

# AssignmentDFSD2501

## EntityFrameWork

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MID:M1082972

SourceCode:

<https://github.com/BKarthik1/BKarthik1.git>

### Question

#### Student Management System

##### Problem Statements:

Application should automate the Student information management.

In the given college, there are multiple departments. Each department has attributes like Department ID and Department name. The entire learning is divided into semesters. There can be multiple courses that belongs to a given department and the given semester. Each course will be identified by Course ID and Course name.

Application should manage data of Both Staff and Student those belongs to the college. Staff has attributes like StaffID, Name, Designation, Date Of Joining and department he belongs to. Student will have StudentID, Name, Date Of Birth, Address.

Application should manage data of Department, Semester, course, staff and students. Application should manage scores of the student he/she scored in different courses.

##### Identifying Modules/components:

##### Layers:

1. User Interface layer
  - a. Web Client App
    - i. Asp.NET Core
2. Business layer
  - a. Class library
3. Data layer (Class Library)
  - a. ADO.NET application
4. Data base
  - a. SQL server

## Database Schema

The Details of Entities are as follows:

**Student:**

<u>ST_ID</u>	ST_FNAME	ST_LNAME	DOB	JOIN_DATE	HOUSE_NAME	STREET_NAME	CITY	ZIPCODE	STAFF_INCHARGE_ID
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**STAFFS**

<u>STAFF_ID</u>	SF_FIRSTNAME	SF_LASTNAME	DESIGNATION	STAFF_DOB	STAFF_DEPT_ID	STAFF_DOJ	STAFF_EXPERIENCE
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**COURSE\_DETAILS**

<u>COURSE_ID</u>	COURSE_NAME	SEM_ID	DEPT_ID	COURSE_TYPE
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**DEPARTMENT**

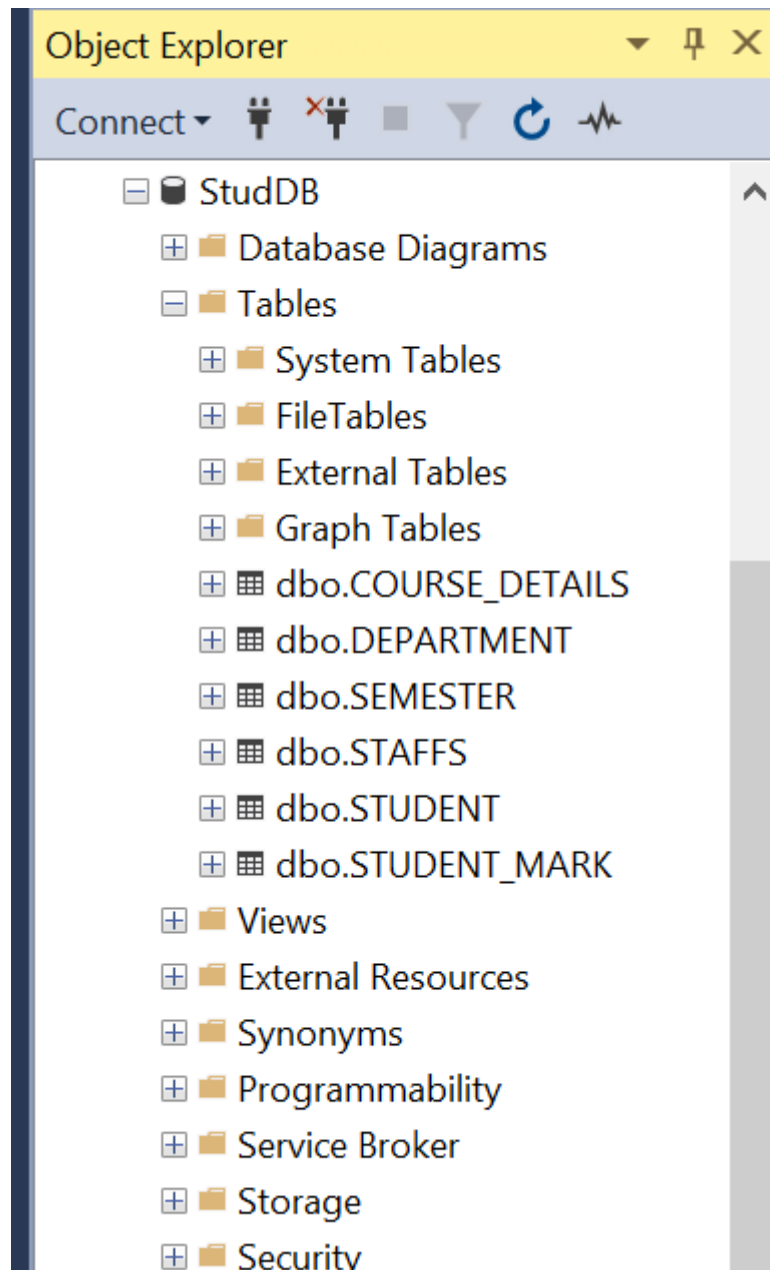
<u>DEPT_ID</u>	DEPT_NAME
----------------	-----------

