

Lab 12: Functions

Purpose:

Create a function and execute it.

Deliverables:

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

Steps:

1. Create a function that will accept CourseId and Numerical Grade and will calculate the letter grade. The function will return the appropriate *Letter Grade Description* based on the input and the **CourseGrade & LetterGrades** table¹ you created in Lab 7 & 8. Provide a **screenshot** of the function being created. **Please do not hardcode values into your function. Use the table to make the decisions.**

USE CSE581labs

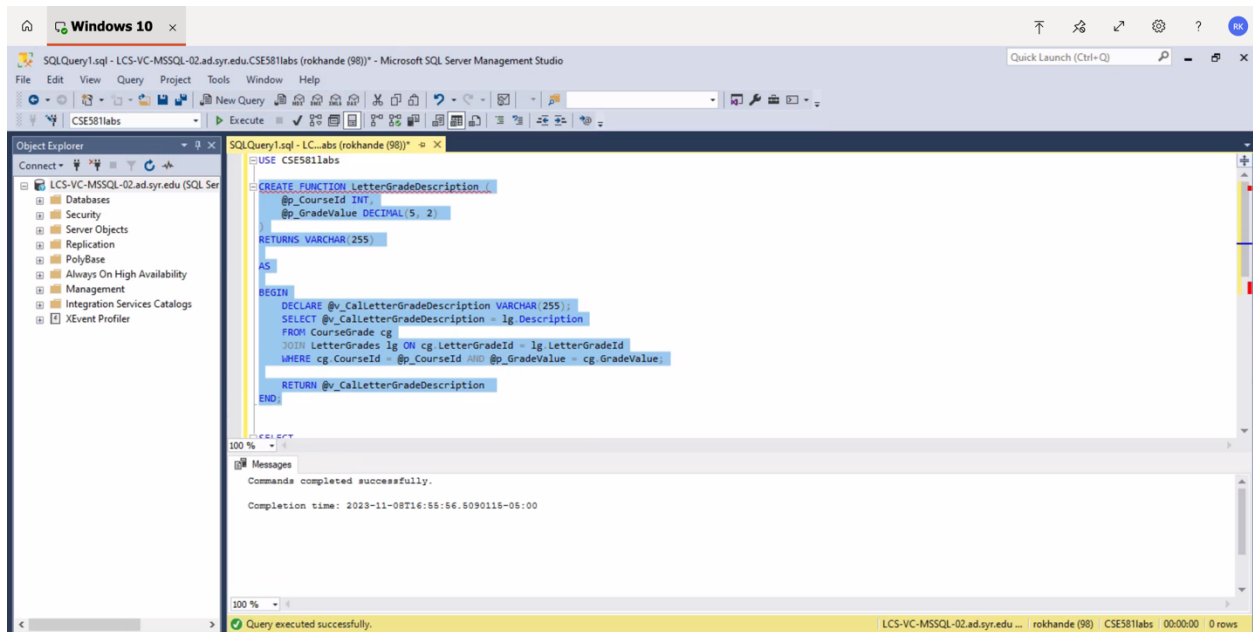
```
CREATE FUNCTION LetterGradeDescription (
    @p_CourseId INT,
    @p_GradeValue DECIMAL(5, 2)
)
RETURNS VARCHAR(255)
```

AS

```
BEGIN
    DECLARE @v_CalLetterGradeDescription VARCHAR(255);
    SELECT @v_CalLetterGradeDescription = lg.Description
    FROM CourseGrade cg
    JOIN LetterGrades lg ON cg.LetterGradeId = lg.LetterGradeId
    WHERE cg.CourseId = @p_CourseId AND @p_GradeValue = cg.GradeValue;

    RETURN @v_CalLetterGradeDescription
END;
```

¹ Please consider how grades are calculated. For example, if 90-92.9 is an A-, and you get a 92, then you get an A-.



2. Take a **screenshot** of the table containing Letter Grade Description, Course Id and Numerical grade, so that way both you and I can check that the function works properly.

