

Assignment 3

Windows application (C#)

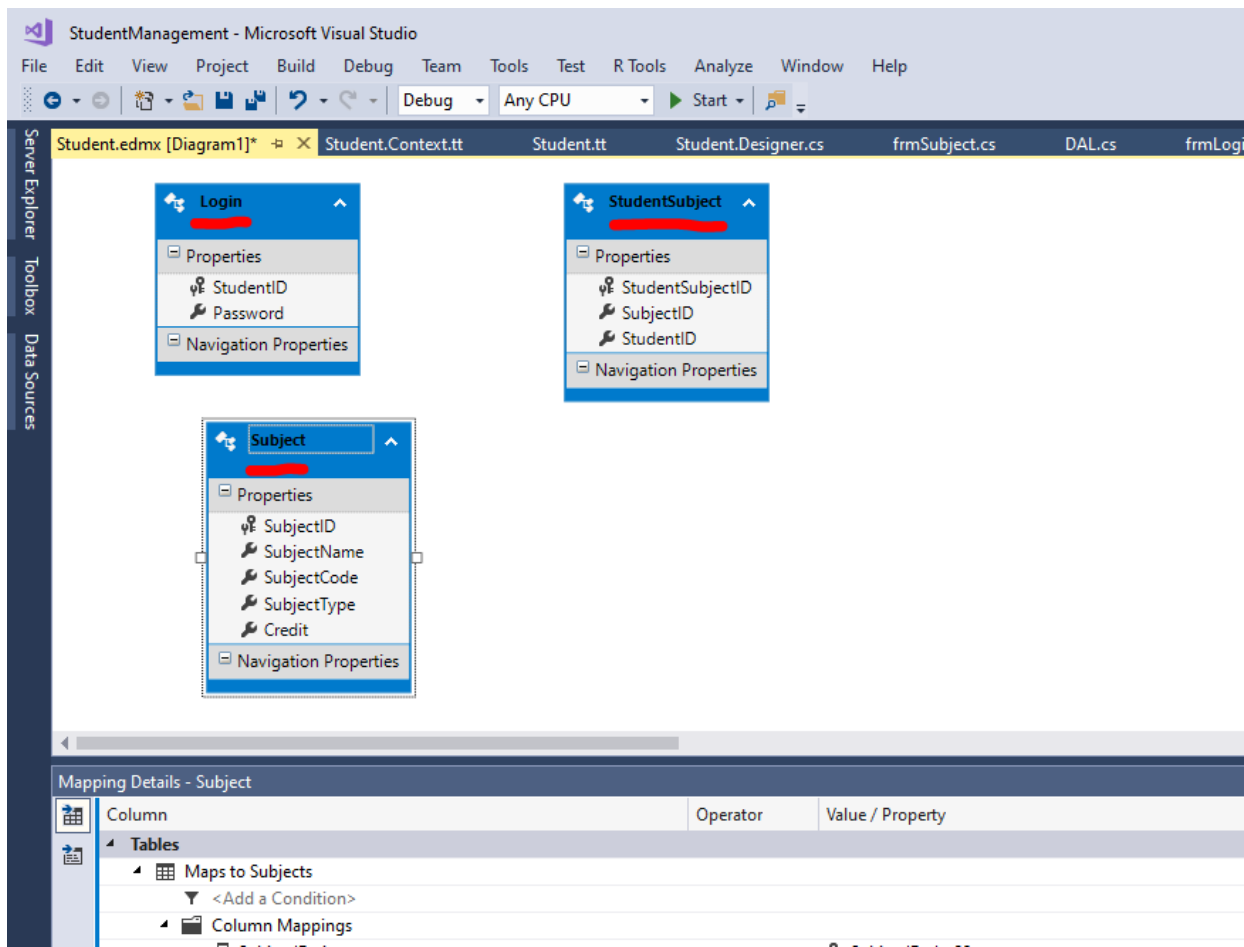
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StudentID : 700756159

I have developed a windows application, in this application, a student can login to the application and see the subjects they are enrolled in. Also, based on the available subjects they can add or remove them from the enrollment.

Technology used: C# Windows Forms, Entity Framework, SQL database.