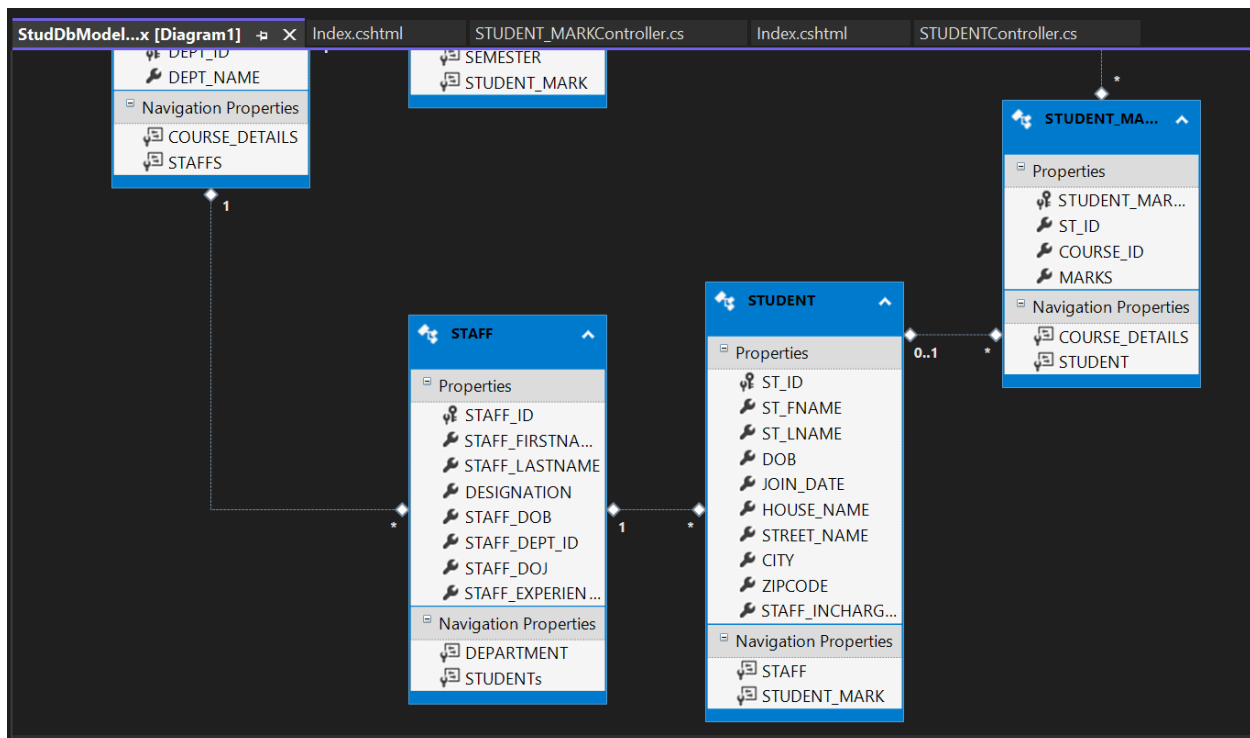
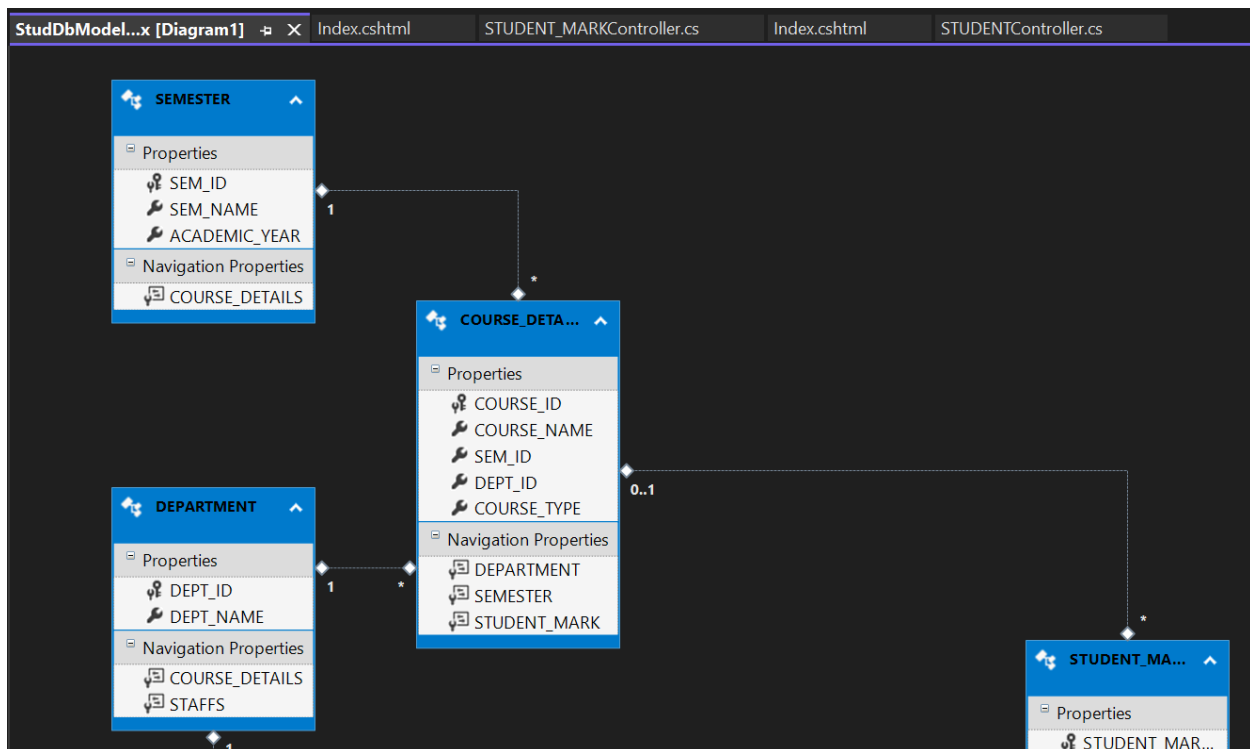
**SEMESTER**

