

MAINFORMDESIGNER.cs

```
FileStorageService.cs      GradeBook.cs      StudentRecord.cs      MainForm.cs      MainForm.Designer.cs  ↗ CIS285Project.MainForm
CIS285Project
74 // DATAGRIDVIEW
75 this.dgvStudents.Location = new System.Drawing.Point(25, 25);
76 this.dgvStudents.Size = new System.Drawing.Size(800, 350);
77 this.dgvStudents.ReadOnly = true;
78 this.dgvStudents.RowHeadersVisible = false;
79 this.dgvStudents.SelectionMode = System.Windows.Forms.DataGridViewSelectionMode.FullRowSelect;
80 this.dgvStudents.AllowUserToAddRows = false;
81 this.dgvStudents.AllowUserToDeleteRows = false;
82 this.dgvStudents.MultiSelect = false;
83 this.dgvStudents.ScrollBars = System.Windows.Forms.ScrollBars.Both;
84 this.dgvStudents.EnableHeadersVisualStyles = false;
85 this.dgvStudents.ColumnHeadersDefaultCellStyle.BackColor =
86     System.Drawing.Color.FromArgb(0xBF, 0xA7, 0xE2);
87 this.dgvStudents.ColumnHeadersDefaultCellStyle.ForeColor =
88     System.Drawing.Color.White;
89 this.dgvStudents.BackgroundColor = System.Drawing.Color.White;
90
91 this.dgvStudents.Columns.AddRange(new System.Windows.Forms.DataGridViewColumn[] {
92     this.colName, this.colG1, this.colG2, this.colG3, this.colG4,
93     this.colG5, this.colG6, this.colG7, this.colG8, this.colAvg
94 });
95
96 this.dgvStudents.SelectionChanged += new System.EventHandler(this.dgvStudents_SelectionChanged);
97
98 // Column bindings
99 this.colName.DataPropertyName = "Name";
100 this.colG1.DataPropertyName = "Grade1";
101 this.colG2.DataPropertyName = "Grade2";
102 this.colG3.DataPropertyName = "Grade3";
103 this.colG4.DataPropertyName = "Grade4";
104 this.colG5.DataPropertyName = "Grade5";
105 this.colG6.DataPropertyName = "Grade6";
106 this.colG7.DataPropertyName = "Grade7";
107 this.colG8.DataPropertyName = "Grade8";
108 this.colAvg.DataPropertyName = "Average";
109
110 // Column headers
111 this.colName.HeaderText = "Student Name";
112 this.colName.Width = 140;
113
114 this.colG1.HeaderText = "Grade 1"; this.colG1.Width = 60;
115 this.colG2.HeaderText = "Grade 2"; this.colG2.Width = 60;
116 this.colG3.HeaderText = "Grade 3"; this.colG3.Width = 60;
117 this.colG4.HeaderText = "Grade 4"; this.colG4.Width = 60;
118 this.colG5.HeaderText = "Grade 5"; this.colG5.Width = 60;
119 this.colG6.HeaderText = "Grade 6"; this.colG6.Width = 60;
120 this.colG7.HeaderText = "Grade 7"; this.colG7.Width = 60;
121 this.colG8.HeaderText = "Grade 8"; this.colG8.Width = 60;
122
123 this.colAvg.HeaderText = "Average";
124 this.colAvg.Width = 80;
125
126 // BUTTONS
127 this.btnAdd.Location = new System.Drawing.Point(850, 25);
128 this.btnAdd.Size = new System.Drawing.Size(220, 40);
129 this.btnAdd.Text = "Add Student";
130 this.btnAdd.Click += new System.EventHandler(this.btnAdd_Click);
131 this.btnAdd.MouseEnter += new System.EventHandler(this.Button_MouseEnter);
132 this.btnAdd.MouseLeave += new System.EventHandler(this.Button_MouseLeave);
133
134 this.btnEdit.Location = new System.Drawing.Point(850, 75);
135 this.btnEdit.Size = new System.Drawing.Size(220, 40);
136 this.btnEdit.Text = "Edit Student";
137 this.btnEdit.Click += new System.EventHandler(this.btnedit_Click);
138 this.btnEdit.MouseEnter += new System.EventHandler(this.Button_MouseEnter);
139 this.btnEdit.MouseLeave += new System.EventHandler(this.Button_MouseLeave);
140
141 this.btnDelete.Location = new System.Drawing.Point(850, 125);
142 this.btnDelete.Size = new System.Drawing.Size(220, 40);
143 this.btnDelete.Text = "Delete Student";
144 this.btnDelete.Click += new System.EventHandler(this.btnDelete_Click);
145 this.btnDelete.MouseEnter += new System.EventHandler(this.Button_MouseEnter);
146
```