Database Schema of application:

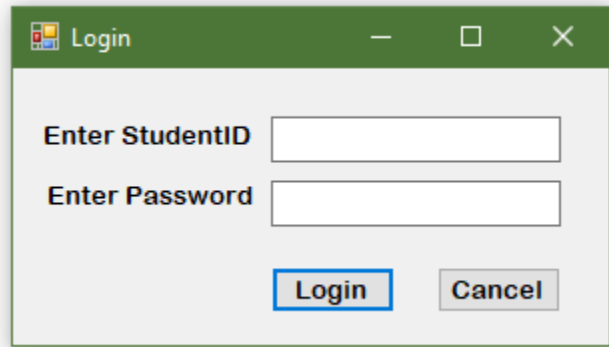


I have created three tables:

- 1) LOGIN: Based on StudentID and Password, user will be able to login to the application
- 2) SUBJECT: It has details of what all subjects are available for enrollment.
- 3) StudentSubject : It has details of what all subjects are selected for enrollment by a particular Student.

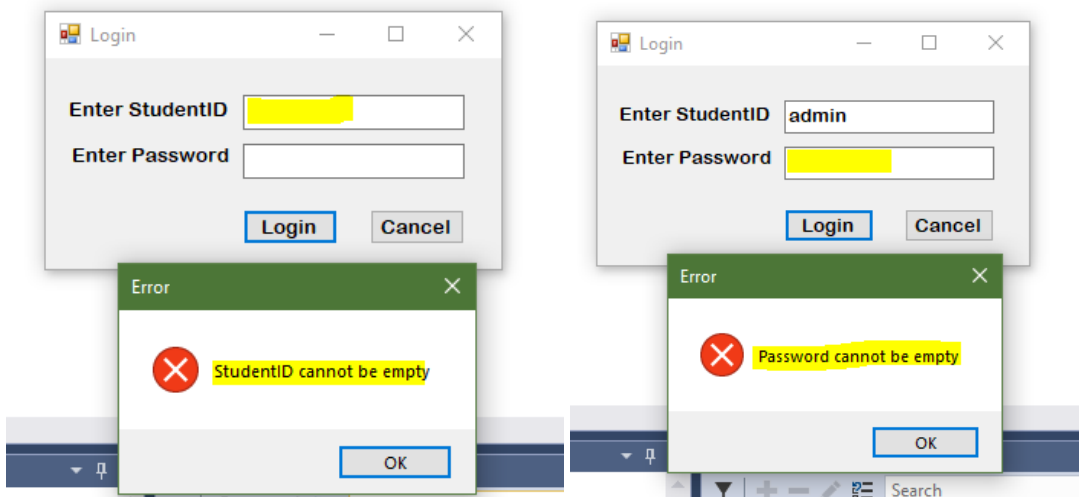
Screenshot of Application

- 1) Login Form : Student need to enter his StudentID and Password

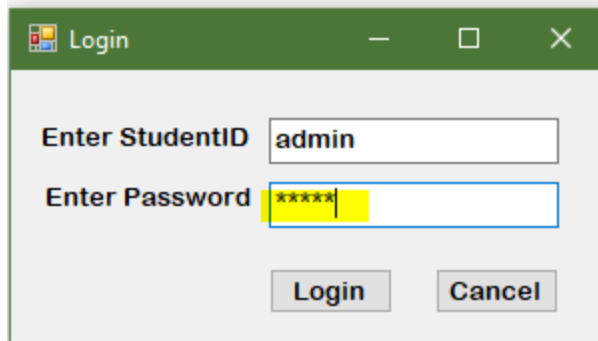


A screenshot of a Windows application window titled "Login". The window has a green title bar with standard minimize, maximize, and close buttons. Inside the window, there are two text input fields. The first field is labeled "Enter StudentID" and the second is labeled "Enter Password". Below the fields are two buttons: "Login" and "Cancel".

