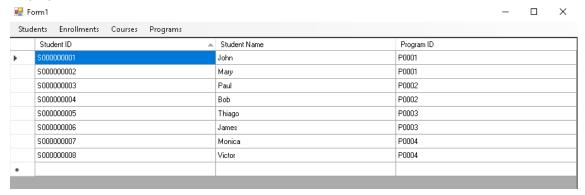
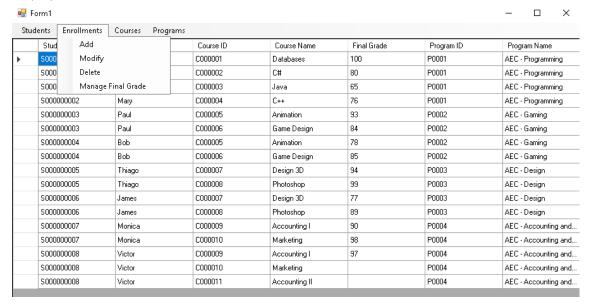
Final Project – Multi-Tier Application

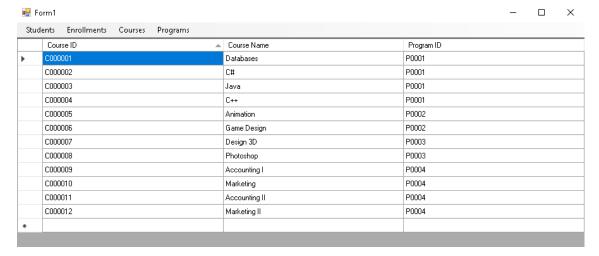
- Display Student



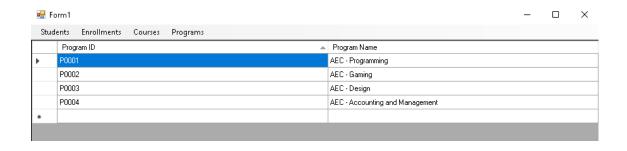
Display Enrollments



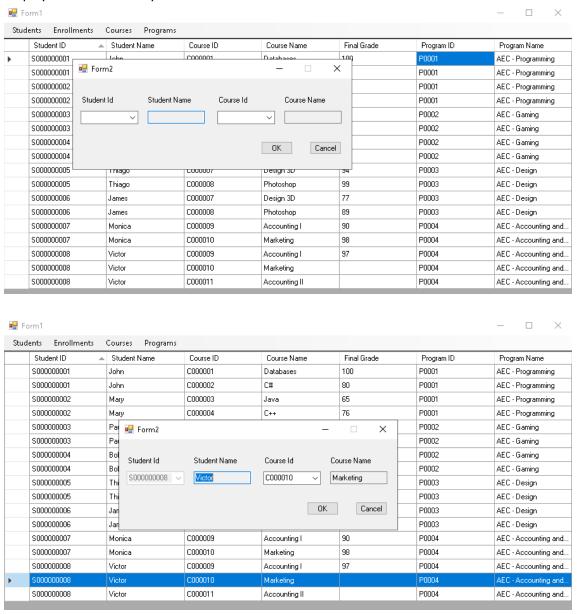
Display Courses



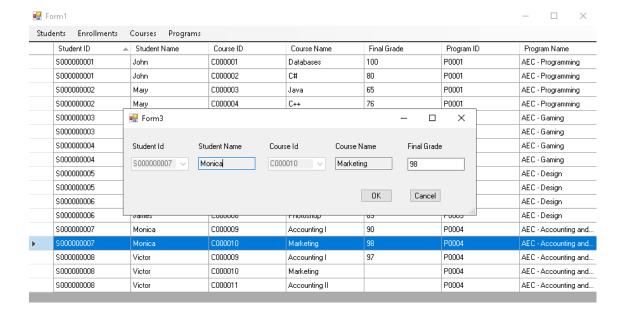
- Display Programs



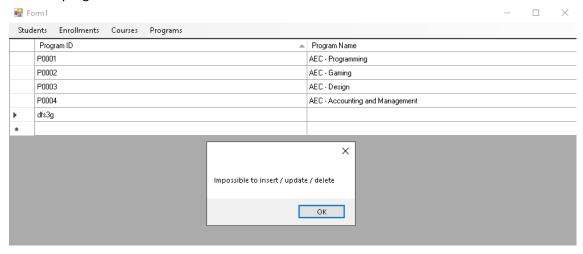
Display Form Add-Modify in Enrollment

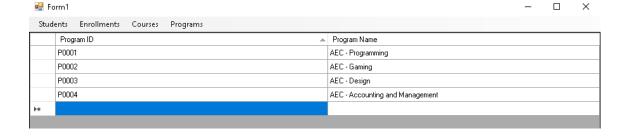


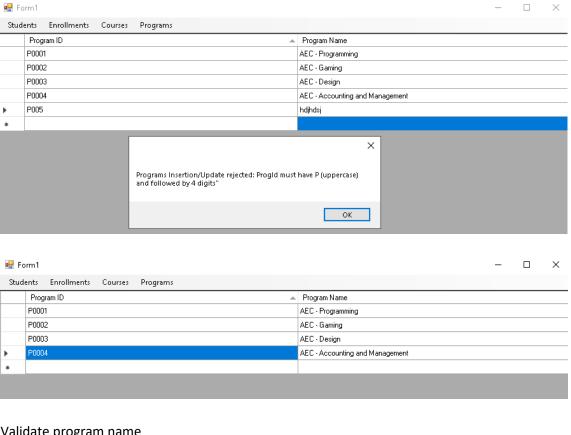
- Display form Manage Final Grade



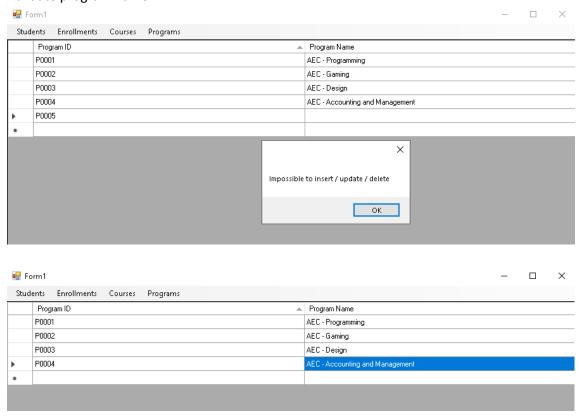
- Validate program ID



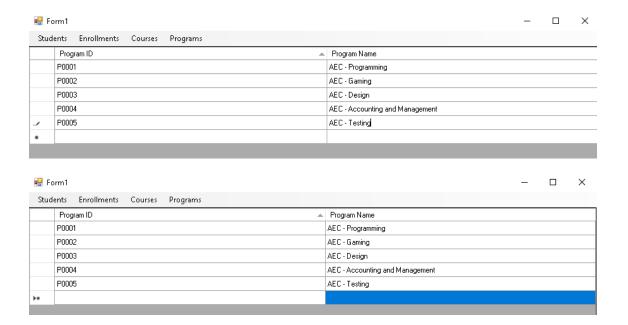


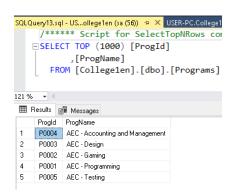


Validate program name

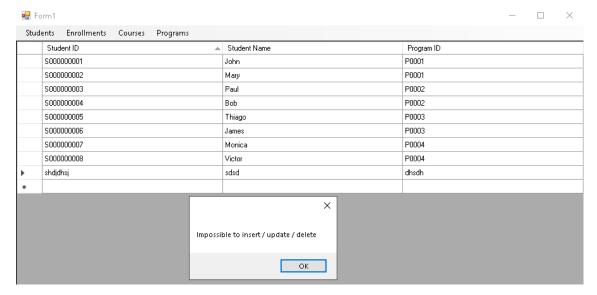


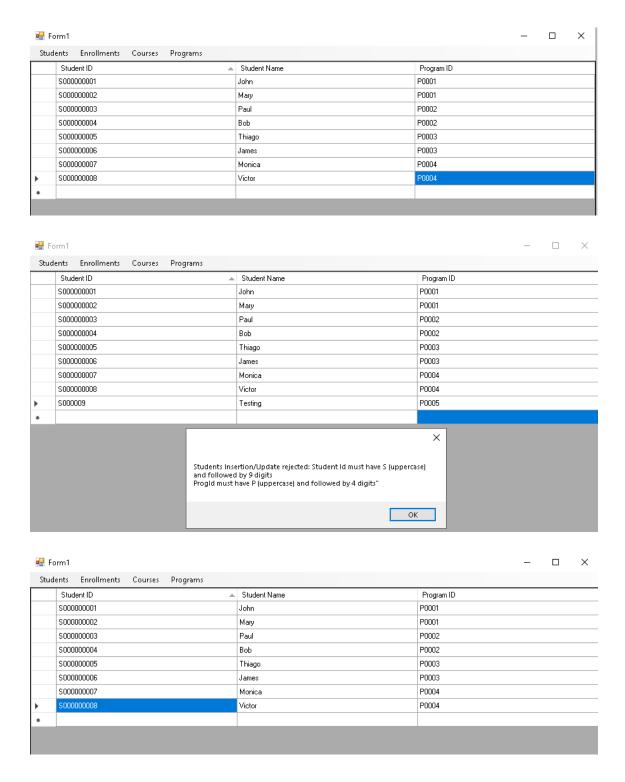
Create Program



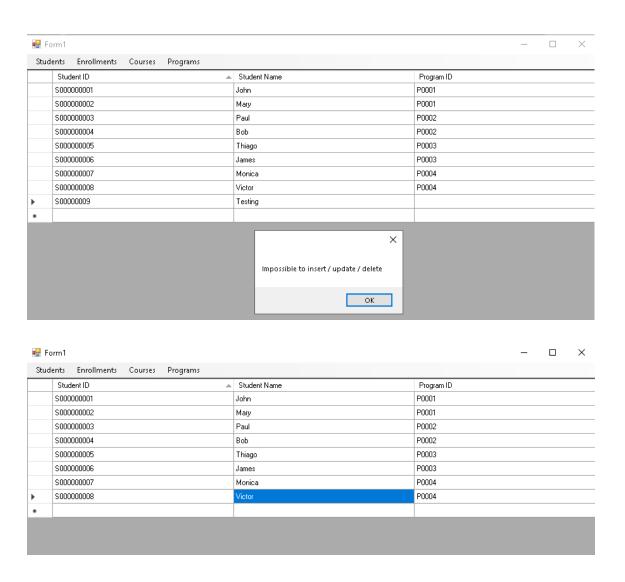


- Validate student ID

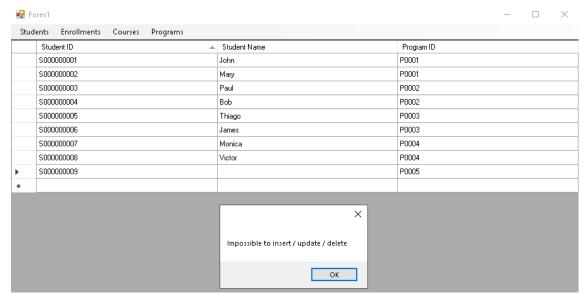


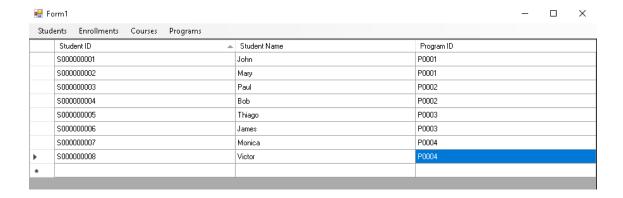


- Validate program id in students

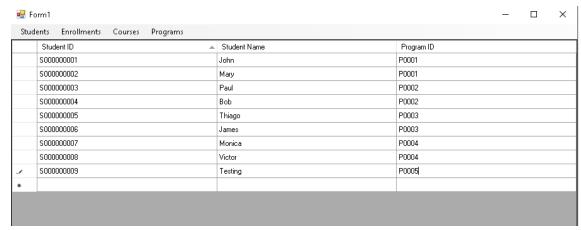