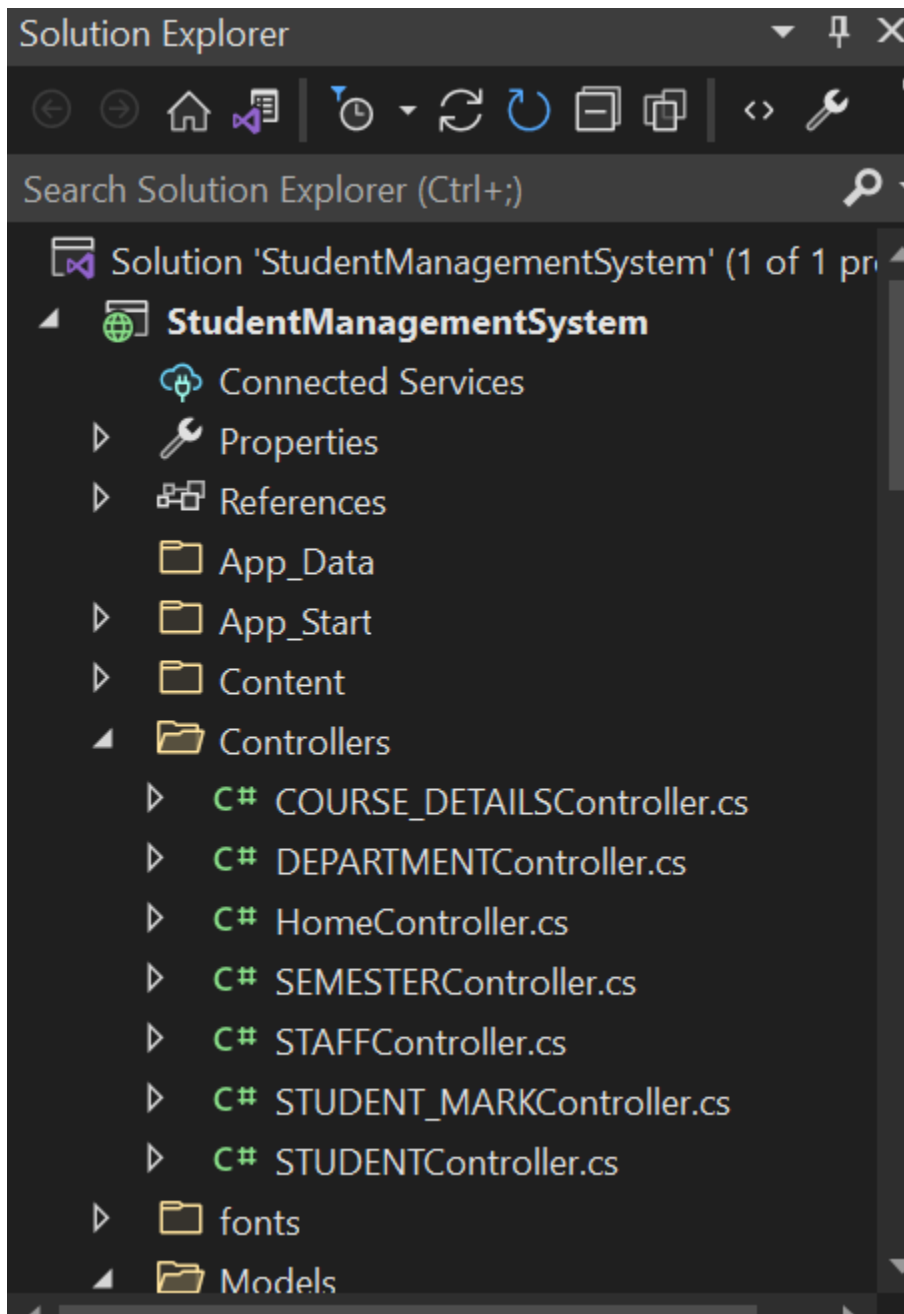
<u>SEM_ID</u>	SEM_NAME	ACADEMIC YEAR