VALIDATIONS: Here both fields are required fields and if any of the field is missing then error popup will come to notify the user

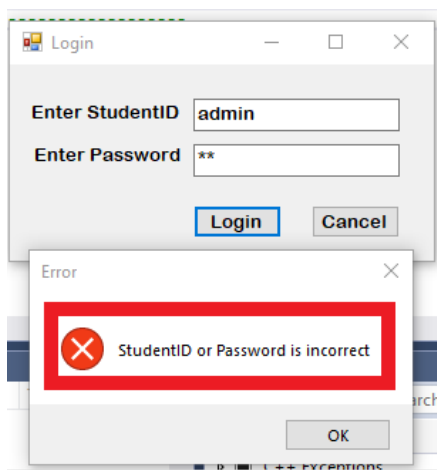


Password will appear in hidden form

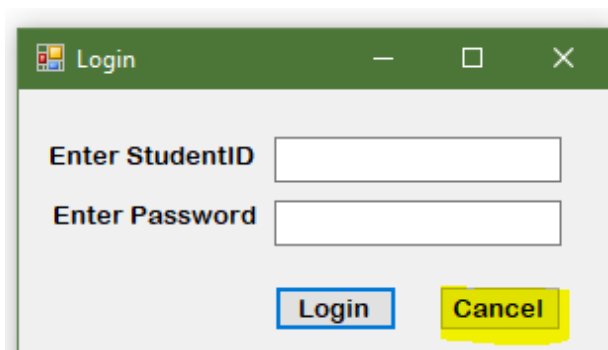


A screenshot of a Windows-style login window titled "Login". It has a green title bar with standard window controls. The window contains two text input fields: "Enter StudentID" with the text "admin" and "Enter Password" with masked text "*****". Below the fields are two buttons: "Login" and "Cancel".

If StudentID or Password is incorrect, it will throw following error



If user wants to cancel login in, then they need to click on cancel button



A screenshot of the login window with the "Login" and "Cancel" buttons highlighted with yellow rectangles. The input fields are empty.

- 2) Enrolled Subjects Form : In this form, student will be able to see the subjects he is enrolled in and in other grid, he will be able to see available subjects

Enrolled Subjects

Logout

Remove Selected

	SubjectName	SubjectCode	Credit
▶	Advance programming java	CS5003	3
	Advance programming C#	CS5001	3
	Advance Operating System	CS5004	3

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Available Subjects

Add Selected

	SubjectName	SubjectCode	SubjectType	Credit
▶	Advance programming C#	CS5001	Computer Science	3
	Complier Design	CS5002	Computer Science	3
	Advance programming java	CS5003	Computer Science	3
	Ethical Hacking	Cy5005	Cyber Security	3
	Advance Operating System	CS5004	Computer Science	3

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In highlighted section, student can see what all subjects he is enrolled in :

The screenshot shows a web application window titled "Enrolled Subjects". It features a "Logout" button in the top right corner. The main content area is divided into two sections: "Enrolled Subjects" and "Available Subjects".

Enrolled Subjects Section: This section is highlighted with a red border. It contains a table with the following data:

	SubjectName	SubjectCode	Credit
▶	Advance programming java	CS5003	3
	Advance programming C#	CS5001	3
	Advance Operating System	CS5004	3

Below the table is a horizontal scrollbar. To the right of the table is a "Remove Selected" button.

Available Subjects Section: This section contains a table with the following data:

	SubjectName	SubjectCode	Subject Type	Credit	
▶	Advance programming C#	CS5001	Computer Science	3	^
	Compiler Design	CS5002	Computer Science	3	
	Advance programming java	CS5003	Computer Science	3	
	Ethical Hacking	Cy5005	Cyber Security	3	
	Advance Operating System	CS5004	Computer Science	3	▼

Below the table is a horizontal scrollbar. To the right of the table is an "Add Selected" button.