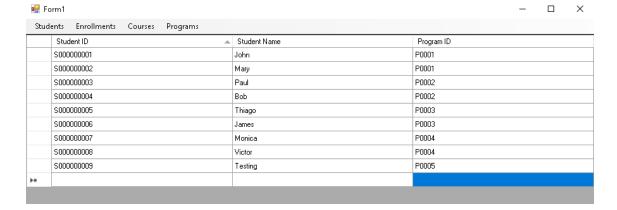
- Validate student name

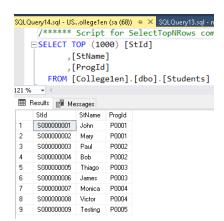




- Create Student





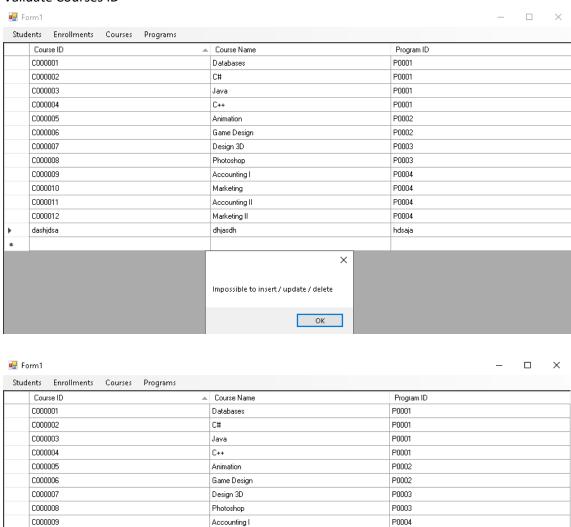


- Validate Courses ID

C000010

C000011

C000012



Marketing

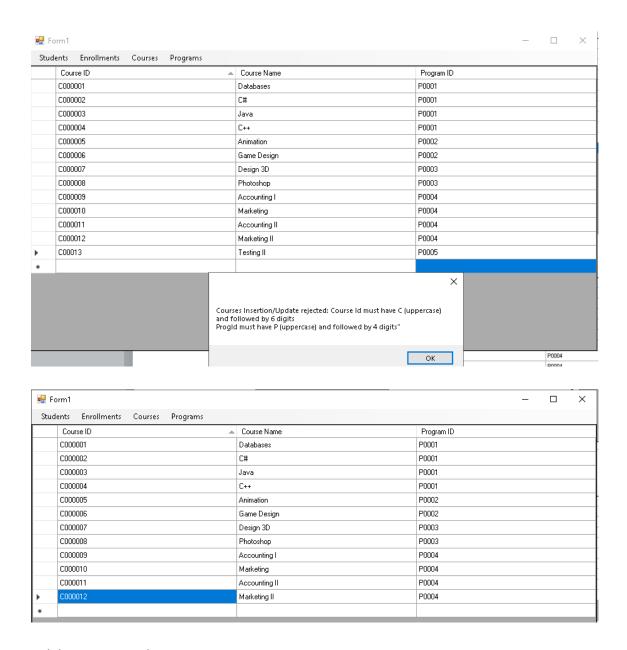
Accounting II

Marketing II

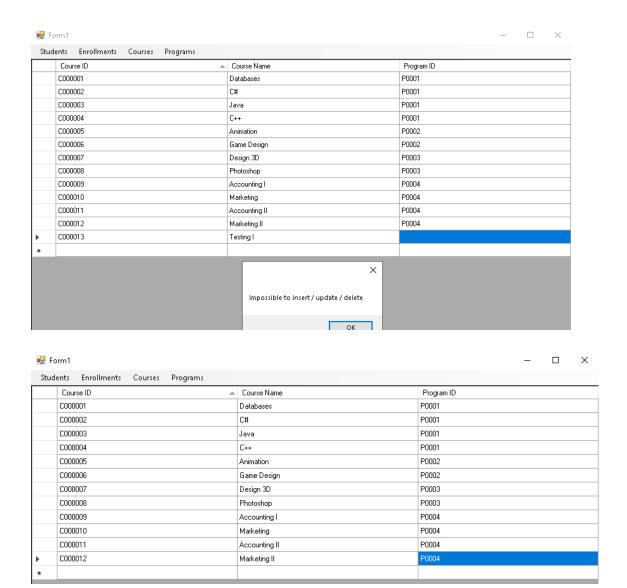
P0004

P0004

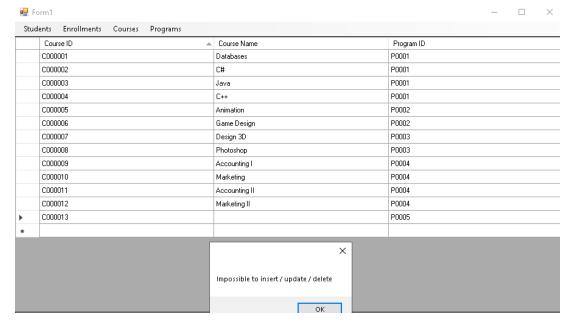
P0004

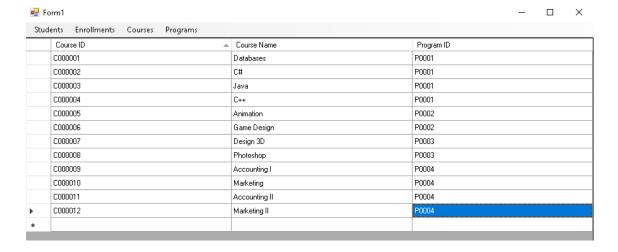


- Validate program id in Courses

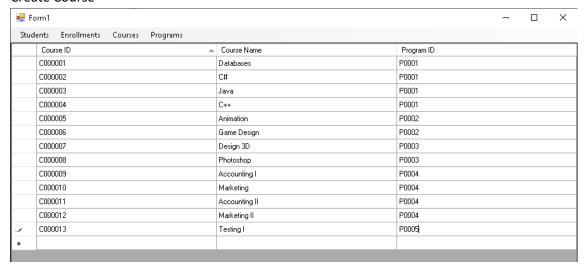


- Validate Courses name

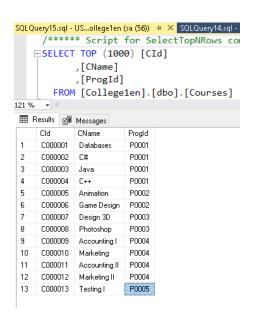




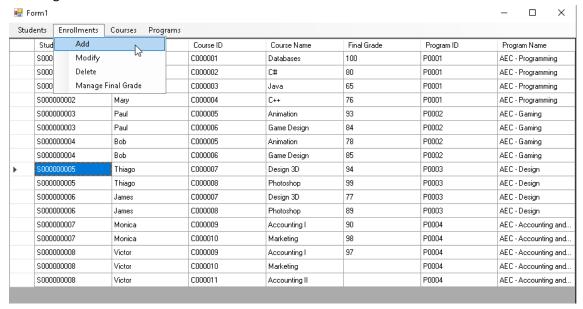
Create Course

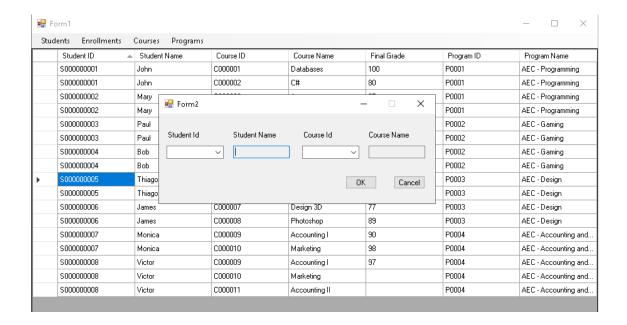


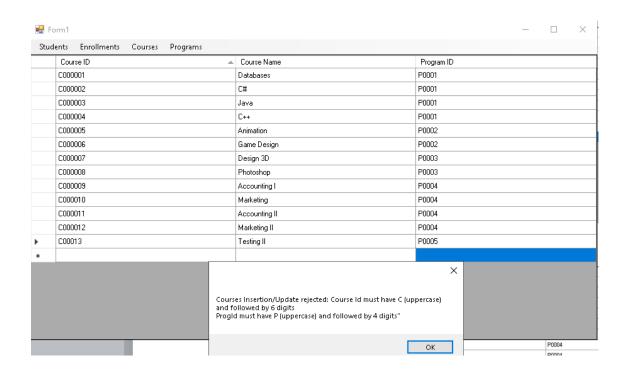
Course ID	△ Course Name	Program ID		
C000001	Databases	P0001		
C000002	C#	P0001		
C000003	Java	P0001		
C000004	C++	P0001		
C000005	Animation	P0002		
C000006	Game Design	P0002		
C000007	Design 3D	P0003		
C000008	Photoshop	P0003		
C000009	Accounting I	P0004		
C000010	Marketing	P0004		
C000011	Accounting II	P0004		
C000012	Marketing II	P0004		
C000013	Testing I	P0005		