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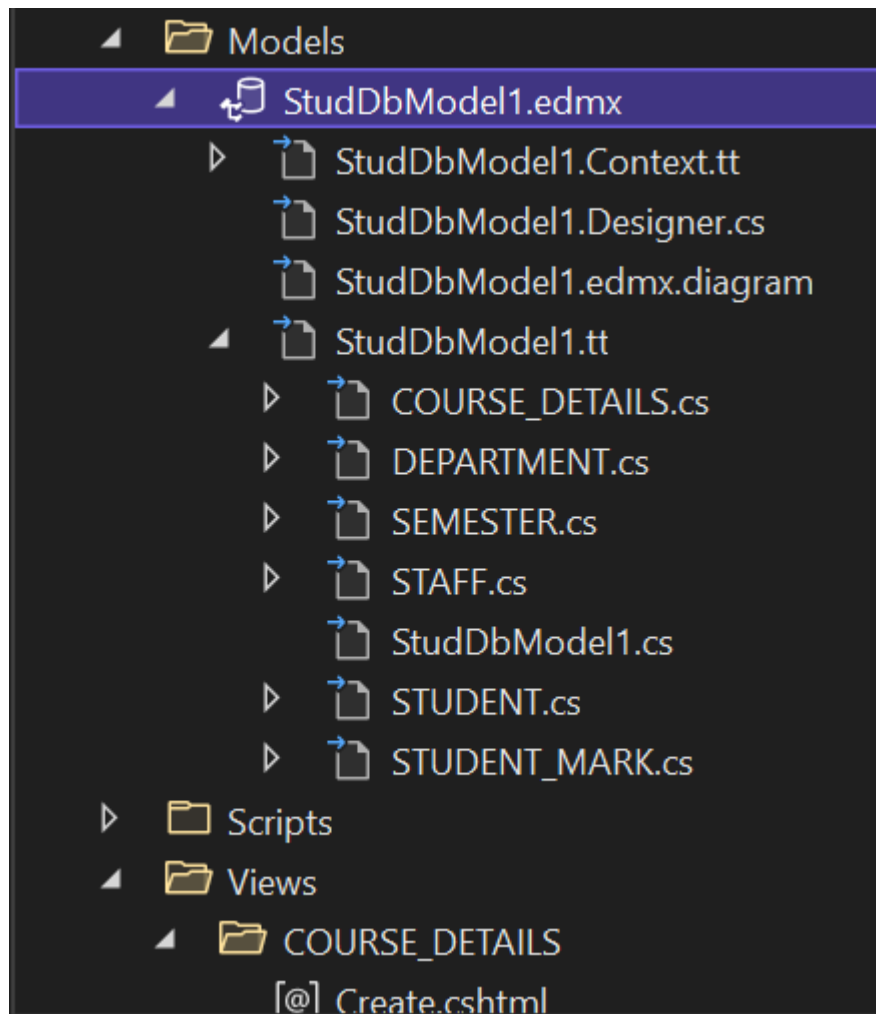
**STUDENTS\_MARKS**