Subjects can be removed by the selecting a row in the grid and clicking on button REMOVE SELECTED

Enrolled Subjects

Logout

Remove Selected

	SubjectName	SubjectCode	Credit
▶	Advance programming java	CS5003	3
	Advance programming C#	CS5001	3
	Advance Operating System	CS5004	3

Available Subjects

Add Selected

	SubjectName	SubjectCode	SubjectType	Credit
▶	Advance programming C#	CS5001	Computer Science	3
	Compiler Design	CS5002	Computer Science	3
	Advance programming java	CS5003	Computer Science	3
	Ethical Hacking	Cy5005	Cyber Security	3
	Advance Operating System	CS5004	Computer Science	3

After clicking on remove, immediately Grid will get updated and in Database, tables will be updated

Enrolled Subjects

Logout

Remove Selected

	SubjectName	SubjectCode	Credit
▶	Advance programming C#	CS5001	3
	Advance Operating System	CS5004	3

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Available Subjects

Add Selected

	SubjectName	SubjectCode	SubjectType	Credit
▶	Advance programming C#	CS5001	Computer Science	3
	Complier Design	CS5002	Computer Science	3
	Advance programming java	CS5003	Computer Science	3
	Ethical Hacking	Cy5005	Cyber Security	3
	Advance Operating System	CS5004	Computer Science	3

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Second Section of this form is Subjects available for enrollment. It has details what is subject name, what is its code, type and how many credits

The screenshot shows a web application window titled 'Enrolled Subjects'. It has a green header bar with standard window controls. Below the header, there is a 'Logout' button. The main content area is divided into two sections. The top section, 'Enrolled Subjects', contains a table with two rows of data. The first row is highlighted in blue. Below this table is a greyed-out area. The bottom section, 'Available Subjects', is highlighted with a red border and contains a table with five rows of data. The first row is highlighted in blue. To the right of this table is an 'Add Selected' button.

Enrolled Subjects

Logout

Remove Selected

	SubjectName	SubjectCode	Credit
▶	Advance programming C#	CS5001	3
	Advance Operating System	CS5004	3

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Available Subjects

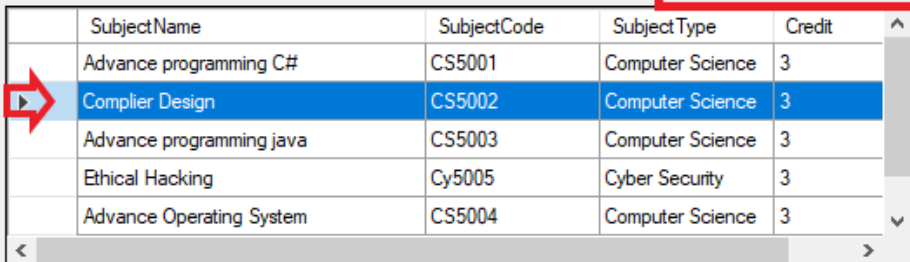
Add Selected

	SubjectName	SubjectCode	SubjectType	Credit
▶	Advance programming C#	CS5001	Computer Science	3
	Compiler Design	CS5002	Computer Science	3
	Advance programming java	CS5003	Computer Science	3
	Ethical Hacking	Cy5005	Cyber Security	3
	Advance Operating System	CS5004	Computer Science	3