70% No issues found

MAINFORM.cs (MULTIPLE SCREENSHOTS)

The screenshot shows a code editor window with the tab bar at the top containing "FileStorageService.cs", "GradeBook.cs", "StudentRecord.cs", and "MainForm.cs". The "MainForm.cs" tab is active. The code editor displays the following C# code:

```
1  using CIS285Project.Models;
2  using CIS285Project.Services;
3  using System;
4  using System.ComponentModel;
5  using System.Drawing;
6  using System.Linq;
7  using System.Windows.Forms;
8
9  namespace CIS285Project
10 {
11     public partial class MainForm : Form
12     {
13         private GradeBook _gradeBook = new GradeBook();
14         private BindingList<StudentRecord> _bindingList;
15         private FileStorageService _fileStorage = new FileStorageService();
16         private int _editingIndex = -1;
17
18         private Color buttonNormalColor = Color.FromArgb(0xBF, 0xA7, 0xE2);
19         private Color buttonHoverColor = Color.FromArgb(0xD4, 0xC7, 0xEE);
20
21         public MainForm()
22         {
23             InitializeComponent();
24             InitializeDataBinding();
25             StyleButtons();
26             LoadSampleStudents();
27             UpdateSummary();
28         }
29     }
30 }
```

The code defines a partial class `MainForm` that inherits from `Form`. It contains several private fields for managing a grade book, a binding list, a file storage service, and colors for buttons. The constructor initializes components, binds data, styles buttons, loads sample students, and updates a summary.

The screenshot shows a Microsoft Visual Studio interface with the code editor open to the `MainForm.cs` file. The title bar of the code editor window displays "MainForm.cs". The code itself is C# and defines a class named `CIS285Project`. It includes methods for validating grade input and loading sample student data into a `GradeBook`.

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```

The code includes validation logic for grade textboxes (lines 65-310) and sample student data loading (lines 320-510). The validation logic checks if a grade is null or whitespace, or if it's a valid double between 0 and 100. The sample student data is added to a `GradeBook` object.

Data Sources

FileStorageService.cs	GradeBook.cs	StudentRecord.cs	MainForm.cs	MainForm.Designer.cs
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C# CIS285Project

```
334     Grade5 = 71,
335     Grade6 = 81,
336     Grade7 = 87,
337     Grade8 = 100,
338
339     );
340
341     _bindingList = new BindingList<StudentRecord>(_gradeBook.Students);
342     dgvStudents.DataSource = _bindingList;
343
344     lblStatus.Text = "Loaded 19 active students.";
345 }
346
347 // -----
348 // SUMMARY UPDATE
349 // -----
350
351 private void UpdateSummary()
352 {
353     int count = _gradeBook.Students.Count;
354     lblTotalStudents.Text = $"Total Students: {count}";
355     lblSummaryClassAvg.Text = $"Class Avg: {_gradeBook.CalculateClassAverage():F2}";
356
357     if (count > 0)
358     {
359         lblHighestAvg.Text = $"Highest Avg: {_gradeBook.Students.Max(s => s.Average):F2}";
360         lblLowestAvg.Text = $"Lowest Avg: {_gradeBook.Students.Min(s => s.Average):F2}";
361         lblPassingCount.Text = $"Passing (>=70): {_gradeBook.Students.Count(s => s.Average >= 70)}";
362     }
363     else
364     {
365         lblHighestAvg.Text = "Highest Avg: N/A";
366         lblLowestAvg.Text = "Lowest Avg: N/A";
367         lblPassingCount.Text = "Passing: 0";
368     }
369
370 // -----
371 // BUTTON CLICK EVENTS
372 // -----
373
374 private void btnAdd_Click(object sender, EventArgs e)
375 {
376     ClearInputs();
377     _editingIndex = -1;
378     lblStatus.Text = "Adding new student...";
379 }
```