<u>STUDENT_MARKS_ID</u>	<u>ST_ID</u>	<u>COURSE_ID</u>	Marks					
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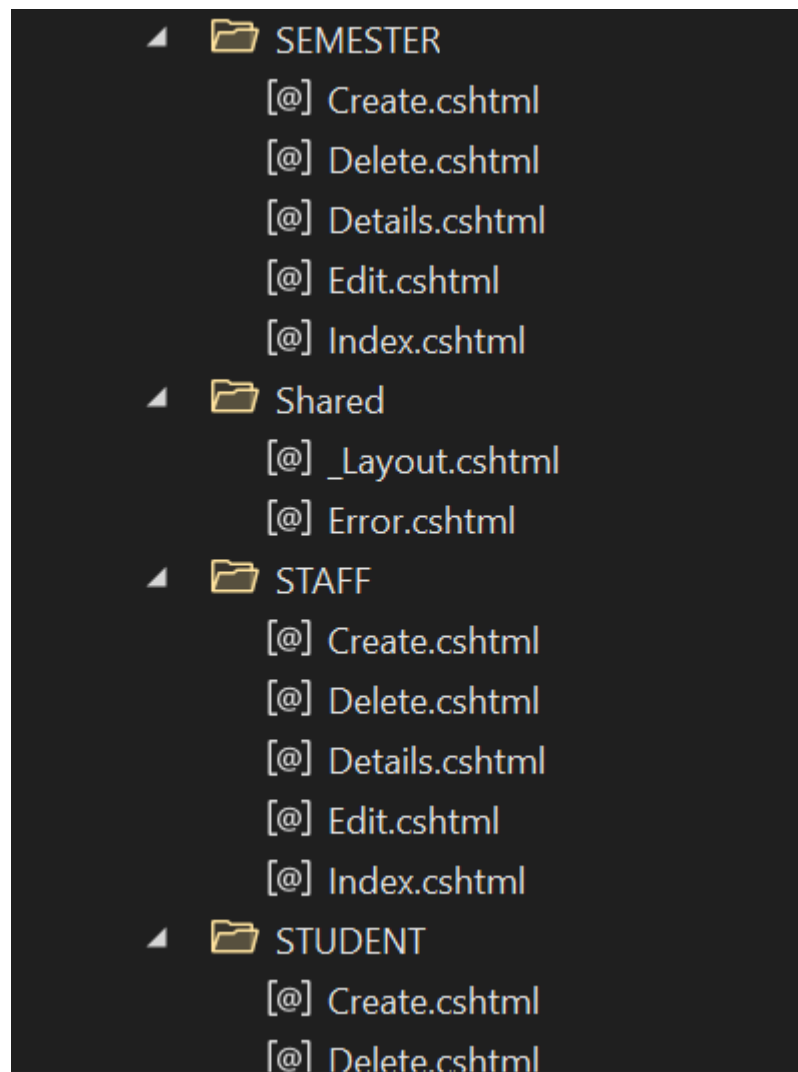