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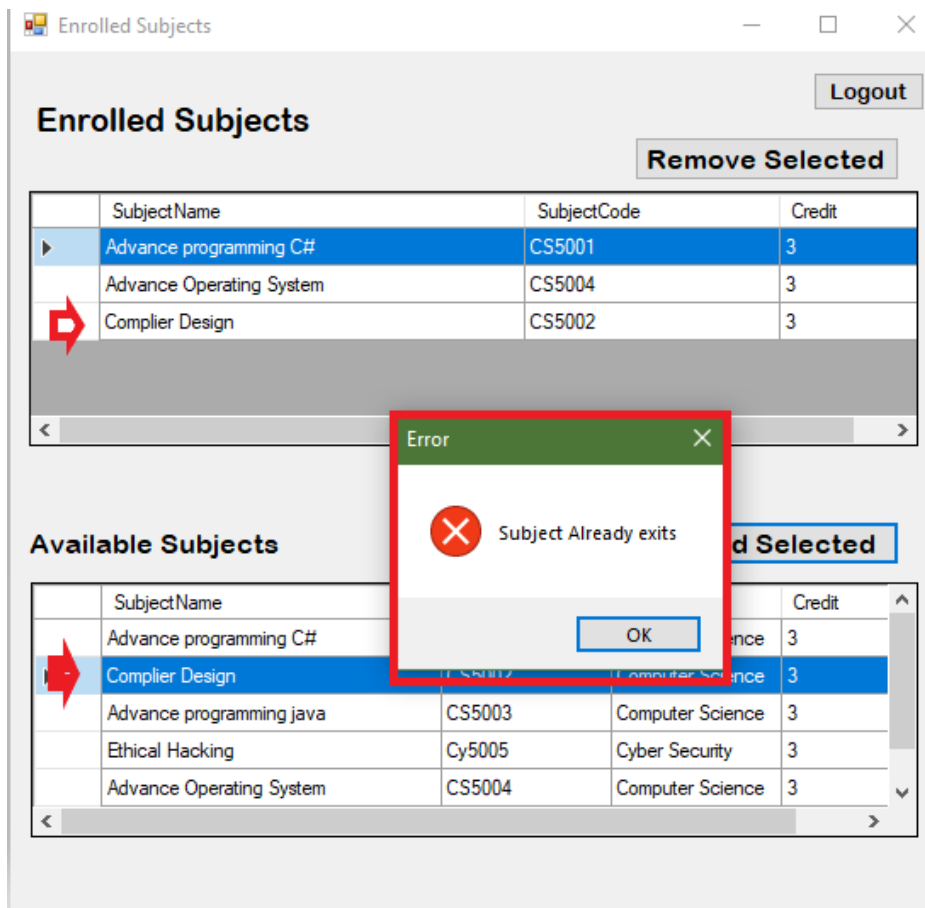
This section also have a button, ADD SELECTED .

Student can select the subject and click on the button, it will immediately added to the above grid as shown in the below screenshot



VALIDATIONS : If subject already exist in student grid then and we try to add that same subject again, it will throw an error like below :

Here I was trying to add same Compiler Design subject, however, this subject already enrolled by student so it threw error “SUBJECT ALREADY EXISTS”



LOGOUT BUTTON : After student is done with enrollment, they can logout of application and go back to login page by clicking on highlighted button

Enrolled Subjects

Logout

Remove Selected

	SubjectName	SubjectCode	Credit
▶	Advance programming C#	CS5001	3
	Advance Operating System	CS5004	3
	Complier Design	CS5002	3