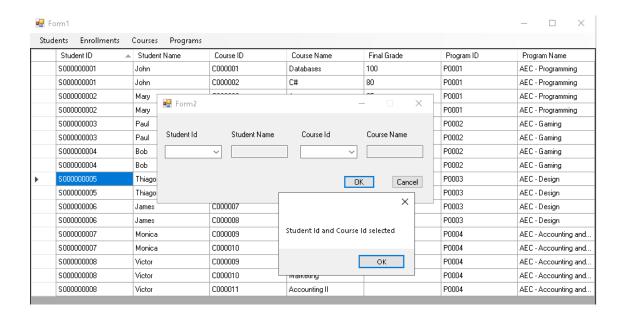
Creating enrollment



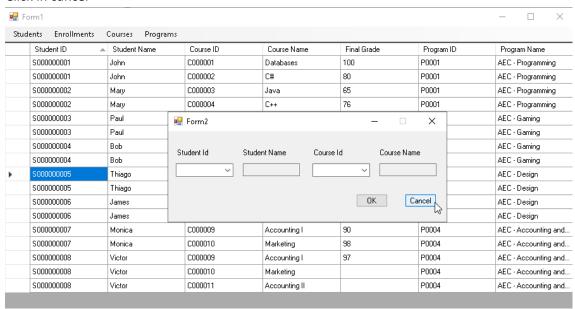


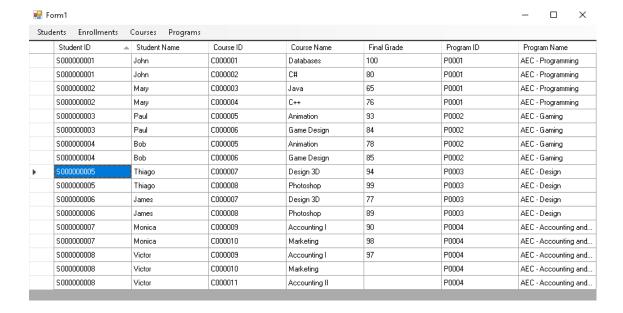


- Click ok without enter data

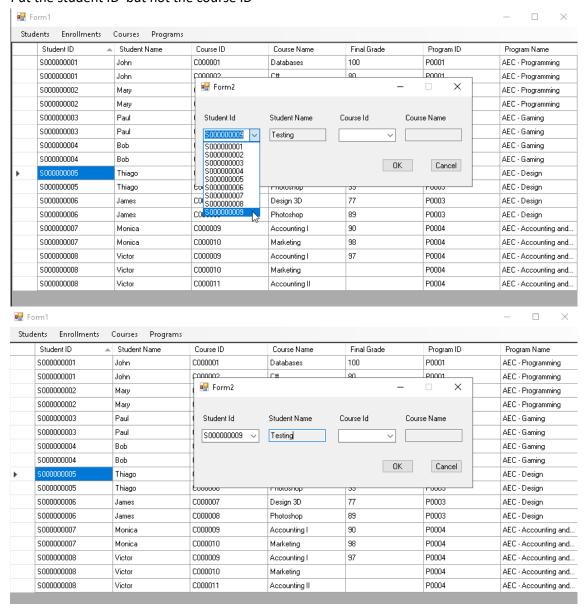


- Click in cancel

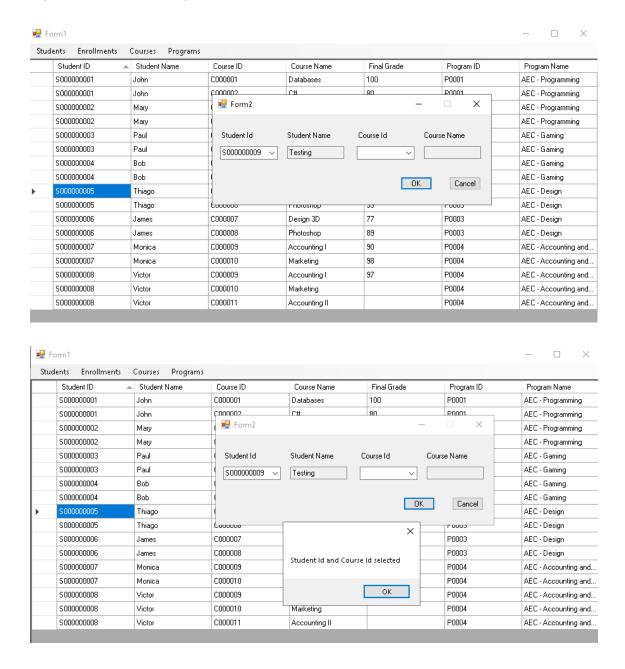




Put the student ID but not the course ID

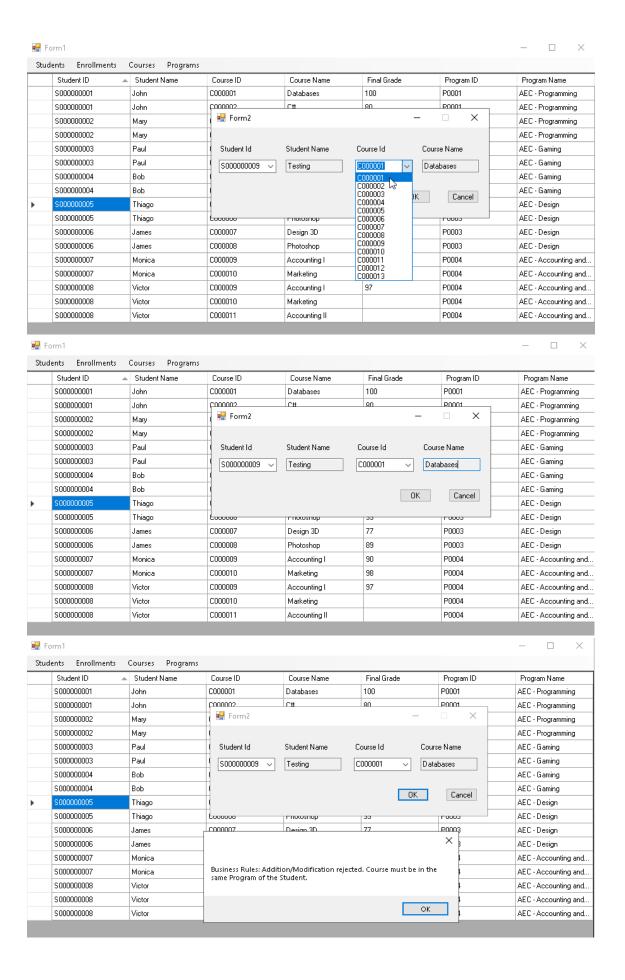


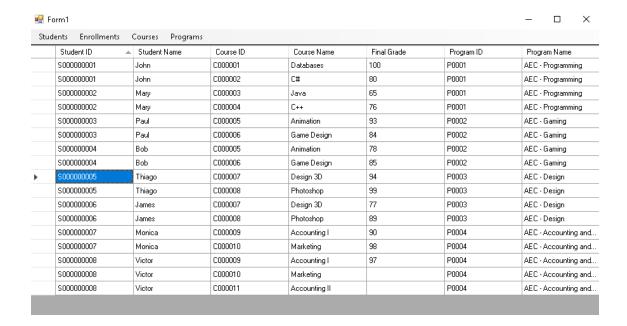
- Try to click on ok with only Student ID



CONTINUE HERE

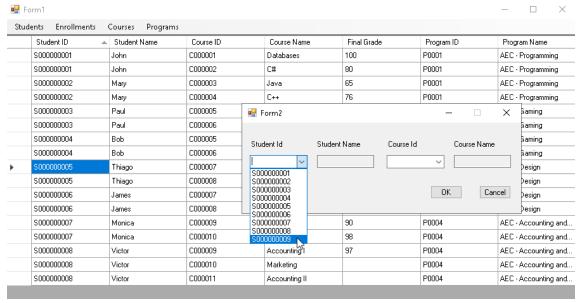
- Put a course ID that not has the same program ID then the student

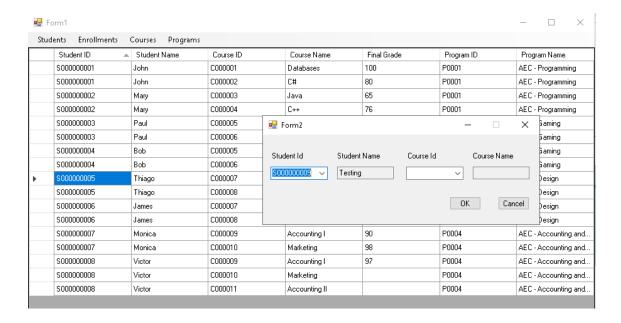


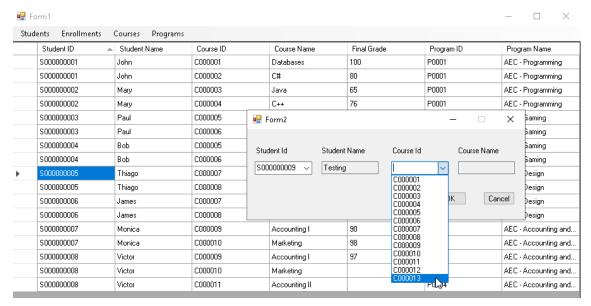


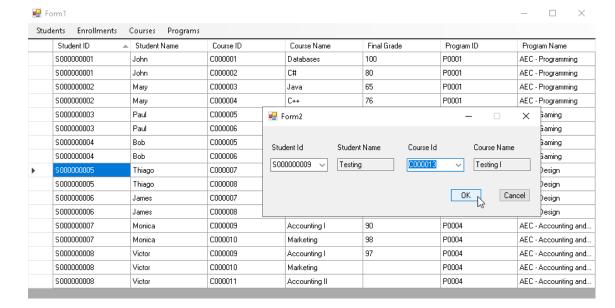
CONTINUE FROM HERE

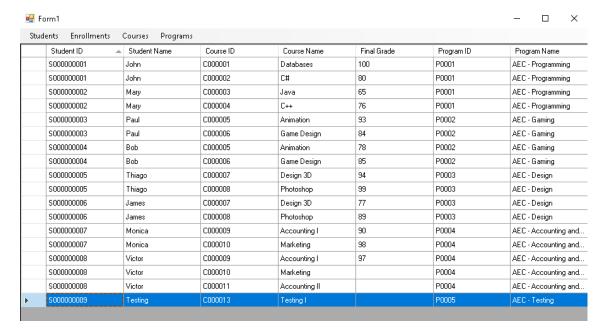
Enter the student ID and Course ID that are at the same program ID

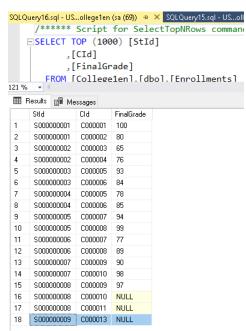




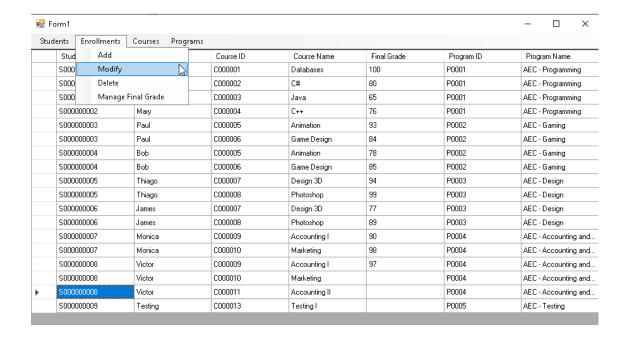




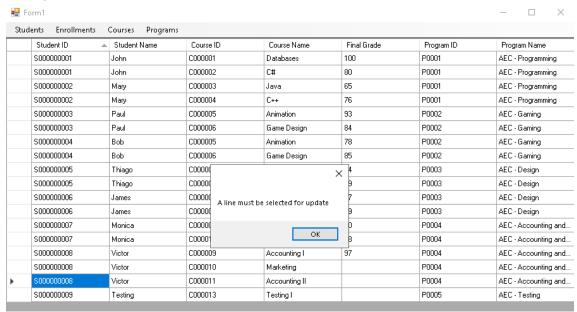


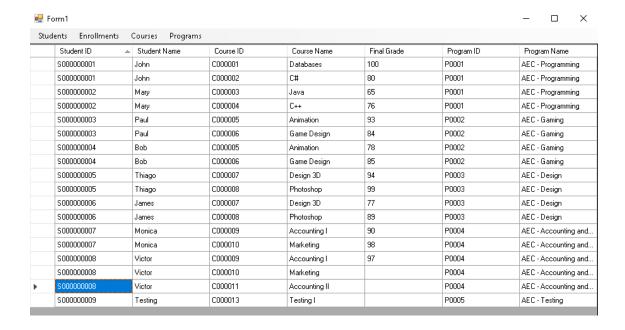


Modify the enrolments

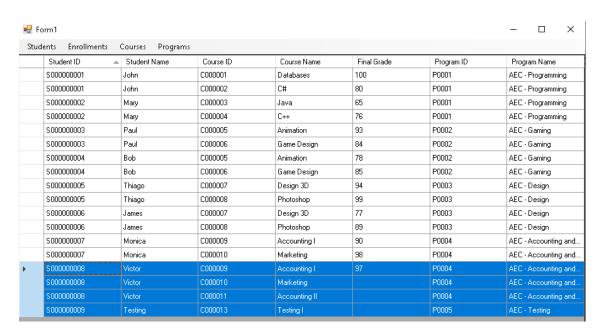


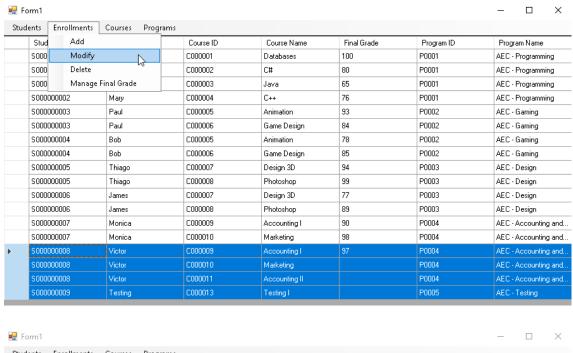
- Modify the enrollments without select a row

