

## Lab 14: Cursors

### Purpose:

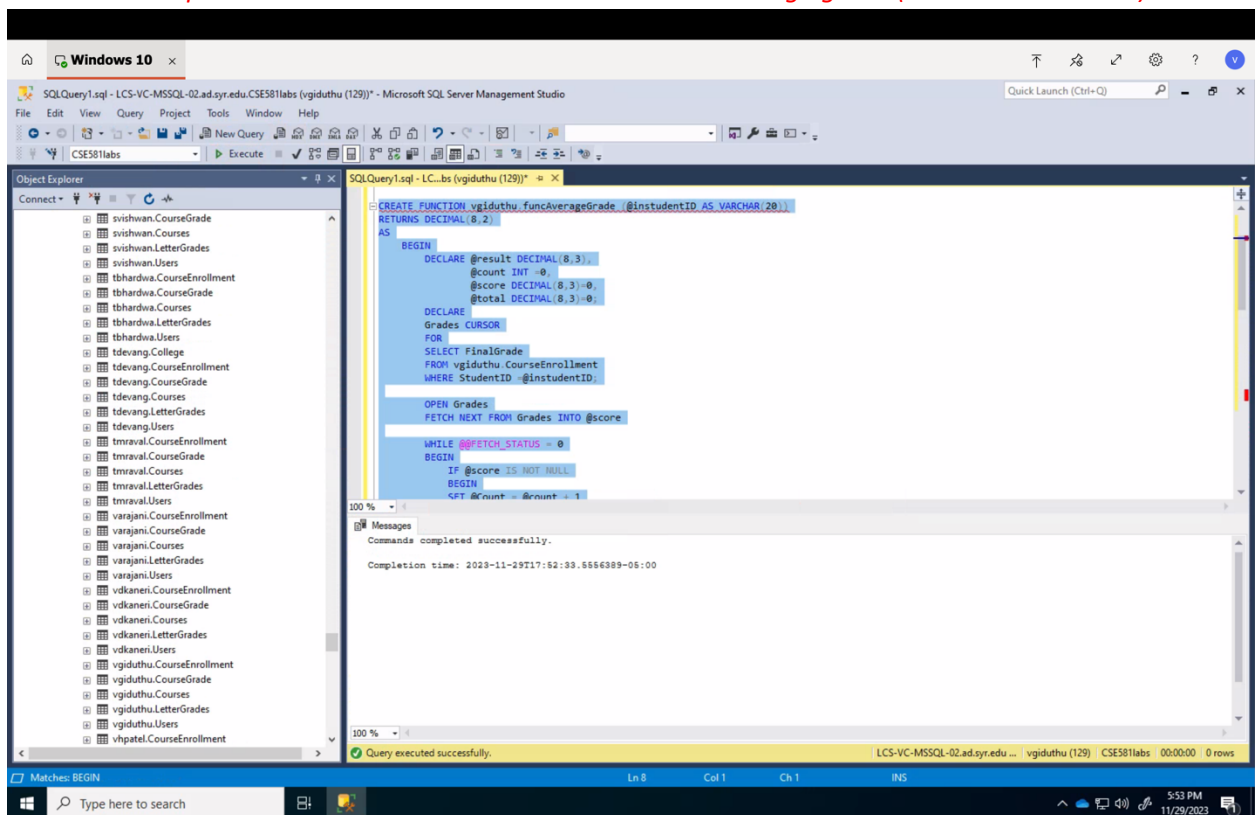
Create a function with a **cursor**.