- ▲  Views
  - ▲  COURSE\_DETAILS
    - [@] Create.cshtml
    - [@] Delete.cshtml
    - [@] Details.cshtml
    - [@] Edit.cshtml
    - [@] Index.cshtml
  - ▲  DEPARTMENT
    - [@] Create.cshtml
    - [@] Delete.cshtml
    - [@] Details.cshtml
    - [@] Edit.cshtml
    - [@] Index.cshtml
  - ▶  Home
  - ▲  SEMESTER
    - [@] Create.cshtml



## index

[Create New](#)

ST_FNAME	ST_LNAME	DOB	JOIN_DATE	HOUSE_NAME	STREET_NAME	CITY	ZIPCODE	DEPT_NAME	SF_FNAME	
										<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Bhavana	P	7/14/2000 12:00:00 AM	6/3/2010 12:00:00 AM	Brudavana	BasweshwarNagar	kollegal	571440	mathematics	Lakshmi	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Nayana	U	5/1/2001 12:00:00 AM	6/3/2010 12:00:00 AM	Tirumala	Rajkumar Road	Tumkur	560001	Physics	Kushi	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>



Windows taskbar and browser tabs are visible at the top. The browser address bar shows 'localhost:50468/STAFF'. The application navigation bar includes links: Application name, Home, STUDENT, STAFF, COURSE, DEPARTMENT, SEMESTER, and STUDENT\_MARKS.

## Index

[Create New](#)

SF_FNAME	SF_LNAME	DESIGNATION	STAFF_DOB	STAFF_DOJ	STAFF_EXPERIENCE	DEPT_NAME	
Deepali	S	HOD	12/9/1989 12:00:00 AM	1/3/2010 12:00:00 AM	10.00	mathematics	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Lakshmi	P	Teacher	11/2/1991 12:00:00 AM	3/2/2012 12:00:00 AM	6.00	ComputerScience	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Kushi	kumar	Teacher	12/9/1989 12:00:00 AM	3/2/2012 12:00:00 AM	3.00	mathematics	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>

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Browser tabs and address bar show 'localhost:50468/COURSE'. The application navigation bar highlights the 'COURSE' link.

## Index

[Create New](#)

COURSE_NAME	COURSE_TYPE	DEPT_NAME	SEM_NAME	
mathematics	regular	mathematics	1st	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Java	regular	ComputerScience	2nd	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>

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Browser tabs and address bar show 'localhost:50468/DEPARTMENT'. The application navigation bar highlights the 'DEPARTMENT' link.

## Index

[Create New](#)

DEPT_NAME	
mathematics	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
Physics	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
ComputerScience	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>

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[Create New](#)

SEM_NAME	ACADEMIC_YEAR	
1st	2020	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
2nd	2020	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
3rd	2021	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
4th	2021	<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>

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## Index

[Create New](#)

MARKS	COURSE_NAME	ST_FNAME	
65	mathematics		<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>
70	Java		<a href="#">Edit</a>   <a href="#">Details</a>   <a href="#">Delete</a>

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Ready Ln 1 Col 1 Ch 1 INS

SQLQuery10.sql - ML-RefVm-283861\SQLEXPRESS01\SMS! (ML-RefVm-283861\dotnetadmin (65)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

Quick Launch (Ctrl+Q)

SQLQuery10.sql - ML-RefVm-283861\dotnetadmin (65) x SQLQuery9.sql - ML-RefVm-283861\dotnetadmin (64) x SQLQuery8.sql - ML-RefVm-283861\dotnetadmin (63) x SQLQuery7.sql - ML-RefVm-283861\dotnetadmin (62) x

```
/****** Script for SelectTopNRows command from SSMS *****/  
SELECT TOP (1000) [STUDENT_MARKS_ID]  
,[ST_ID]  
,[COURSE_ID]  
,[MARKS]  
FROM [SMS!].[dbo].[STUDENT_MARKS]
```

Object Explorer

Connect +

- ML-RefVm-283861\SQLEXPRESS01 (SQL Server 15.0.2)
  - Databases
    - System Databases
    - Database Snapshots
    - ABC
    - DbContext
    - MyDataBase
    - MyDB
    - SMS
    - SMS!
    - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.COURSE
    - dbo.DEPARTMENT
    - dbo.SEMESTERS
    - dbo.STAFFS
    - dbo.STUDENT\_MARKS
    - dbo.STUDENTS
  - Views
  - External Resources
  - Synonyms

100 %

Results Messages

	STUDENT_MARKS_ID	ST_ID	COURSE_ID	MARKS
1	1	1	201	65
2	2	1	202	70

Query executed successfully.