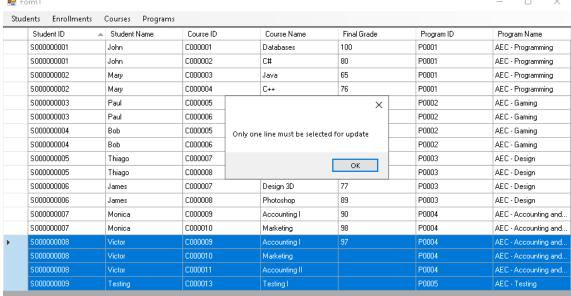




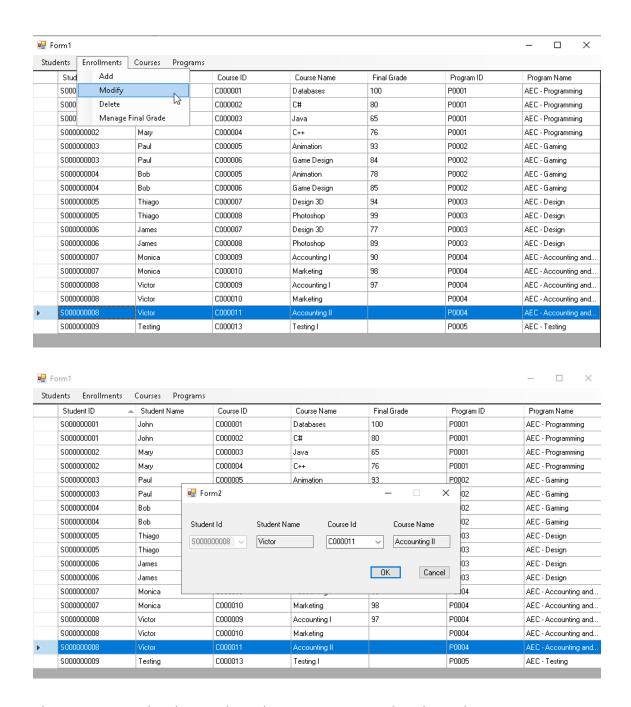
Modify a enrollments selecting more than one line



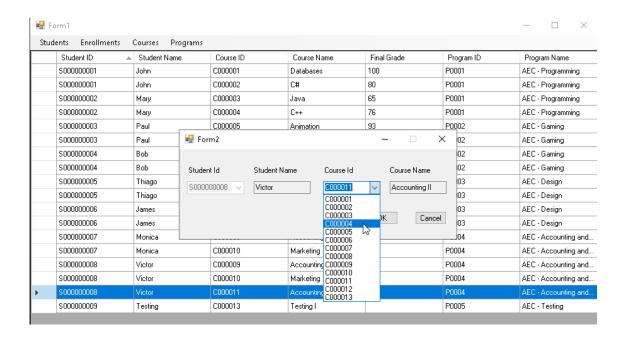


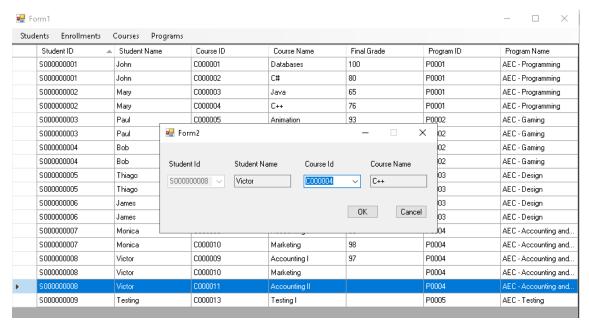


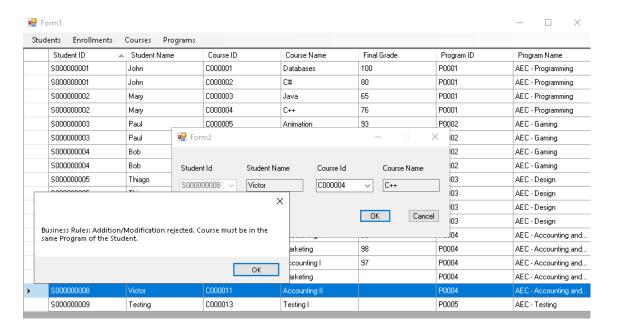
- Edit one row with null final grade



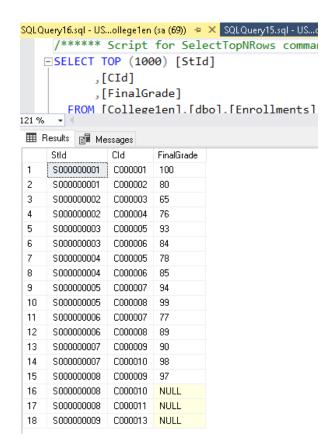
- Chose a course ID that does not have the same program ID than the student ID



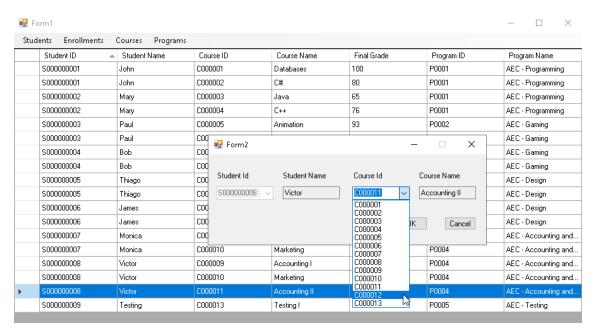


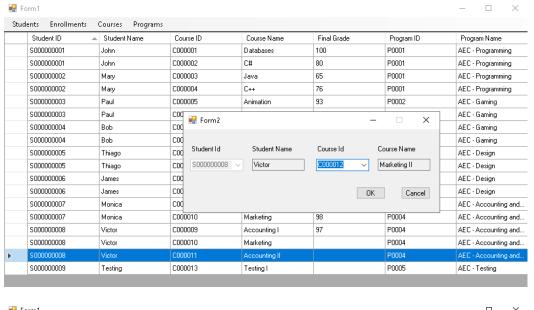


Student ID	▲ Student Name	Course ID	Course Name	Final Grade	Program ID	Program Name	
S00000001	John	C000001	Databases	100	P0001	AEC - Programming	
S000000001	John	C000002	C#	80	P0001	AEC - Programming	
\$000000002	Mary	C000003	Java	65	P0001	AEC - Programming	
S000000002	Mary	C000004	C++	76	P0001	AEC - Programming	
\$000000003	Paul	C000005	Animation	93	P0002	AEC - Gaming	
\$000000003	Paul	C000006	Game Design	84	P0002	AEC - Gaming	
S000000004	Bob	C000005	Animation	78	P0002	AEC - Gaming	
S000000004	Bob	C000006	Game Design	85	P0002	AEC - Gaming	
\$000000005	Thiago	C000007	Design 3D	94	P0003	AEC - Design	
\$000000005	Thiago	C000008	Photoshop	99	P0003	AEC - Design	
\$000000006	James	C000007	Design 3D	77	P0003	AEC - Design	
\$000000006	James	C000008	Photoshop	89	P0003	AEC - Design	
S000000007	Monica	C000009	Accounting I	90	P0004	AEC - Accounting a	
S00000007	Monica	C000010	Marketing	98	P0004	AEC - Accounting and	
S000000008	Victor	C000009	Accounting I	97	P0004	AEC - Accounting a	
\$000000008	Victor	C000010	Marketing		P0004	AEC - Accounting a	
S000000008	Victor	C000011	Accounting II		P0004	AEC - Accounting a	
S000000009	Testing	C000013	Testing I		P0005	AEC - Testing	

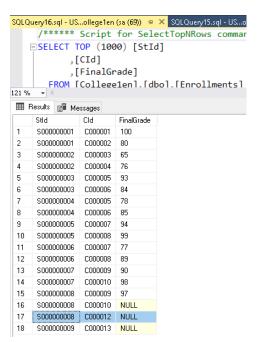


Selecting a course ID that has the same program ID than the student ID

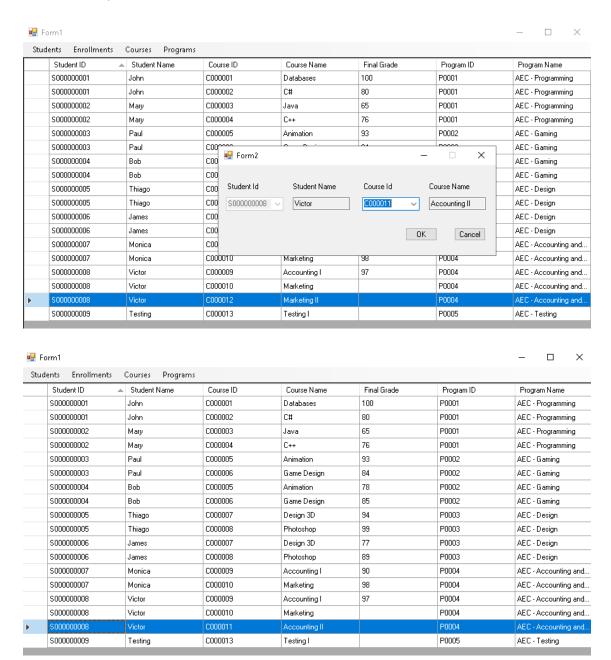




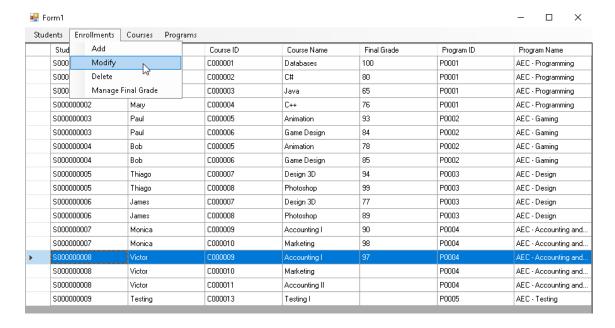
Student ID	Student Name	Course ID	Course Name	Final Grade	Program ID	Program Name
S000000001	John	C000001	Databases	100	P0001	AEC - Programming
S000000001	John	C000002	C#	80	P0001	AEC - Programming
S000000002	Mary	C000003	Java	65	P0001	AEC - Programming
S000000002	Mary	C000004	C++	76	P0001	AEC - Programming
S000000003	Paul	C000005	Animation	93	P0002	AEC - Gaming
\$000000003	Paul	C000006	Game Design	84	P0002	AEC - Gaming
S000000004	Bob	C000005	Animation	78	P0002	AEC - Gaming
S000000004	Bob	C000006	Game Design	85	P0002	AEC - Gaming
S000000005	Thiago	C000007	Design 3D	94	P0003	AEC - Design
S000000005	Thiago	C000008	Photoshop	99	P0003	AEC - Design
S000000006	James	C000007	Design 3D	77	P0003	AEC - Design
S000000006	James	C000008	Photoshop	89	P0003	AEC - Design
S000000007	Monica	C000009	Accounting I	90	P0004	AEC - Accounting
S000000007	Monica	C000010	Marketing	98	P0004	AEC - Accounting a
S000000008	Victor	C000009	Accounting I	97	P0004	AEC - Accounting
S000000008	Victor	C000010	Marketing		P0004	AEC - Accounting
S000000008	Victor	C000012	Marketing II		P0004	AEC - Accounting
S000000009	Testing	C000013	Testing I		P0005	AEC - Testing