### Deliverables:

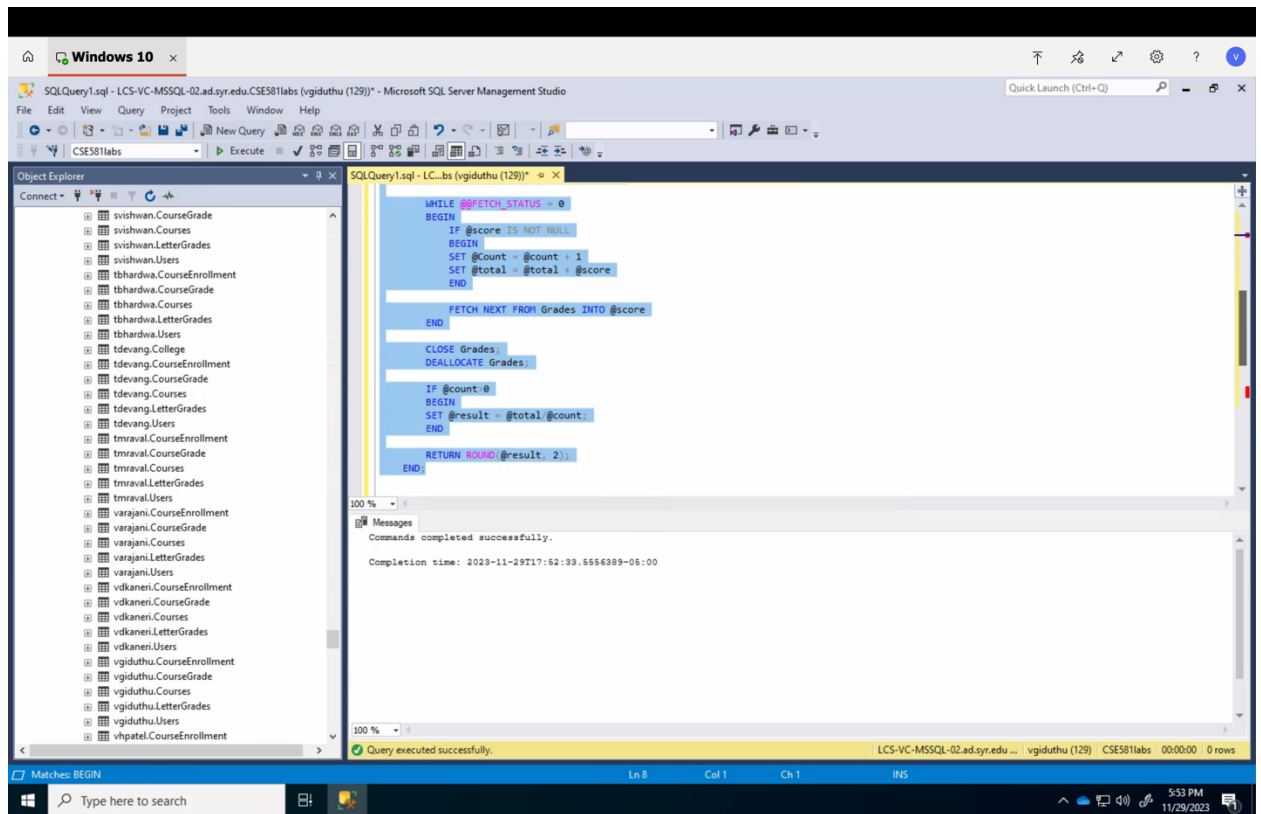
Multiple screenshots, as described through the lab.  
Scripts that you used to carry out the actions.

### Steps:

1. Create a function which will walk through the Enrollment table and calculate the average grades for each of the students<sup>1</sup>. Provide a **screenshot** of script execution. *The function will take in a student id as a parameter and then calculate that student's average grade (round to hundredth).*



<sup>1</sup> Please note that this can be done in easier ways, but the point here is to create a cursor and make sure it works.



2. Execute the function. Provide a **screenshot** of execution, showing the results. Also provide a **screenshot** of the data, proving that your function worked as expected (please write a single SELECT statement that will provide the answers).