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Available Subjects

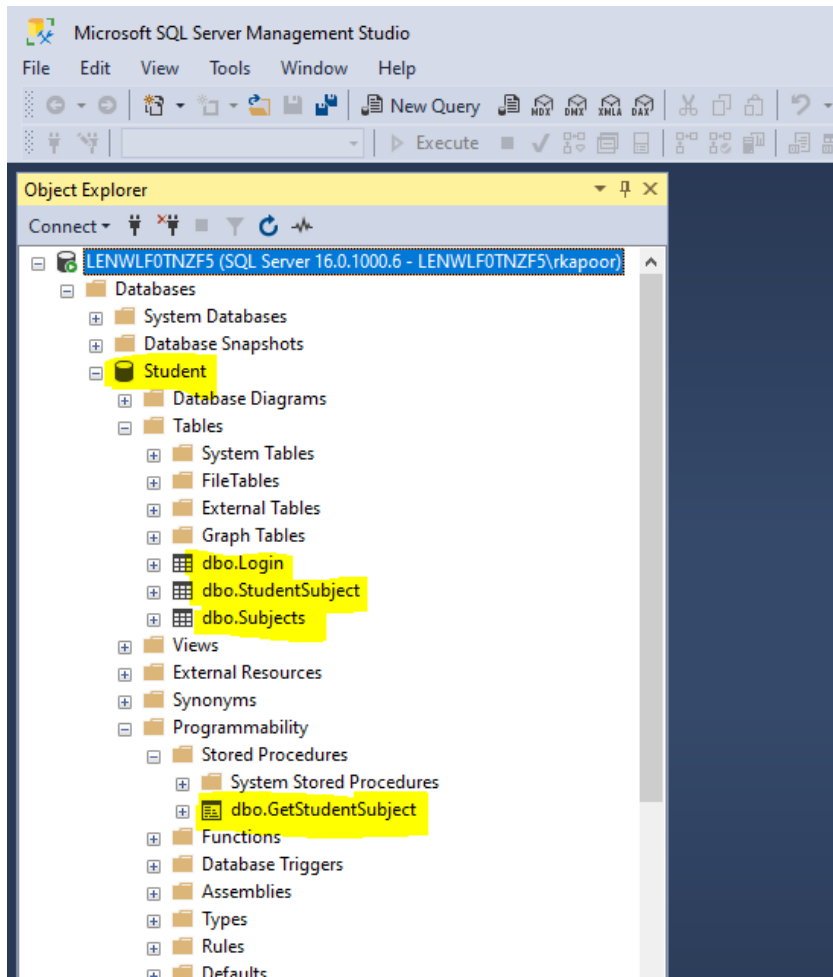
Add Selected

	SubjectName	SubjectCode	SubjectType	Credit
	Advance programming C#	CS5001	Computer Science	3
▶	Complier Design	CS5002	Computer Science	3
	Advance programming java	CS5003	Computer Science	3
	Ethical Hacking	Cy5005	Cyber Security	3
	Advance Operating System	CS5004	Computer Science	3

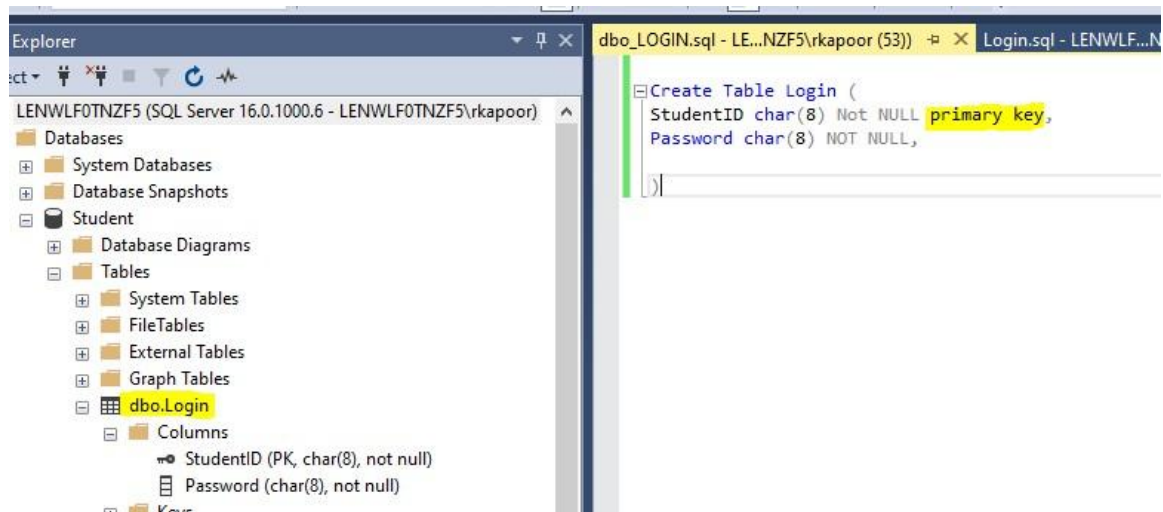
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DATABASE DETAILS :