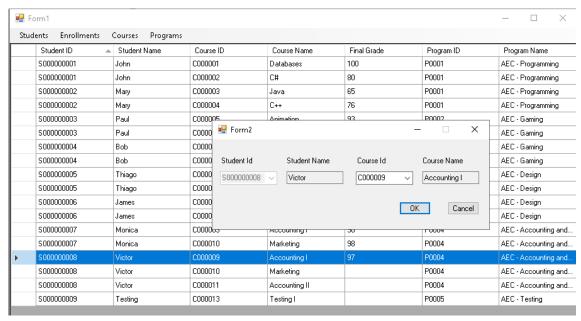


- Return to the previous course ID

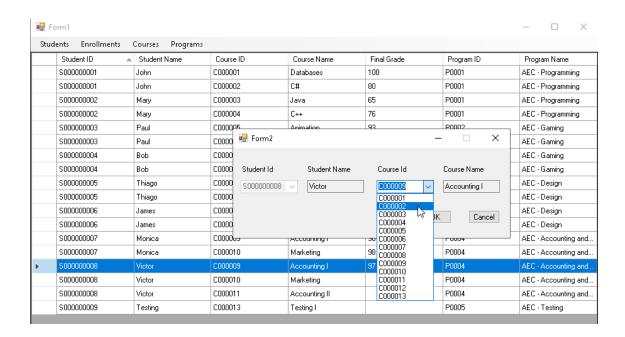


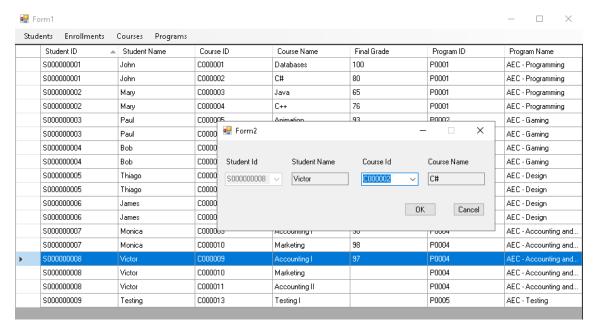
- Edit one row with filled final grade

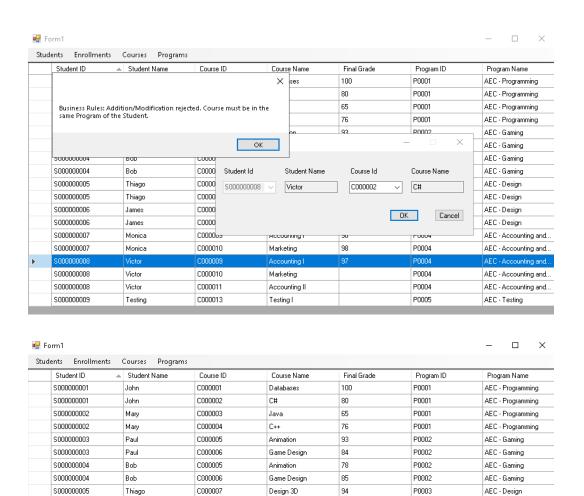




- Chose a course ID that does not have the same program ID than the student ID







Photoshop

Design 3D

Photoshop

Accounting I

Marketing

Marketing

Testing I

Accounting II

99

77

89

90

98

P0003

P0003

P0003

P0004

P0004

P0004

P0004

P0004

P0005

C000008

C000007

C000008

C000009

C000010

C000010

C000011

C000013

s000000005

S000000006

S000000006

S000000007

S000000007

5000000008

S000000009

Thiago

James

James

Monica

Monica

Victor

Victor

Testing

AEC - Design

AEC - Design

AEC - Design

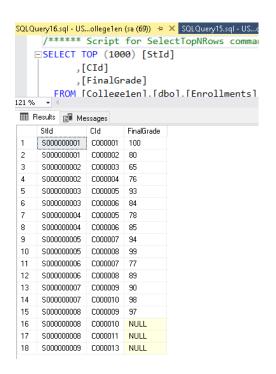
AEC - Accounting and..

AEC - Accounting and..

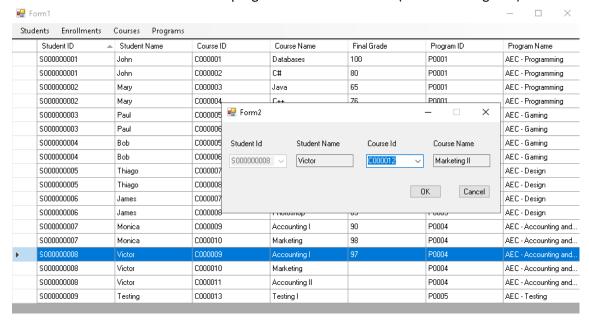
AEC - Accounting and...

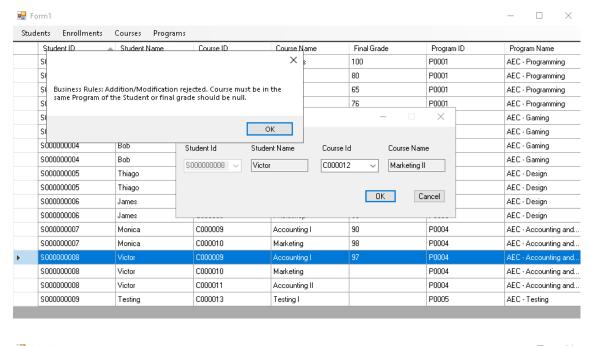
AEC - Accounting and...

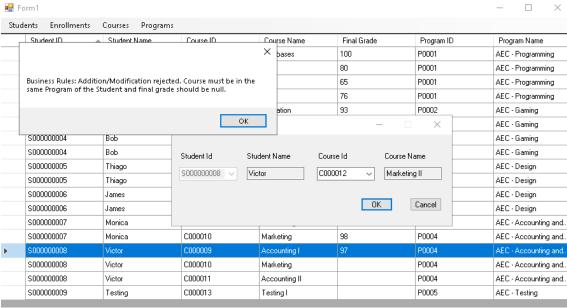
AEC - Testing

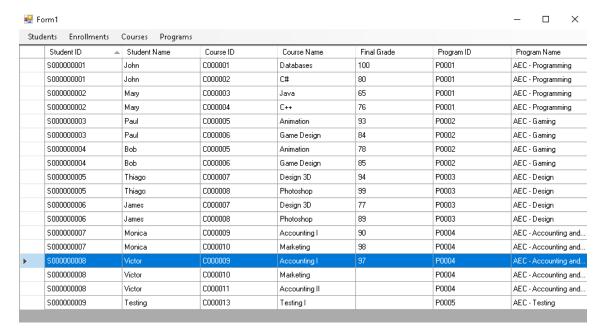


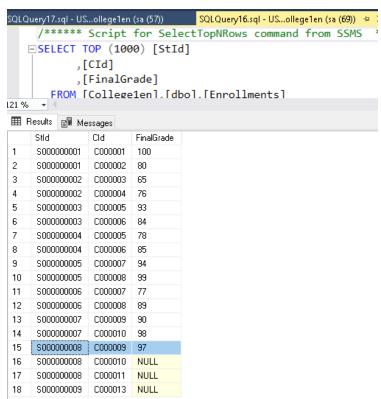
- Select a course ID that has the same program ID than student ID (Not null final grade)



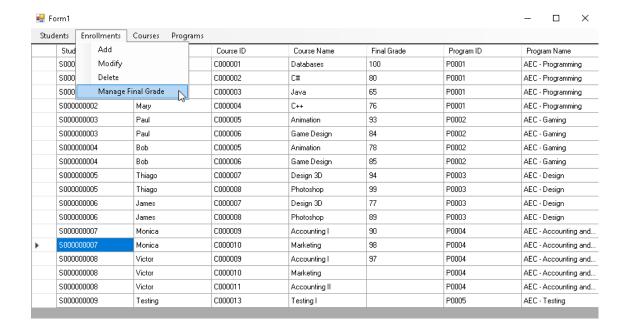




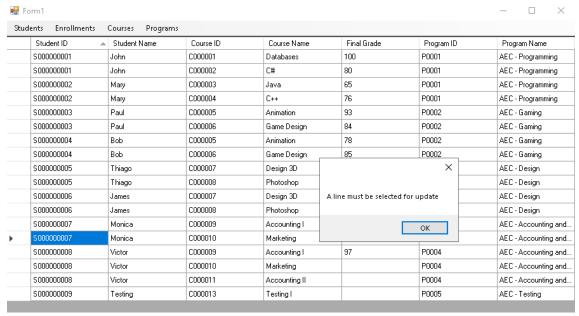




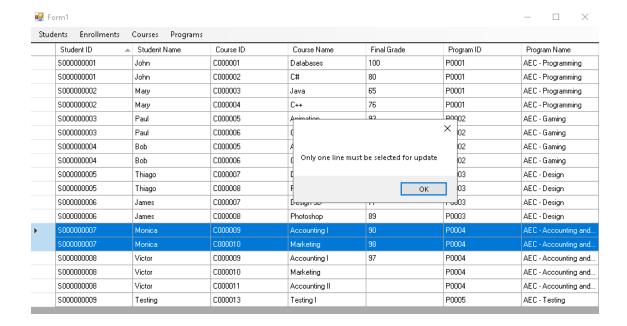
Manage final grade



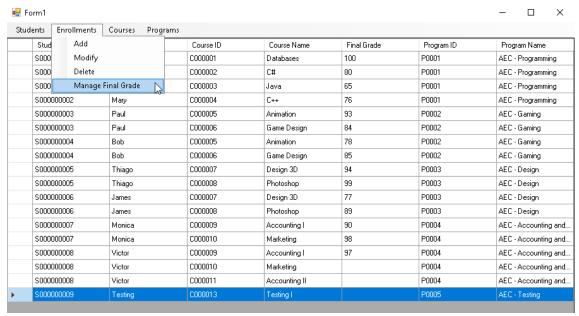
Try to edit the final grade without select a row