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The top menu bar includes File, Edit, View, Query, Project, Tools, Window, and Help. The toolbar contains icons for various database operations. The Object Explorer on the left shows a tree view of the database schema, including tables like vishwan.CourseGrade, vishwan.Courses, vishwan.LetterGrades, vishwan.Users, tbhardwa.CourseEnrollment, tbhardwa.Courses, tbhardwa.LetterGrades, tbhardwa.Users, tdevang.College, tdevang.CourseEnrollment, tdevang.CourseGrade, tdevang.Courses, tdevang.LetterGrades, tdevang.Users, tmraval.CourseEnrollment, tmraval.CourseGrade, tmraval.Courses, tmraval.LetterGrades, tmraval.Users, varajani.CourseEnrollment, varajani.Courses, varajani.LetterGrades, varajani.Users, vdkaneri.CourseEnrollment, vdkaneri.CourseGrade, vdkaneri.Courses, vdkaneri.LetterGrades, vdkaneri.Users, vgiduthu.CourseEnrollment, vgiduthu.CourseGrade, vgiduthu.Courses, vgiduthu.LetterGrades, vgiduthu.Users, and vhpatel.CourseEnrollment.

The SQL Query window on the right shows the following query:

```
-- step-2
SELECT vgiduthu_funcAverageGrade('01-HOPotter');
SELECT vgiduthu_funcAverageGrade('02-RBweasley');
SELECT vgiduthu_funcAverageGrade('03-HOGranger');

SELECT AVG(CONVERT(DECIMAL(8,2), FinalGrade)) AS AverageGrade, StudentId
FROM vgiduthu.CourseEnrollment
GROUP BY StudentId;

SELECT ROUND(96.66666667, 2);
```

The Results pane shows the output of the query, displaying three rows of data:

(No column name)
1 93.50
1 92.00
1 89.50

The status bar at the bottom indicates that the query was executed successfully. The bottom of the screen shows the Windows taskbar with the search bar and system clock.

Windows 10 x

SQLQuery1.sql - LCS-VC-MSSQL-02.ad.syr.edu.CSE581labs (vgiduthu (129)) - Microsoft SQL Server Management Studio

Object Explorer

Connect

- svishwan.CourseGrade
- svishwan.Courses
- svishwan.LetterGrades
- svishwan.Users
- tbhardwa.CourseEnrollment
- tbhardwa.Courses
- tbhardwa.LetterGrades
- tbhardwa.Users
- tdevang.College
- tdevang.CourseEnrollment
- tdevang.Courses
- tdevang.LetterGrades
- tdevang.Users
- tmraval.CourseEnrollment
- tmraval.Courses
- tmraval.LetterGrades
- tmraval.Users
- varajani.CourseEnrollment
- varajani.Courses
- varajani.LetterGrades
- varajani.Users
- vdkaneri.CourseEnrollment
- vdkaneri.Courses
- vdkaneri.LetterGrades
- vdkaneri.Users
- vgiduthu.CourseEnrollment
- vgiduthu.Courses
- vgiduthu.LetterGrades
- vgiduthu.Users
- vhpatel.CourseEnrollment

SQLQuery1.sql - LCS-VC-MSSQL-02.ad.syr.edu.CSE581labs (vgiduthu (129))

```
-- step-2
SELECT vgiduthu_funcAverageGrade('01-HJPotter');
SELECT vgiduthu_funcAverageGrade('02-RBWesley');
SELECT vgiduthu_funcAverageGrade('03-HJGranger');

SELECT AVG(CONVERT(DECIMAL(8,2), FinalGrade)) AS AverageGrade, StudentId
FROM vgiduthu.CourseEnrollment
GROUP BY StudentId;

SELECT ROUND(96.66666667, 2);
```

Results

(1 row affected)

(1 row affected)

(1 row affected)

Completion time: 2023-11-29T18:04:06.8945742-05:00

Query executed successfully.