ML-RefVm-283861\SQLEXPRESS01\SMS! 00:00:00 2 rows

Ready Ln 1 Col 1 Ch 1 INS

SQLQuery9.sql - ML-RefVm-283861\SQLEXPRESS01\SMS! (ML-RefVm-283861\dotnetadmin (64)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

Quick Launch (Ctrl+Q)

SQLQuery9.sql - ML-RefVm-283861\dotnetadmin (64) x SQLQuery8.sql - ML-RefVm-283861\dotnetadmin (63) x SQLQuery7.sql - ML-RefVm-283861\dotnetadmin (62) x SQLQuery6.sql - ML-RefVm-283861\dotnetadmin (61) x

```
/****** Script for SelectTopNRows command from SSMS *****/  
SELECT TOP (1000) [STAFF_ID]  
,[SF_FNAME]  
,[SF_LNAME]  
,[DESIGNATION]  
,[STAFF_DOB]  
,[STAFF_DEPT_ID]  
,[STAFF_DOJ]  
,[STAFF_EXPERIENCE]  
FROM [SMS!].[dbo].[STAFFS]
```

Object Explorer

Connect +

- ML-RefVm-283861\SQLEXPRESS01 (SQL Server 15.0.2)
  - Databases
    - System Databases
    - Database Snapshots
    - ABC
    - DbContext
    - MyDataBase
    - MyDB
    - SMS
    - SMS!
    - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.COURSE
    - dbo.DEPARTMENT
    - dbo.SEMESTERS
    - dbo.STAFFS
    - dbo.STUDENT\_MARKS
    - dbo.STUDENTS
  - Views
  - External Resources
  - Synonyms

100 %

Results Messages

	STAFF_ID	SF_FNAME	SF_LNAME	DESIGNATION	STAFF_DOB	STAFF_DEPT_ID	STAFF_DOJ	STAFF_EXPERIENCE
1	101	Deepak	S	HOJ	1909-12-09	1	2010-01-03	10.00
2	102	Lakshmi	P	Teacher	1991-11-02	4	2012-03-02	6.00
3	103	Kushi	kumar	Teacher	1909-12-09	1	2012-03-02	3.00

Query executed successfully.

ML-RefVm-283861\SQLEXPRESS01\SMS! 00:00:00 3 rows

SQLQuery11.sql - ML-RefVm-283861\SQLEXPRESS01\SMS! (ML-RefVm-283861\dotnetadmin (57)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

SQLQuery11.sql - ML-RefVm-283861\dotnetadmin (57) SQLQuery10.sql - ML-RefVm-283861\dotnetadmin (65) SQLQuery9.sql - ML-RefVm-283861\dotnetadmin (64) SQLQuery8.sql - ML-RefVm-283861\dotnetadmin (63)

Execute

Script for SelectTopNRows command from SSMS

```
SELECT TOP (1000) [ST_ID]
, [ST_FNAME]
, [ST_LNAME]
, [DOB]
, [JOIN_DATE]
, [ST_DEPT_ID]
, [HOUSE_NAME]
, [STREET_NAME]
, [CITY]
, [ZIPCODE]
, [STAFF_INCHARGE_ID]
FROM [SMS!].[dbo].[STUDENTS]
```

Results Messages

ST_ID	ST_FNAME	ST_LNAME	DOB	JOIN_DATE	ST_DEPT_ID	HOUSE_NAME	STREET_NAME	CITY	ZIPCODE	STAFF_INCHARGE_ID
1	NULL	NULL	NULL	2000-07-14	2010-06-03	1	NULL	NULL	NULL	NULL
2	Bharana	P	2001-05-01	2010-06-03	1	Brudavana	BasweshwarNagar	kodagal	571440	102
3	Nayana	U	2001-05-01	2010-06-03	3	Tirumala	Rajkumar Road	Tumkur	560001	103

Query executed successfully.

ML-RefVm-283861\SQLEXPRESS01\SMS! 00:00:00 3 rows

Object Explorer

Connect

ML-RefVm-283861\SQLEXPRESS01 (SQL Server 15.0)

- Databases
  - System Databases
  - Database Snapshots
  - ABC
  - DbContext
  - MyDataBase
  - MyDB
  - SMS
  - SMS!
  - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.COURSE
    - dbo.DEPARTMENT
    - dbo.SEMESTERS
    - dbo.STAFFS
    - dbo.STUDENT\_MARKS
    - dbo.STUDENTS
  - Views
  - External Resources
  - Synonyms

SQLQuery5.sql - ML-RefVm-283861\SQLEXPRESS01\SMS! (ML-RefVm-283861\dotnetadmin (60)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