SELECT

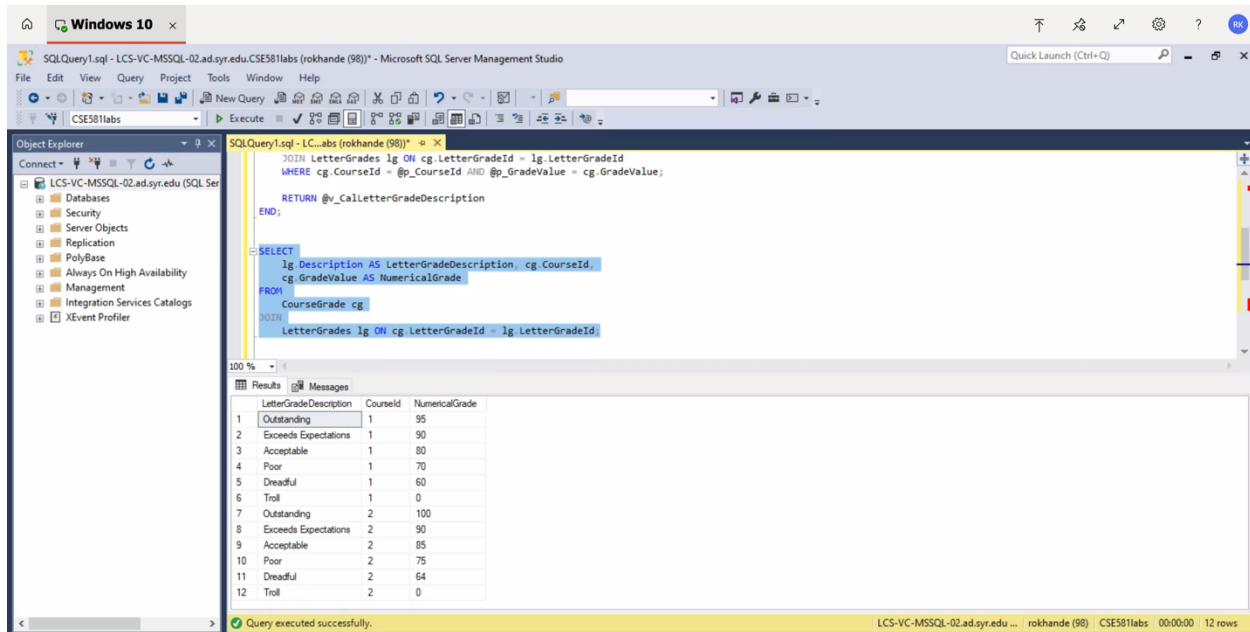
lg.Description AS LetterGradeDescription, cg.CourseId,
cg.GradeValue AS NumericalGrade

FROM

CourseGrade cg

JOIN

LetterGrades lg ON cg.LetterGradeId = lg.LetterGradeId;



- Run the function for the CourseId = 1, NumericalGrade = 95. Provide a **screenshot** of execution, showing the result.
- Run the function for the CourseId = 2, NumericalGrade = 95. Provide a **screenshot** of execution, showing the result.
- Run the function for the CourseId = 2, NumericalGrade = 85. Provide a **screenshot** of execution, showing the result.

SELECT rokhande.LetterGradeDescription(1, 95) AS Result;
 SELECT rokhande.LetterGradeDescription(2, 95) AS Result;
 SELECT rokhande.LetterGradeDescription(2, 85) AS Result;

All three results shown in one screenshot with the queries :

Windows 10

SQLQuery1.sql - LCS-VC-MSSQL-02.ad.syr.edu.CSE581labs (rokhande 98)* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

Object Explorer

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SQLQuery1.sql - LCS-VC-MSSQL-02.ad.syr.edu.CSE581labs (rokhande 98)*

```
SELECT cg.GradeValue AS NumericalGrade
FROM
  CourseGrade cg
JOIN
  LetterGrades lg ON cg.LetterGradeId = lg.LetterGradeId;

SELECT rokhande.LetterGradeDescription(1, 95) AS Result;
SELECT rokhande.LetterGradeDescription(2, 95) AS Result;
SELECT rokhande.LetterGradeDescription(2, 85) AS Result;
```

Results

Result
1 Outstanding
1 NULL
1 Acceptable

Query executed successfully. LCS-VC-MSSQL-02.ad.syr.edu ... | rokhande (98) CSE581labs 00:00:00 3 rows