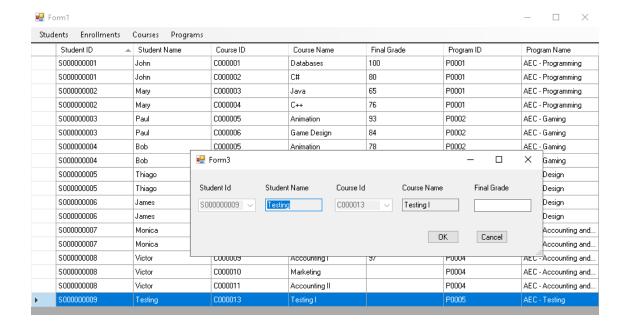


- Try to edit final grade selecting more than one row

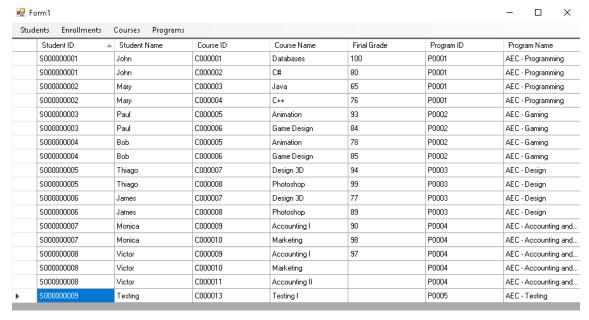


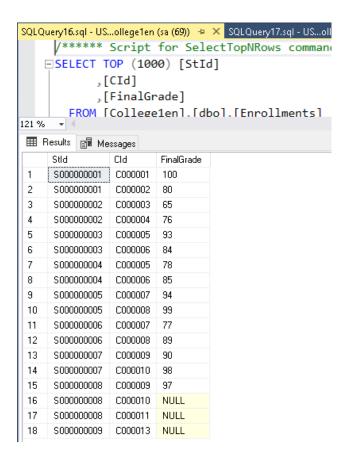
- Try to edit final grade null



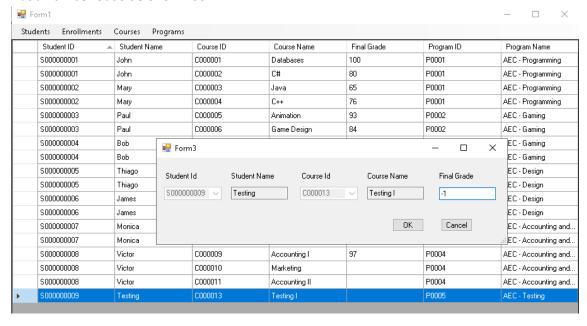


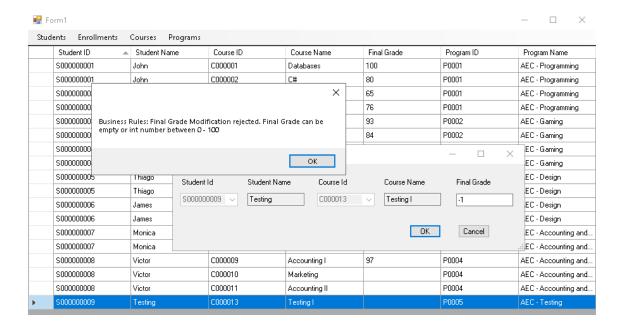
Leaving empty and clicking ok



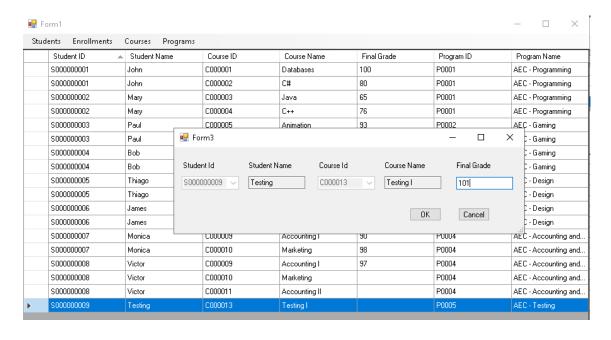


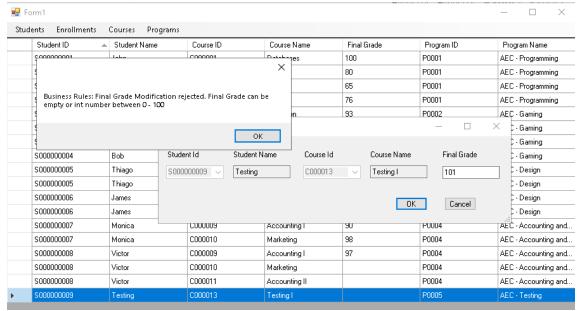
- Put a number out side of 0 - 100

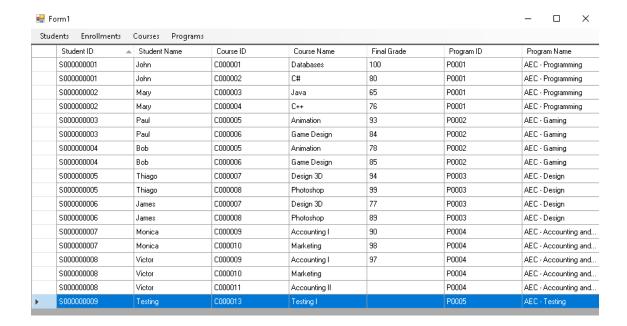




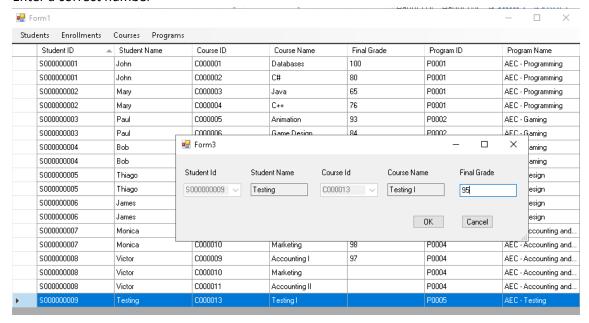
Student ID	▲ Student Name	Course ID	Course Name	Final Grade	Program ID	Program Name
S000000001	John	C000001	Databases	100	P0001	AEC - Programn
S000000001	John	C000002	C#	80	P0001	AEC - Programn
S000000002	Mary	C000003	Java	65	P0001	AEC - Programn
S000000002	Mary	C000004	C++	76	P0001	AEC - Programm
S000000003	Paul	C000005	Animation	93	P0002	AEC - Gaming
S000000003	Paul	C000006	Game Design	84	P0002	AEC - Gaming
S000000004	Bob	C000005	Animation	78	P0002	AEC - Gaming
S000000004	Bob	C000006	Game Design	85	P0002	AEC - Gaming
S000000005	Thiago	C000007	Design 3D	94	P0003	AEC - Design
S000000005	Thiago	C000008	Photoshop	99	P0003	AEC - Design
S000000006	James	C000007	Design 3D	77	P0003	AEC - Design
S000000006	James	C000008	Photoshop	89	P0003	AEC - Design
S000000007	Monica	C000009	Accounting I	90	P0004	AEC - Accounting
S000000007	Monica	C000010	Marketing	98	P0004	AEC - Accounting
S000000008	Victor	C000009	Accounting I	97	P0004	AEC - Accountin
S000000008	Victor	C000010	Marketing		P0004	AEC - Accounting
S000000008	Victor	C000011	Accounting II		P0004	AEC - Accountin

