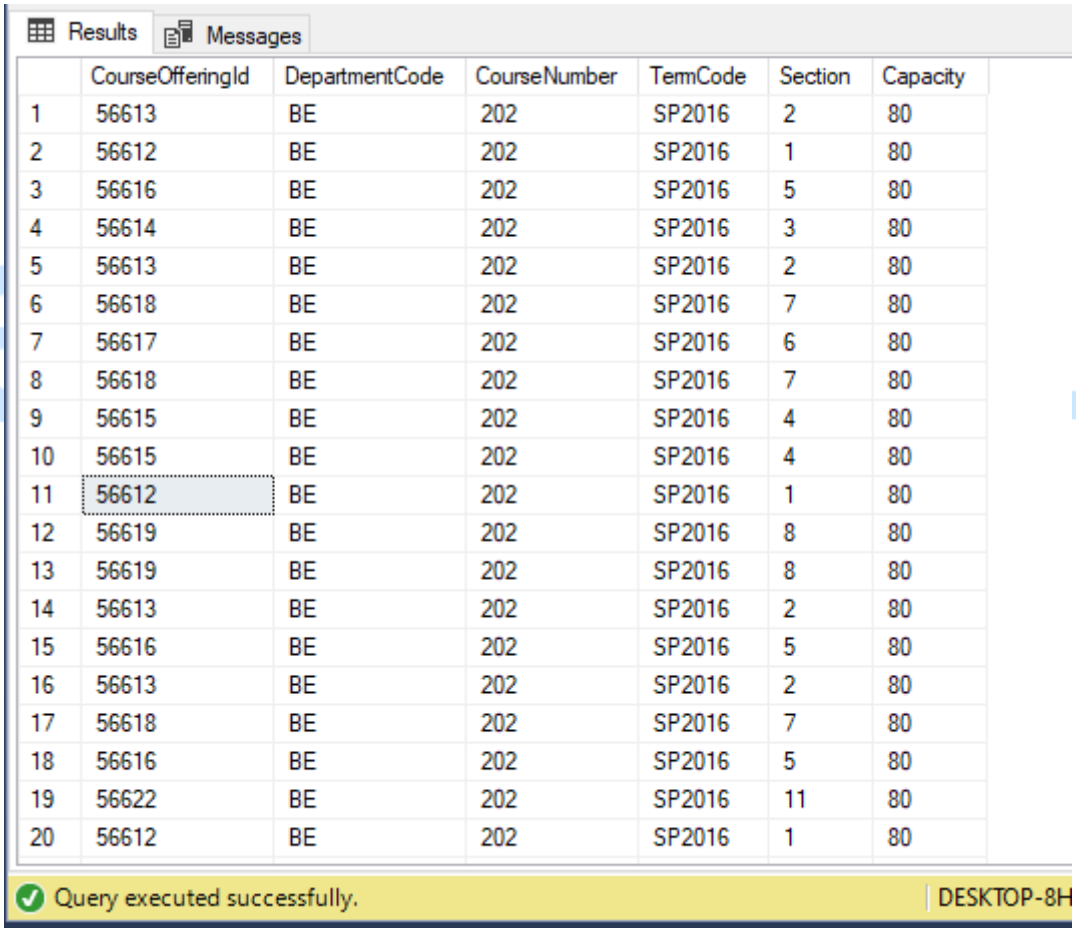
Day 29

DIY

Optimize the Cost of SQL Queries and Improve Database Performance

Task 1: Perform Left Join on CourseOfferings and CourseEnrollments to find the **TermCode = 'SP2016'** which will display the following Output
Note: Please refer to the database named "Students.bak".



Results | Messages

	CourseOfferingId	DepartmentCode	CourseNumber	TermCode	Section	Capacity
1	56613	BE	202	SP2016	2	80
2	56612	BE	202	SP2016	1	80
3	56616	BE	202	SP2016	5	80
4	56614	BE	202	SP2016	3	80
5	56613	BE	202	SP2016	2	80
6	56618	BE	202	SP2016	7	80
7	56617	BE	202	SP2016	6	80
8	56618	BE	202	SP2016	7	80
9	56615	BE	202	SP2016	4	80
10	56615	BE	202	SP2016	4	80
11	56612	BE	202	SP2016	1	80
12	56619	BE	202	SP2016	8	80
13	56619	BE	202	SP2016	8	80
14	56613	BE	202	SP2016	2	80
15	56616	BE	202	SP2016	5	80
16	56613	BE	202	SP2016	2	80
17	56618	BE	202	SP2016	7	80
18	56616	BE	202	SP2016	5	80
19	56622	BE	202	SP2016	11	80
20	56612	BE	202	SP2016	1	80

Query executed successfully. DESKTOP-8H

Task 2: Re-Run the above command with

```
SET STATISTICS IO ON
SET STATISTICS TIME ON
```

Navigate to the **Messages** tab and Note Down the **logical reads** of **CourseEnrollments** and **CourseOfferings** Table. *(These data will be used in the last task for comparison)*

Task 3: Click on Display Estimated Execution Plan and note down the various metrics

like **Estimated I/O Cost, Estimated Operator Cost, and Estimated CPU Cost** of **Clustered Index Scan.** Also Note down the **Estimated Subtree Cost** of **Select** Query.

Task 4: From Execution Plan tab, find the missing Index details from Clustered Index Scan and execute the command by giving a suitable name to your Index.

Task 5: Perform Task 2 again

Task 6: Click on Display Estimated Execution Plan and note down the various metrics like **Estimated I/O Cost, Estimated Operator Cost, and Estimated CPU Cost** of **Index Seek.** Also Note down the **Estimated Subtree Cost** of **Select** Query.

Task 7: Compare the various metrics which was noted earlier before Enabling Index and after Enabling Index.

You should notice that the Estimated Subtree Cost of **Select** Query has been optimized.