FileStorageService.cs | GradeBook.cs | StudentRecord.cs | **MainForm.cs** | Main.cs

CIS285Project

```
529     }
530 
531     1 reference
532     private void btnAverage_Click(object sender, EventArgs e)
533     {
534         lblClassAverage.Text = _gradeBook.CalculateClassAverage().ToString("F2");
535         lblStatus.Text = "Class average updated.";
536         UpdateSummary();
537     }
538 
539     1 reference
540     private void btnSaveFile_Click(object sender, EventArgs e)
541     {
542         SaveFileDialog dialog = new SaveFileDialog();
543         dialog.Filter = "XML Files|*.xml";
544 
545         if (dialog.ShowDialog() == DialogResult.OK)
546         {
547             _fileStorage.Save(dialog.FileName, _gradeBook.Students);
548             lblStatus.Text = "File saved.";
549         }
550 
551     1 reference
552     private void btnSaveNotes_Click(object sender, EventArgs e)
553     {
554         if (dgvStudents.CurrentRow == null)
555         {
556             MessageBox.Show("Select a student first.");
557             return;
558         }
559 
560         int index = dgvStudents.CurrentRow.Index;
561         _gradeBook.Students[index].Notes = txtNotes.Text;
562 
563         lblStatus.Text = "Notes saved.";
564 
565     1 reference
566     private void btnLoadFile_Click(object sender, EventArgs e)
567     {
568         OpenFileDialog dialog = new OpenFileDialog();
569         dialog.Filter = "XML Files|*.xml";
570 
571         if (dialog.ShowDialog() == DialogResult.OK)
572         {
573             var list = _fileStorage.Load(dialog.FileName);
574 
575             _gradeBook.Students.Clear();
576             _gradeBook.Students.AddRange(list);
577 
578             _bindingList = new BindingList<StudentRecord>(_gradeBook.Students);
579             dgvStudents.DataSource = _bindingList;
580 
581             UpdateSummary();
582             lblStatus.Text = "File loaded.";
583         }
584     }
585 }
```

PROGRAM.cs

The screenshot shows a code editor interface with a dark theme. On the left, there's a vertical toolbar labeled "Data Sources". The main window displays the "Program.cs" file under the "CIS285Project" solution. The code is as follows:

```
1  using System;
2  using System.Windows.Forms;
3
4  namespace CIS285Project
5  {
6      internal static class Program
7      {
8          [STAThread]
9          static void Main()
10         {
11             Application.EnableVisualStyles();
12             Application.SetCompatibleTextRenderingDefault(false);
13             Application.Run(new MainForm()); // YOUR MAIN WINDOW
14         }
15     }
16 }
17
```

