

Lab 16: Cursors

Steps:

1. Create a function that will take in a student id as a parameter and then calculate that student's average grade¹.

```

IF OBJECT_ID ('[dbo].[CalculateAverageGrade]', 'TF') IS NOT NULL
    drop function [dbo].[CalculateAverageGrade];
GO
CREATE FUNCTION dbo.CalculateAverageGrade(@StudentID AS VARCHAR(20))
    RETURNS @t table ( AverageScore DECIMAL(5,2), status varchar(100))
    AS
    BEGIN
        DECLARE @status VARCHAR(50)
        DECLARE @AverageScore DECIMAL (5,2)
        DECLARE @sumOfGrade DECIMAL (5,2)
        DECLARE @grade DECIMAL (5,2)
        DECLARE @id VARCHAR(20)
        DECLARE @counter INT

        SET @status = 'Success'
        SET @counter = 0
        SET @sumOfGrade = 0

        DECLARE MyCursor CURSOR FOR
        SELECT StudentId, FinalGrade FROM CourseEnrollment;

        OPEN MyCursor;
        FETCH NEXT FROM MyCursor INTO @id, @grade;

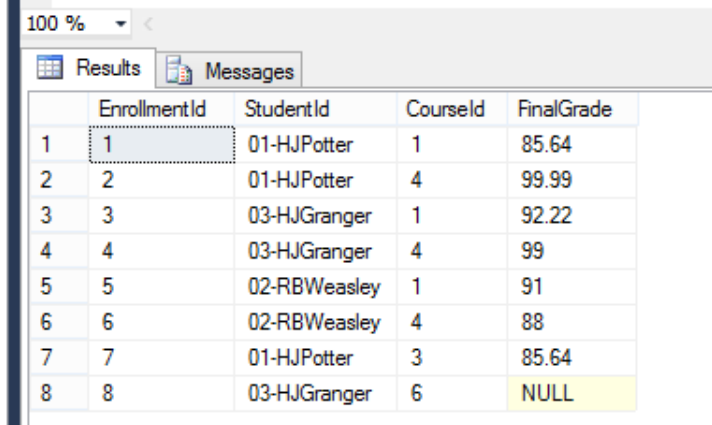
        WHILE @@FETCH_STATUS = 0
            BEGIN
                IF @id = @StudentID
                    BEGIN
                        IF @grade is not NULL
                            BEGIN
                                SET @sumOfGrade = @sumOfGrade + @grade
                                SET @counter = @counter+1
                            END
                        END
                    END
                FETCH NEXT FROM MyCursor INTO @id, @grade;
            END
        CLOSE MyCursor
        DEALLOCATE MyCursor
        BEGIN
            IF (@counter != 0)
                SET @AverageScore = @sumOfGrade / @counter
            ELSE
                BEGIN
                    SET @AverageScore = -1
                    SET @status = 'Error: student not found!'
                END
            END
        INSERT INTO @t values (@AverageScore, @status)
        RETURN
    END;

```

¹ 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. Verify that the function with the cursor/function works as expected.

Raw data:

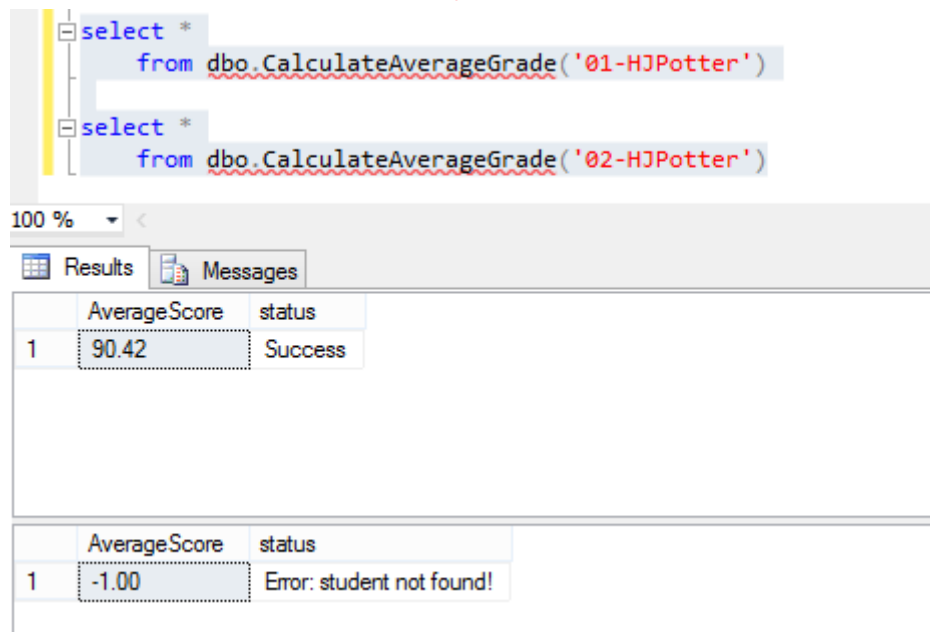


100 % <

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	3	85.64
8	8	03-HJGranger	6	NULL

Check in the cases when the StudentId exist/not exist



```
select *  
from dbo.CalculateAverageGrade('01-HJPotter')  
  
select *  
from dbo.CalculateAverageGrade('02-HJPotter')
```

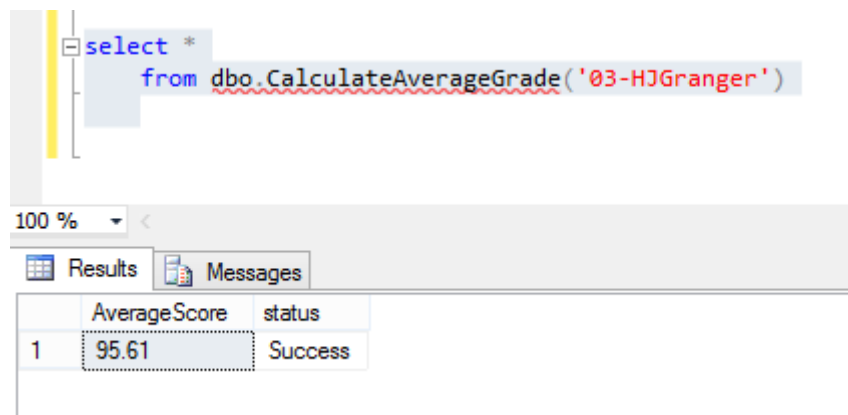
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Results Messages

	AverageScore	status
1	90.42	Success

	AverageScore	status
1	-1.00	Error: student not found!

Check when a student's score is NULL



```
select *  
from dbo.CalculateAverageGrade('03-HJGranger')
```

100 % <

Results Messages

	AverageScore	status
1	95.61	Success