LCS-VC-MSSQL-02.ad.syr.edu... vgiduthu (129) CSE581labs 00:00:00 3 rows

Windows 10 x

SQLQuery1.sql - LCS-VC-MSSQL-02.ad.syr.edu.CSE581labs (vgiduthu (129)) - Microsoft SQL Server Management Studio

Object Explorer

Connect

- svishwan.CourseGrade
- svishwan.Courses
- svishwan.LetterGrades
- svishwan.Users
- tbhardwa.CourseEnrollment
- tbhardwa.Courses
- tbhardwa.LetterGrades
- tbhardwa.Users
- tdevang.College
- tdevang.CourseEnrollment
- tdevang.Courses
- tdevang.LetterGrades
- tdevang.Users
- tmraval.CourseEnrollment
- tmraval.Courses
- tmraval.LetterGrades
- tmraval.Users
- varajani.CourseEnrollment
- varajani.Courses
- varajani.LetterGrades
- varajani.Users
- vdkaneri.CourseEnrollment
- vdkaneri.Courses
- vdkaneri.LetterGrades
- vdkaneri.Users
- vgiduthu.CourseEnrollment
- vgiduthu.Courses
- vgiduthu.LetterGrades
- vgiduthu.Users
- vhpatel.CourseEnrollment

SQLQuery1.sql - LCS-VC-MSSQL-02.ad.syr.edu.CSE581labs (vgiduthu (129))

```
-- step-2
SELECT vgiduthu_funcAverageGrade('01-HJPotter');
SELECT vgiduthu_funcAverageGrade('02-RBWesley');
SELECT vgiduthu_funcAverageGrade('03-HJGranger');

SELECT AVG(CONVERT(DECIMAL(8,2), FinalGrade)) AS AverageGrade, StudentId
FROM vgiduthu.CourseEnrollment
GROUP BY StudentId;

SELECT ROUND(96.66666667, 2);
```

Results

AverageGrade	StudentId
93.5000000	01-HJPotter
92.0000000	02-RBWesley
89.5000000	03-HJGranger

(No column name)

96.670000000
--------------

Query executed successfully.

LCS-VC-MSSQL-02.ad.syr.edu... vgiduthu (129) CSE581labs 00:00:00 4 rows

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the connection is to 'LCS-VC-MSSQL-02.ad.syr.edu.CSE581labs (vgiduthu (129))'. The Object Explorer on the left shows a tree view of the database schema, including tables like 'svishwan.CourseGrade', 'svishwan.Courses', 'svishwan.LetterGrades', 'svishwan.Users', 'tbhardwa.CourseEnrollment', 'tbhardwa.Courses', 'tbhardwa.LetterGrades', 'tbhardwa.Users', 'tdevang.College', 'tdevang.CourseEnrollment', 'tdevang.Courses', 'tdevang.LetterGrades', 'tdevang.Users', 'tmraval.CourseEnrollment', 'tmraval.CourseGrade', 'tmraval.Courses', 'tmraval.LetterGrades', 'tmraval.Users', 'varajani.CourseEnrollment', 'varajani.CourseGrade', 'varajani.Courses', 'varajani.LetterGrades', 'varajani.Users', 'vdkaneri.CourseEnrollment', 'vdkaneri.CourseGrade', 'vdkaneri.Courses', 'vdkaneri.LetterGrades', 'vdkaneri.Users', 'vgiduthu.CourseEnrollment', 'vgiduthu.CourseGrade', 'vgiduthu.Courses', 'vgiduthu.LetterGrades', 'vgiduthu.Users', and 'vhpattel.CourseEnrollment'.

The SQL Query window shows the following query:

```
-- step-2
SELECT vgiduthu_funcAverageGrade('01-HOPotter');
SELECT vgiduthu_funcAverageGrade('02-RBWeasley');
SELECT vgiduthu_funcAverageGrade('03-HOGranger');

SELECT AVG(CONVERT(DECIMAL(8,2), FinalGrade)) AS AverageGrade, StudentId
FROM vgiduthu.CourseEnrollment
GROUP BY StudentId;

SELECT ROUND(96.66666667, 2);
```

The Results window shows the execution output:

```
(3 rows affected)

(1 row affected)

Completion time: 2023-11-29T17:59:14.4131473-05:00
```

The status bar at the bottom indicates 'Query executed successfully.' and 'LCS-VC-MSSQL-02.ad.syr.edu ... vgiduthu (129) CSE581labs 00:00:00 4 rows'.