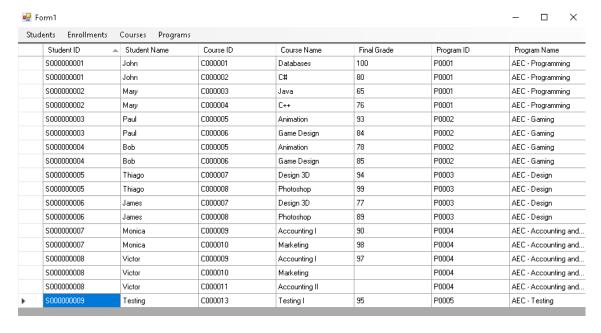


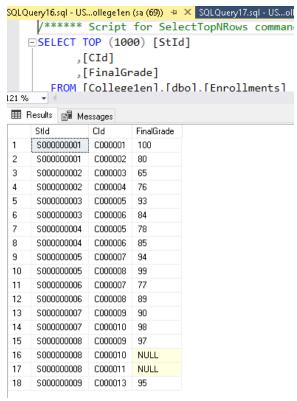




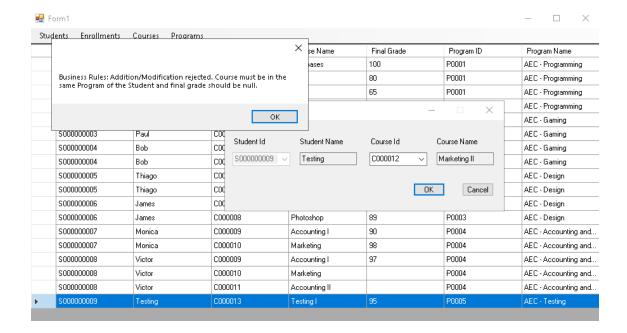
Enter a correct number



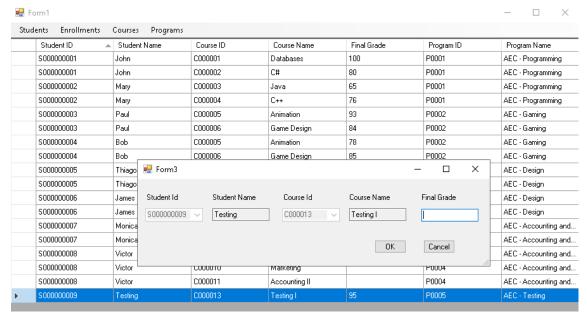


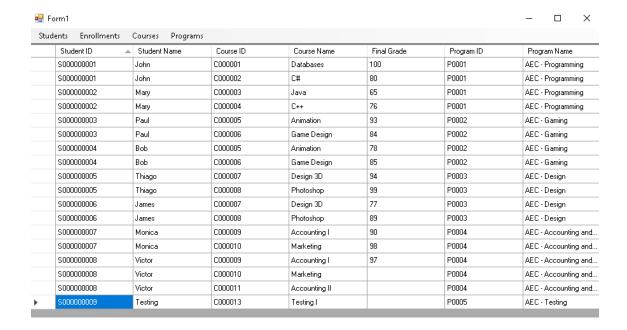


Trying to modify

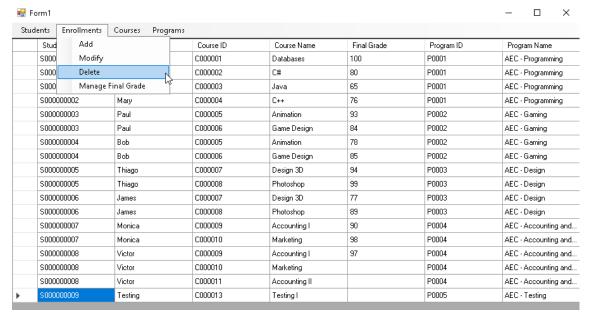


- Returning to null

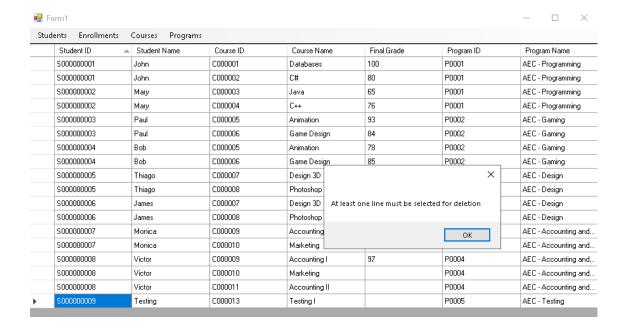




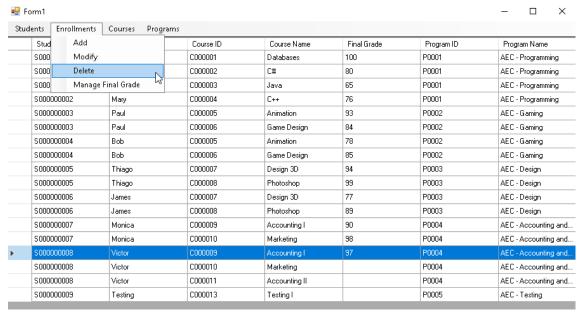
Delete enrollment

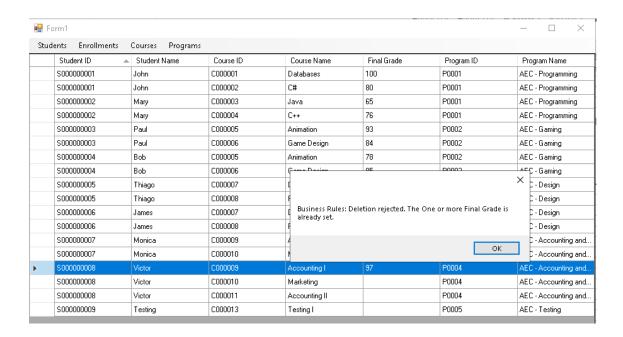


- Delete enrolment without select a row

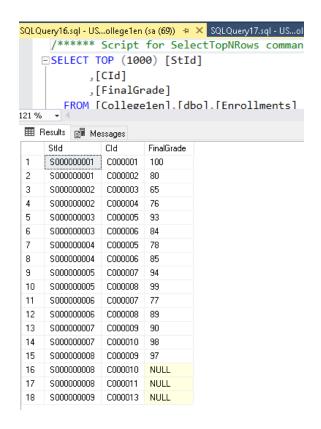


- Try to delete one row with not null final grade

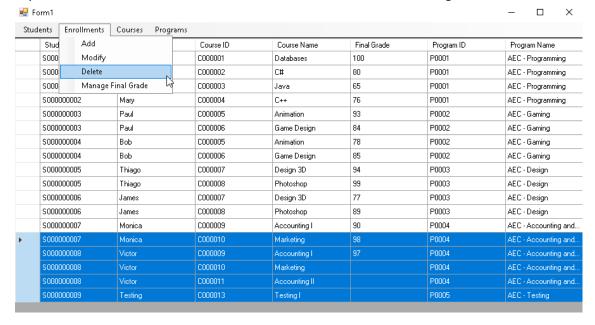


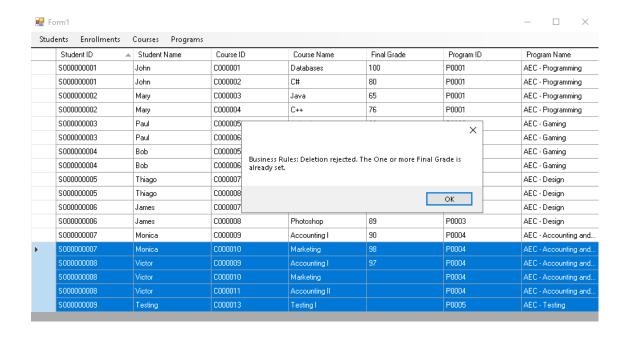


Form1 Idents Enrollment	s Courses Program	ns				- 🗆 X
Student ID	▲ Student Name	Course ID	Course Name	Final Grade	Program ID	Program Name
S000000001	John	C000001	Databases	100	P0001	AEC - Programming
S000000001	John	C000002	C#	80	P0001	AEC - Programming
S000000002	Mary	C000003	Java	65	P0001	AEC - Programming
S000000002	Mary	C000004	C++	76	P0001	AEC - Programming
S000000003	Paul	C000005	Animation	93	P0002	AEC - Gaming
S000000003	Paul	C000006	Game Design	84	P0002	AEC - Gaming
S000000004	Bob	C000005	Animation	78	P0002	AEC - Gaming
S000000004	Bob	C000006	Game Design	85	P0002	AEC - Gaming
S000000005	Thiago	C000007	Design 3D	94	P0003	AEC - Design
S000000005	Thiago	C000008	Photoshop	99	P0003	AEC - Design
S000000006	James	C000007	Design 3D	77	P0003	AEC - Design
S000000006	James	C000008	Photoshop	89	P0003	AEC - Design
S000000007	Monica	C000009	Accounting I	90	P0004	AEC - Accounting and
S000000007	Monica	C000010	Marketing	98	P0004	AEC - Accounting and
S000000008	Victor	C000009	Accounting I	97	P0004	AEC - Accounting and
S000000008	Victor	C000010	Marketing		P0004	AEC - Accounting and
\$000000008	Victor	C000011	Accounting II		P0004	AEC - Accounting and
S000000009	Testing	C000013	Testing I		P0005	AEC - Testing

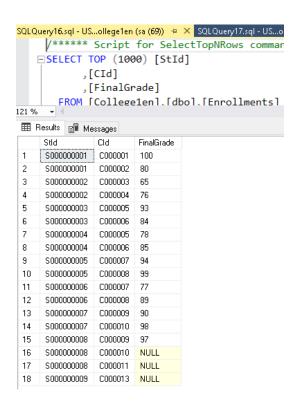


- Try to delete more than one row that there is one or more not null final grade

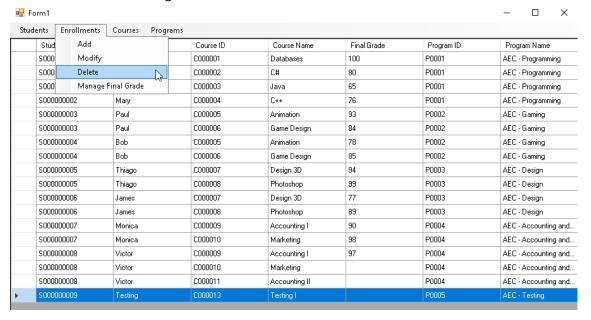


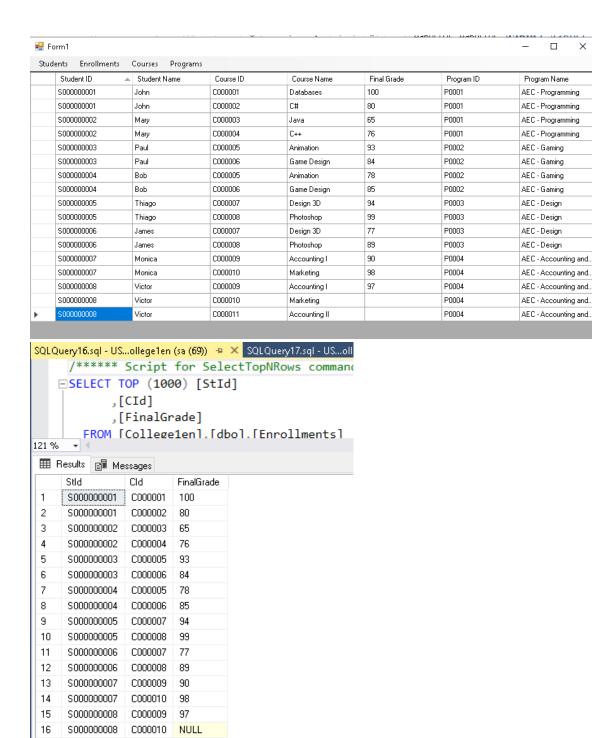


Student ID 4	Student Name	Course ID	Course Name	Final Grade	Program ID	Program Name
S000000001	John	C000001	Databases	100	P0001	AEC - Programmir
S000000001	John	C000002	C#	80	P0001	AEC - Programmi
S000000002	Mary	C000003	Java	65	P0001	AEC - Programmi
S000000002	Mary	C000004	C++	76	P0001	AEC - Programmi
S000000003	Paul	C000005	Animation	93	P0002	AEC - Gaming
S000000003	Paul	C000006	Game Design	84	P0002	AEC - Gaming
S000000004	Bob	C000005	Animation	78	P0002	AEC - Gaming
S000000004	Bob	C000006	Game Design	85	P0002	AEC - Gaming
S000000005	Thiago	C000007	Design 3D	94	P0003	AEC - Design
S000000005	Thiago	C000008	Photoshop	99	P0003	AEC - Design
S000000006	James	C000007	Design 3D	77	P0003	AEC - Design
S000000006	James	C000008	Photoshop	89	P0003	AEC - Design
S000000007	Monica	C000009	Accounting I	90	P0004	AEC - Accounting
S000000007	Monica	C000010	Marketing	98	P0004	AEC - Accounting
S000000008	Victor	C000009	Accounting I	97	P0004	AEC - Accounting
S000000008	Victor	C000010	Marketing		P0004	AEC - Accounting
S000000008	Victor	C000011	Accounting II		P0004	AEC - Accounting
S000000009	Testing	C000013	Testing I		P0005	AEC - Testing



- Delete one row with final grade null





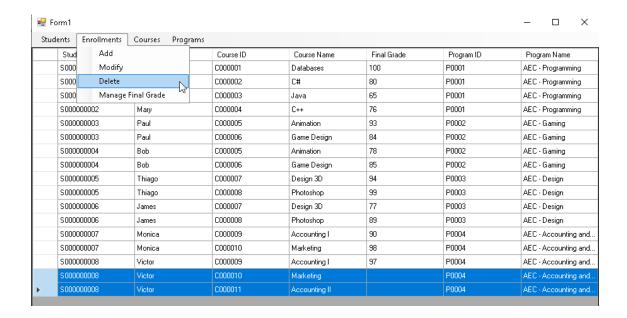
- Delete more than one row

S000000008

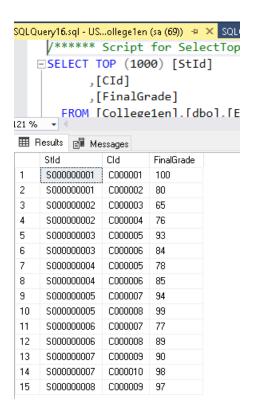
C000011

NULL

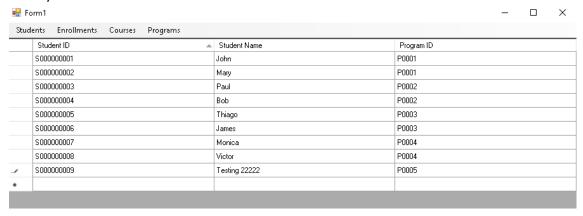
17

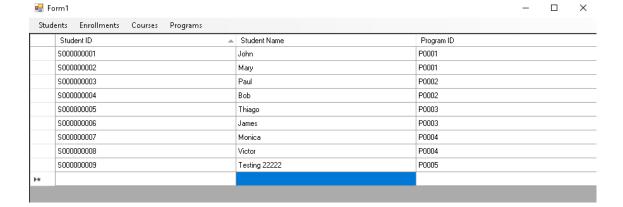


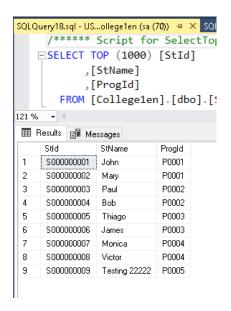
Student ID 4	Student Name	Course ID	Course Name	Final Grade	Program ID	Program Name
S000000001	John	C000001	Databases	100	P0001	AEC - Programming
S000000001	John	C000002	C#	80	P0001	AEC - Programming
S000000002	Mary	C000003	Java	65	P0001	AEC - Programming
S000000002	Mary	C000004	C++	76	P0001	AEC - Programming
S000000003	Paul	C000005	Animation	93	P0002	AEC - Gaming
S000000003	Paul	C000006	Game Design	84	P0002	AEC - Gaming
S000000004	Bob	C000005	Animation	78	P0002	AEC - Gaming
S000000004	Bob	C000006	Game Design	85	P0002	AEC - Gaming
S000000005	Thiago	C000007	Design 3D	94	P0003	AEC - Design
S000000005	Thiago	C000008	Photoshop	99	P0003	AEC - Design
S000000006	James	C000007	Design 3D	77	P0003	AEC - Design
S000000006	James	C000008	Photoshop	89	P0003	AEC - Design
S000000007	Monica	C000009	Accounting I	90	P0004	AEC - Accounting a
S000000007	Monica	C000010	Marketing	98	P0004	AEC - Accounting a
S000000008	Victor	C000009	Accounting I	97	P0004	AEC - Accounting a