SQLQuery5.sql - ML-RefVm-283861\dotnetadmin (60) SQLQuery4.sql - ML-RefVm-283861\dotnetadmin (61) SQLQuery3.sql - ML-RefVm-283861\dotnetadmin (62)

Execute

Script for SelectTopNRows command from SSMS

```
SELECT TOP (1000) [COURSE_ID]
, [COURSE_NAME]
, [SEM_ID]
, [DEPT_ID]
, [COURSE_TYPE]
FROM [SMS!].[dbo].[COURSE]
```

Results Messages

COURSE_ID	COURSE_NAME	SEM_ID	DEPT_ID	COURSE_TYPE	
1	201	mathematics	1	1	regular
2	202	Java	2	4	regular

Query executed successfully.

ML-RefVm-283861\SQLEXPRESS01\SMS! 00:00:00 2 rows

Object Explorer

Connect

ML-RefVm-283861\SQLEXPRESS01 (SQL Server 15.0)

- Databases
  - System Databases
  - Database Snapshots
  - ABC
  - DbContext
  - MyDataBase
  - MyDB
  - SMS
  - SMS!
  - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.COURSE
    - dbo.DEPARTMENT
    - dbo.SEMESTERS
    - dbo.STAFFS
    - dbo.STUDENT\_MARKS
    - dbo.STUDENTS
  - Views
  - External Resources
  - Synonyms

SQLQuery8.sql - ML-RefVm-283861\SQLEXPRESS01\SMS! (ML-RefVm-283861\dotnetadmin (63)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

SQLQuery8.sql - ML-RefVm-283861\dotnetadmin (63) X SQLQuery7.sql - ML-RefVm-283861\dotnetadmin (62) SQLQuery6.sql - ML-RefVm-283861\dotnetadmin (60) SQLQuery5.sql - ML-RefVm-283861\dotnetadmin (51)

```
/****** Script for SelectTopNRows command from SMS ******/
SELECT TOP (1000) [SEM_ID]
, [SEM_NAME]
, [ACADEMIC_YEAR]
FROM [SMS!].[dbo].[SEMESTERS]
```

Object Explorer

Connect ML-RefVm-283861\SQLEXPRESS01 (SQL Server 15.0.2)

- Databases
  - System Databases
  - Database Snapshots
  - ABC
  - DbContext
  - MyDataBase
  - MyDB
  - SMS
  - SMS!
  - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.COURSE
    - dbo.DEPARTMENT
    - dbo.SEMESTERS
    - dbo.STAFFS
    - dbo.STUDENT\_MARKS
    - dbo.STUDENTS
  - Views
  - External Resources
  - Synonyms

100 %

Results Messages

	SEM_ID	SEM_NAME	ACADEMIC_YEAR
1	1	1st	2020
2	2	2nd	2020
3	3	3rd	2021
4	4	4th	2021

Query executed successfully. ML-RefVm-283861\SQLEXPRESS01... SMS! 1000.000 4 rows

SQLQuery7.sql - ML-RefVm-283861\dotnetadmin (62) X SQLQuery6.sql - ML-RefVm-283861\dotnetadmin (60) SQLQuery5.sql - ML-RefVm-283861\dotnetadmin (51) SQLQuery4.sql - ML-RefVm-283861\dotnetadmin (49)

```
/****** Script for SelectTopNRows command from SMS ******/
SELECT TOP (1000) [DEPT_ID]
, [DEPT_NAME]
FROM [SMS!].[dbo].[DEPARTMENT]
```

Object Explorer

Connect ML-RefVm-283861\SQLEXPRESS01 (SQL Server 15.0.2)

- Databases
  - System Databases
  - Database Snapshots
  - ABC
  - DbContext
  - MyDataBase
  - MyDB
  - SMS
  - SMS!
  - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.COURSE
    - dbo.DEPARTMENT
    - dbo.SEMESTERS
    - dbo.STAFFS
    - dbo.STUDENT\_MARKS
    - dbo.STUDENTS
  - Views
  - External Resources
  - Synonyms

100 %

Results Messages

	DEPT_ID	DEPT_NAME
1	1	mathematics
2	3	Physics
3	4	ComputerScience

Query executed successfully. ML-RefVm-283861\SQLEXPRESS01... SMS! 1000.000 3 rows