FILESTORAGESERVICE.cs

```
10 11  namespace CIS285Project.Services
12 13  {
14 15      public class FileStorageService
16 17      {
18 19          public void Save(string filePath, List<StudentRecord> students)
20 21          {
22 23              var doc = new XDocument(
24 25                  new XElement("Students",
26 27                      students.Select(s =>
28 29                          new XElement("Student",
30 31                              new XAttribute("Name", s.Name ?? ""),
32 33                              new XAttribute("Grade1", s.Grade1?.ToString() ?? ""),
34 35                              new XAttribute("Grade2", s.Grade2?.ToString() ?? ""),
36 37                              new XAttribute("Grade3", s.Grade3?.ToString() ?? ""),
38 39                              new XAttribute("Grade4", s.Grade4?.ToString() ?? ""),
40 41                              new XAttribute("Grade5", s.Grade5?.ToString() ?? ""),
42 43                              new XAttribute("Grade6", s.Grade6?.ToString() ?? ""),
44 45                              new XAttribute("Grade7", s.Grade7?.ToString() ?? ""),
46 47                              new XAttribute("Grade8", s.Grade8?.ToString() ?? ""),
48 49                              new XElement("Notes", s.Notes ?? ""))
50 51                          )
52 53  );
54 55              doc.Save(filePath);
56 57  }
58 59  public List<StudentRecord> Load(string filePath)
60 61  {
62 63      var result = new List<StudentRecord>();
64 65      if (!File.Exists(filePath))
66 67          return result;
68 69      var doc = XDocument.Load(filePath);
69 70      foreach (var elem in doc.Root.Elements("Student"))
71 72      {
73 74          var s = new StudentRecord
75 76          {
77 78              Name = (string)elem.Attribute("Name")
79 80              Grade1 = ParseNullableDouble((string)elem.Attribute("Grade1"));
80 81              Grade2 = ParseNullableDouble((string)elem.Attribute("Grade2"));
81 82              Grade3 = ParseNullableDouble((string)elem.Attribute("Grade3"));
82 83              Grade4 = ParseNullableDouble((string)elem.Attribute("Grade4"));
83 84              Grade5 = ParseNullableDouble((string)elem.Attribute("Grade5"));
84 85              Grade6 = ParseNullableDouble((string)elem.Attribute("Grade6"));
85 86              Grade7 = ParseNullableDouble((string)elem.Attribute("Grade7"));
86 87              Grade8 = ParseNullableDouble((string)elem.Attribute("Grade8"));
87 88              Notes = (string)elem.Element("Notes") ?? "";
89 90              result.Add(s);
90 91          }
91 92      }
92 93      return result;
93 94  }
94 95  private double? ParseNullableDouble(string value)
95 96  {
96 97      if (double.TryParse(value, out double d))
97 98          return d;
98 99      return null;
99 100 }
100 }
```

GRADEBOOK.cs

The screenshot shows a .NET IDE interface with the GradeBook.cs file open. The window title is "GradeBook.cs". The code implements a GradeBook class that manages a list of StudentRecord objects.

```
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Text;
5  using System.Threading.Tasks;
6
7  namespace CIS285Project.Models
8  {
9      public class GradeBook
10     {
11         public List<StudentRecord> Students { get; private set; }
12
13         public GradeBook()
14         {
15             Students = new List<StudentRecord>();
16         }
17
18         public void AddStudent(StudentRecord s) => Students.Add(s);
19
20         public void UpdateStudent(int index, StudentRecord s)
21         {
22             if (index >= 0 && index < Students.Count)
23                 Students[index] = s;
24         }
25
26         public void RemoveStudent(int index)
27         {
28             if (index >= 0 && index < Students.Count)
29                 Students.RemoveAt(index);
30         }
31
32         public double CalculateClassAverage()
33         {
34             if (Students.Count == 0)
35                 return 0;
36
37             return Students.Average(s => s.Average);
38         }
39     }
40 }
```

STUDENTRECORD.cs

The screenshot shows a code editor window with the tab bar at the top containing "Program.cs", "FileStorageService.cs", "GradeBook.cs", and "StudentRecord.cs". The "StudentRecord.cs" tab is active. On the left, there is a sidebar labeled "Data Sources". The main area displays the C# code for the "StudentRecord" class:

```
1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Text;
5  using System.Threading.Tasks;
6
7  namespace CIS285Project.Models
8  {
9
10     public class StudentRecord
11     {
12
13         public string Name { get; set; }
14
15         public double? Grade1 { get; set; }
16         public double? Grade2 { get; set; }
17         public double? Grade3 { get; set; }
18         public double? Grade4 { get; set; }
19         public double? Grade5 { get; set; }
20         public double? Grade6 { get; set; }
21         public double? Grade7 { get; set; }
22         public double? Grade8 { get; set; }
23
24         public double Average
25         {
26             get
27             {
28                 var grades = new double?[]
29                 {
30                     Grade1, Grade2, Grade3, Grade4,
31                     Grade5, Grade6, Grade7, Grade8
32                 };
33
34                 var valid = grades.Where(g => g.HasValue).Select(g => g.Value);
35                 return valid.Any() ? valid.Average() : 0;
36             }
37         }
38     }
39 }
```

Source Code Reference:

This project was developed by our group and was not adapted from any external repository or tutorial project.