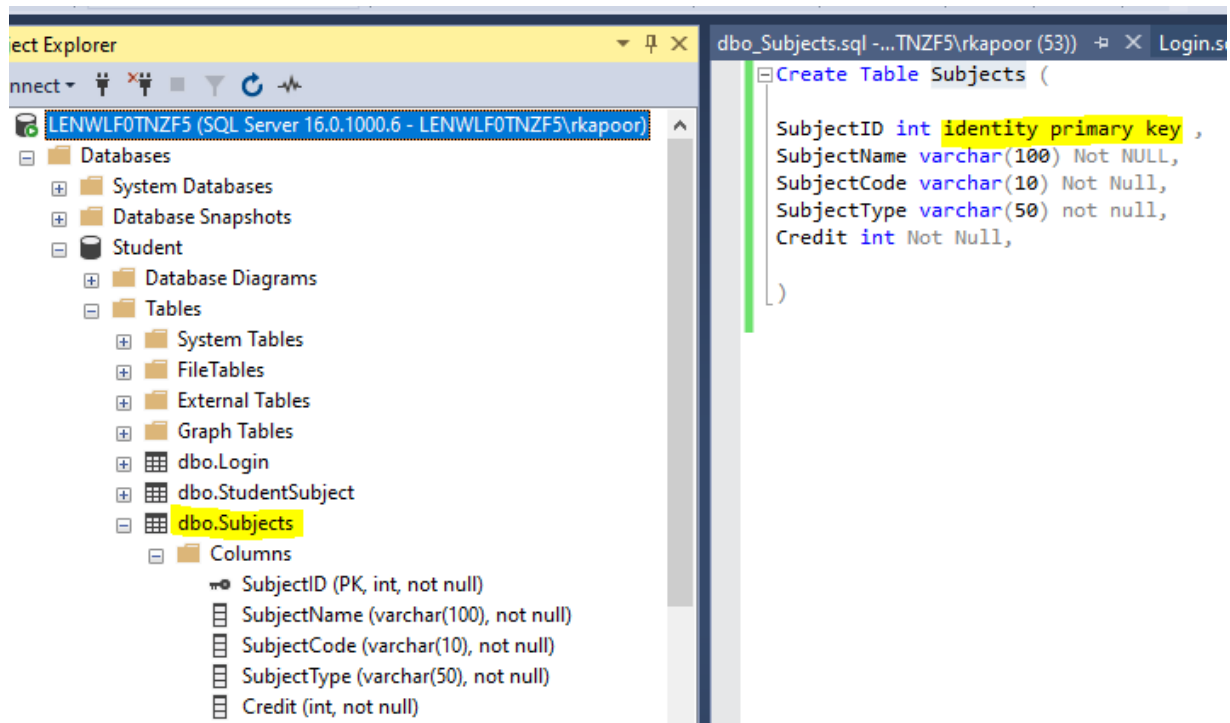
I have created a database named Student, it has three highlighted tables and one store procedure



LOGIN TABLE : It has two column, one is the StudentID, which is unique, alphanumeric and primary key

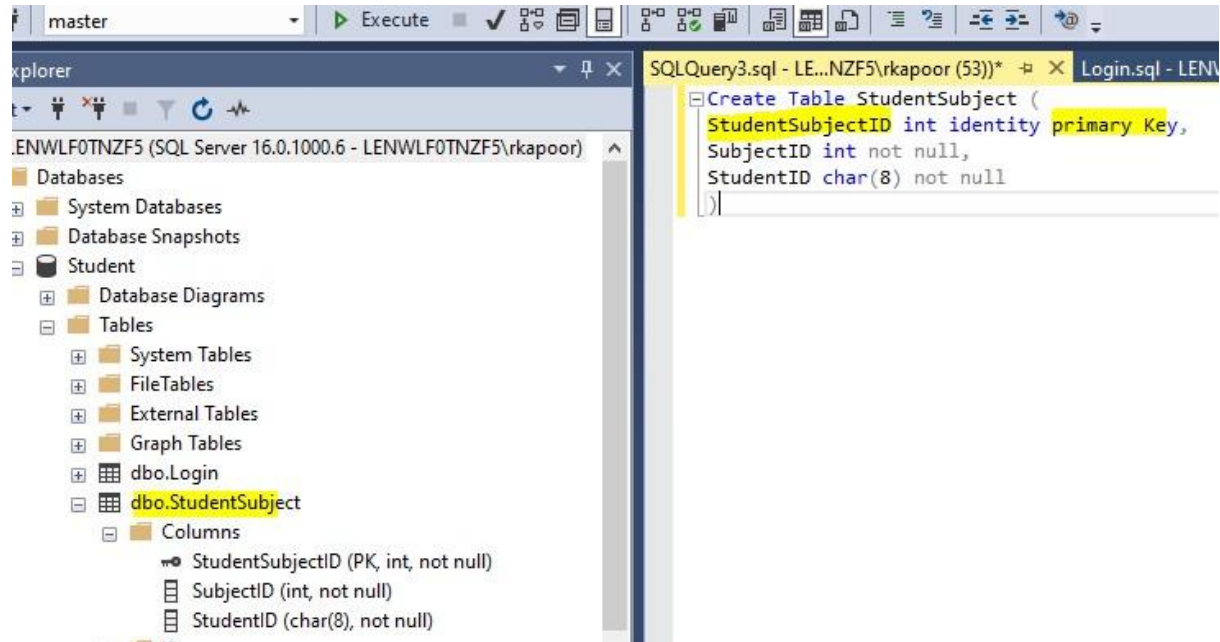


SUBJECT Table : It stores the name of subject, its code, type and credit. In this table SubjectID is auto-incremented and primary key.

