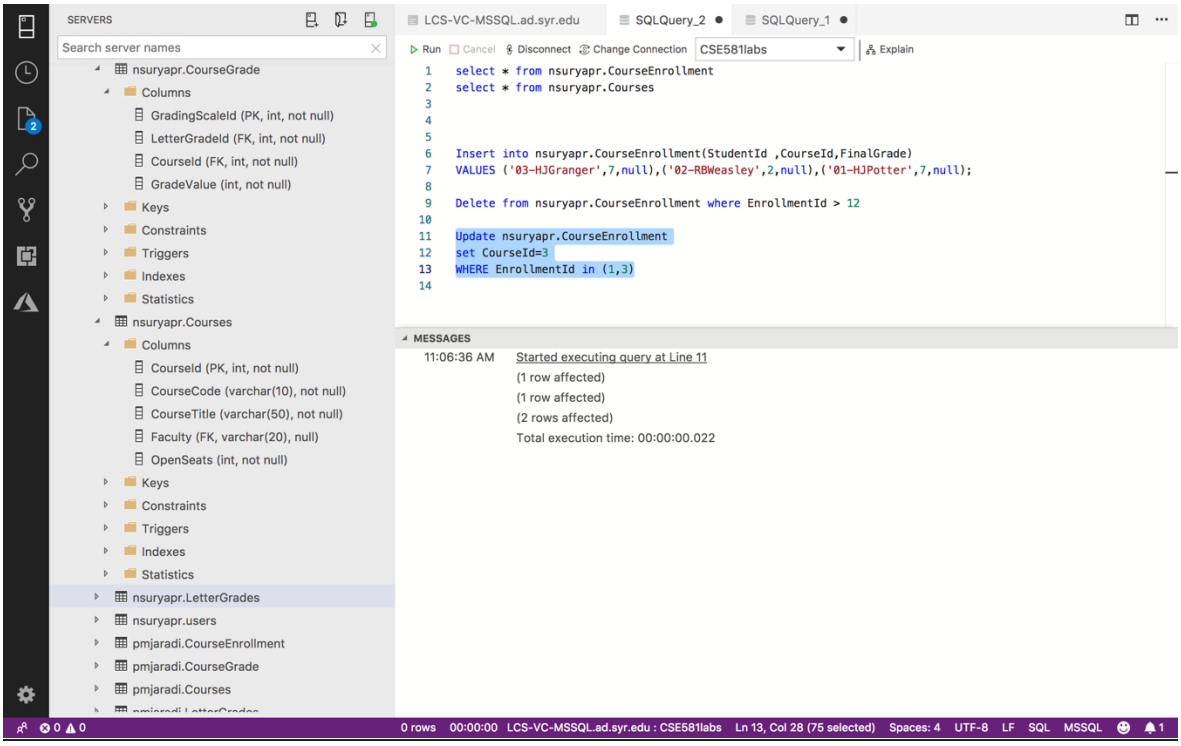
Update statement:

```
Update nsuryapr.CourseEnrollment
set CourseId=3
WHERE EnrollmentId in (1,3)
```

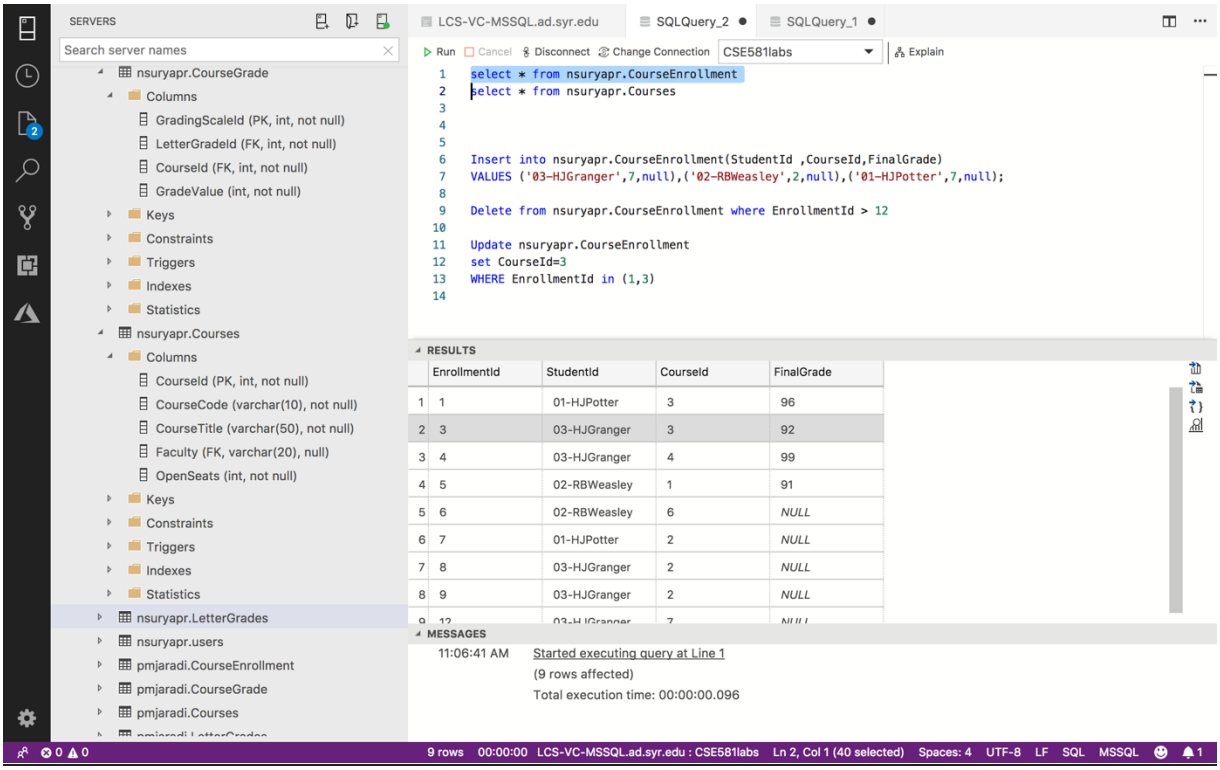
Execution of script for update trigger



Execution of update statement



CourseEnrollment table after update trigger



Courses table after update trigger