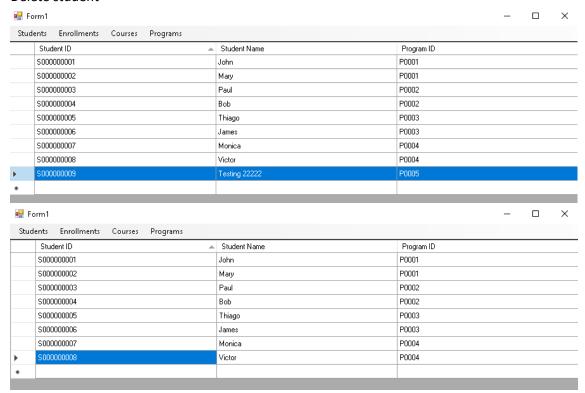
- Modify student

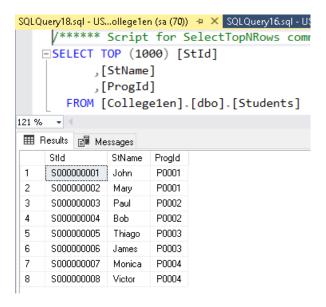




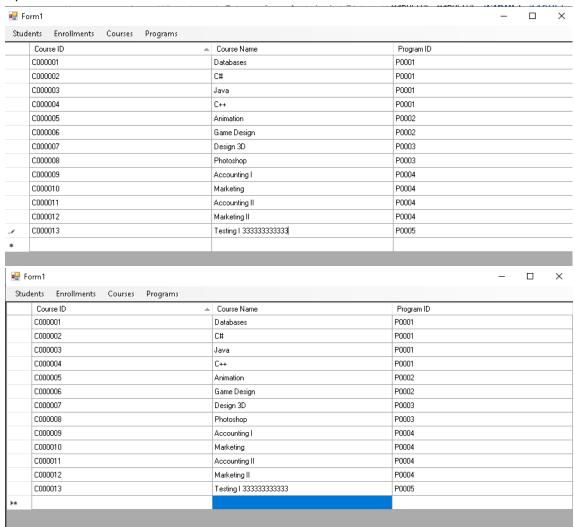


- Delete student





Update course

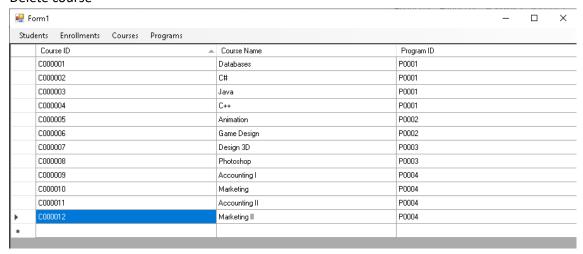


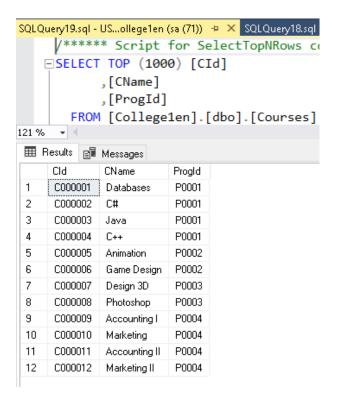
```
SQLQuery19.sql - US...ollege1en (sa (71)) + X SQLQuery18.sql
      /***** Script for SelectTopNRows co
    □SELECT TOP (1000) [CId]
              ,[CName]
              ,[ProgId]
         FROM [College1en].[dbo].[Courses]
121 % 🕶 🔻

    ■ Results    ■ Messages

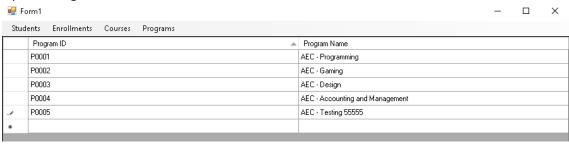
               CName
                                 Progld
     C000001
               Databases
                                 P0001
 2
      C000002
               C#
                                 P0001
 3
      C000003
                                 P0001
 4
                                 P0001
      C000004
               C++
 5
                                 P0002
      C000005
               Animation
 6
      C000006
                                 P0002
               Game Design
 7
                                 P0003
      C000007
               Design 3D
 8
      C000008
                                 P0003
               Photoshop
 9
      C000009
                                 P0004
               Accounting I
      C000010 Marketing
                                 P0004
 10
                                 P0004
 11
      C000011
               Accounting II
      C000012 Marketing II
                                 P0004
 12
 13
      C000013 Testing I 333333333...
                                 P0005
```

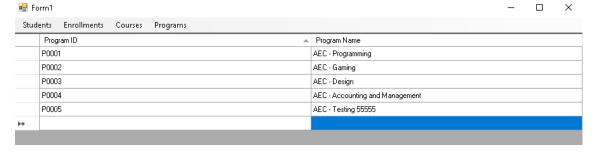
- Delete course

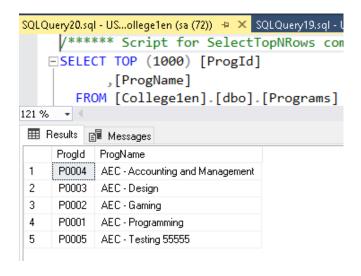


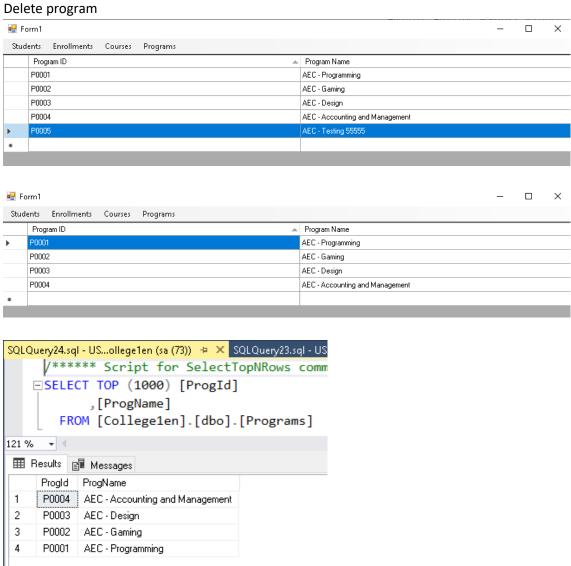


Update Program

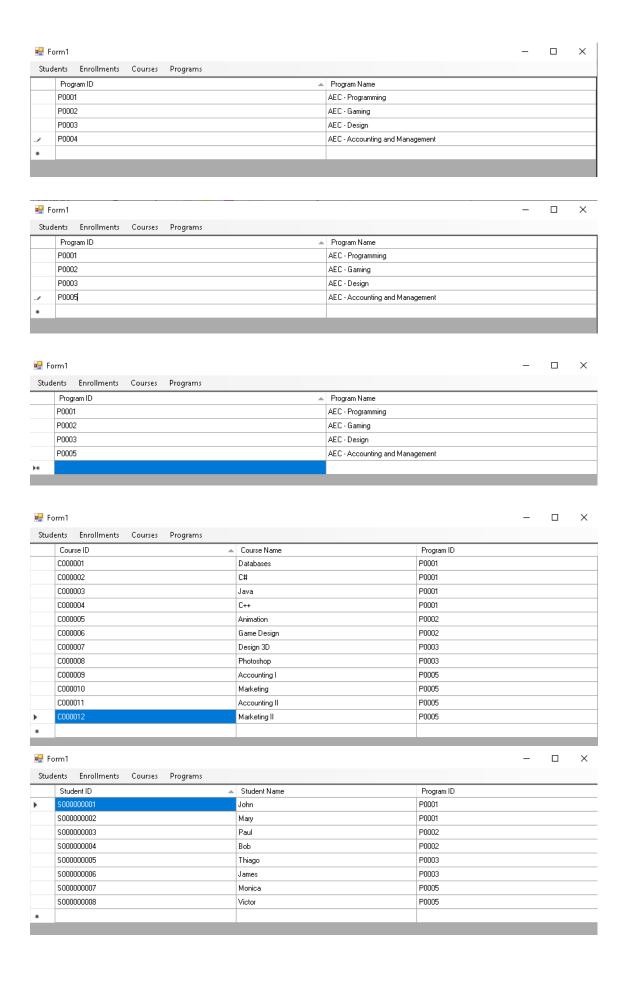








Modify the Program ID and propagating for student, course ID and enrollment



	Courses Program:	5				
Student ID 🔺	Student Name	Course ID	Course Name	Final Grade	Program ID	Program Name
S000000001	John	C000001	Databases	100	P0001	AEC - Programming
S000000001	John	C000002	C#	80	P0001	AEC - Programming
\$000000002	Mary	C000003	Java	65	P0001	AEC - Programming
S000000002	Mary	C000004	C++	76	P0001	AEC - Programming
S000000003	Paul	C000005	Animation	93	P0002	AEC - Gaming
S000000003	Paul	C000006	Game Design	84	P0002	AEC - Gaming
S000000004	Bob	C000005	Animation	78	P0002	AEC - Gaming
S000000004	Bob	C000006	Game Design	85	P0002	AEC - Gaming
S000000005	Thiago	C000007	Design 3D	94	P0003	AEC - Design
S000000005	Thiago	C000008	Photoshop	99	P0003	AEC - Design
S000000006	James	C000007	Design 3D	77	P0003	AEC - Design
S000000006	James	C000008	Photoshop	89	P0003	AEC - Design
S000000007	Monica	C000009	Accounting I	90	P0005	AEC - Accounting ar
S000000007	Monica	C000010	Marketing	98	P0005	AEC - Accounting ar
S000000008	Victor	C000009	Accounting I	97	P0005	AEC - Accounting ar
S000000008	Victor	C000010	Marketing		P0005	AEC - Accounting a
S000000008	Victor	C000012	Marketing II		P0005	AEC - Accounting ar