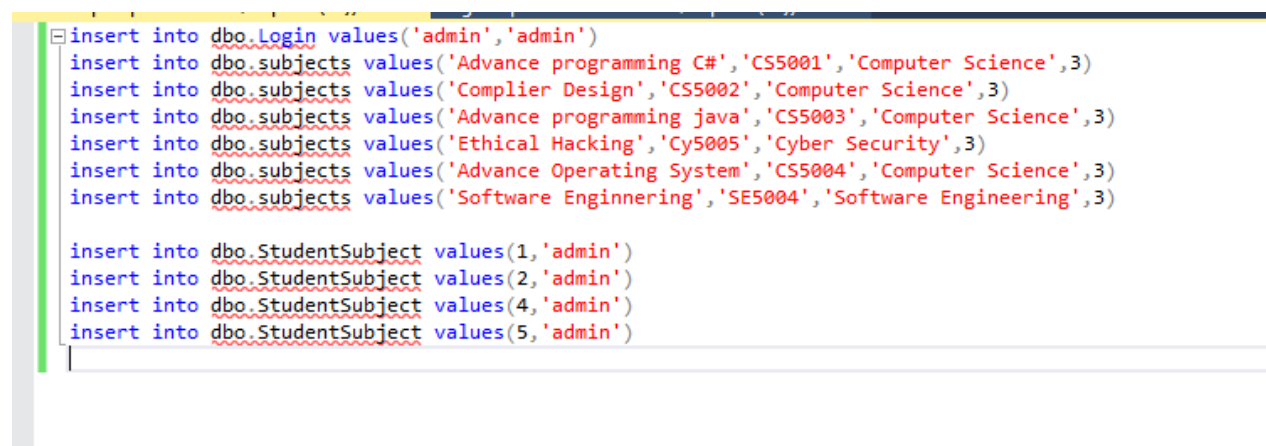


StudentSubject table :

It has mapping of students and subjects that he is enrolled in. Here StudentSubjectID is primary key and SubjectID and StudentID are foreign keys



Insert Scripts



STORE PROCEDURE : That will get all the subjects student enrolled in and fill the DataGrid control in Forms

```

USE [Student]
GO

/***** Object: StoredProcedure [dbo].[GetStudentSubject]    Script Date: 11/19/2022 4:58:40
SET ANSI_NULLS ON
GO

SET QUOTED_IDENTIFIER ON
GO

CREATE Procedure [dbo].[GetStudentSubject]
@StudentID char(8)
AS
Begin
select sub.SubjectName,s.StudentSubjectID, sub.SubjectCode, sub.SubjectType, sub.Credit
from dbo.StudentSubject s inner join
    dbo.Subjects sub on sub.subjectID = s.subjectID
    inner join Login st on st.studentID = s.studentID
where s.StudentID=@StudentID
end

```

```

select * from dbo.Login
select * from dbo.subjects
select * from dbo.StudentSubject

```

100 %

Results

Messages

	StudentID	Password
1	admin	admin

	SubjectID	SubjectName	SubjectCode	SubjectType	Credit
1	1	Advance programming C#	CS5001	Computer Science	3
2	2	Complier Design	CS5002	Computer Science	3
3	3	Advance programming java	CS5003	Computer Science	3
4	4	Ethical Hacking	Cy5005	Cyber Security	3
5	5	Advance Operating System	CS5004	Computer Science	3
6	6	Software Enginnering	SE5004	Software Engine...	3

	StudentSubjectID	SubjectID	StudentID
1	11	1	admin
2	12	5	admin
3	13	2	admin