Final Assignment: Student Management System – Completing Features 4, 6, 7, & 8

- Due 12 May by 23:59
- Points 200
- Submitting a file upload
- Available 4 Apr at 0:00 - 12 May at 23:59

This assignment was locked 12 May at 23:59.

Objective:

This final assignment will complete the Student Management System by implementing the remaining features:

- **Part 4: Edit Student Information –** Allow users to modify existing student records.
- **Part 6: Delete Student Record –** Enable users to remove student records.
- **Part 7: Generate Reports –** Create printable reports of student data.
- **Part 8: User Roles & Access Control** – Implement basic role-based functionality for teachers and admins.

Since database connections have not been covered yet, students should continue using **synthetic data (e.g., lists or hardcoded values).**

Part 4: Edit Student Information (50 Points)

Feature Details:

- **Purpose:** Allow users to select a student from the **View Students** list and update their details.
- **Controls to Use:**
  - **DataGridView:** Display existing students.
  - **Buttons:** “Edit” button to open a form for modifying student details.
  - **TextBoxes, ComboBoxes, DateTimePicker:** For updating student details.
  - **Save Button:** To save the modified data.
- **Concepts to Implement:**
  - Selecting a student from the DataGridView and loading their details into an editable form.

  - Updating student details and reflecting the changes in the list.
  - Displaying success or error messages after updating.

Requirements:

- Clicking **Edit** should open a form pre-filled with the selected student's information.
- Users can modify fields such as Name, Age, and Class.
- Implement basic **input validation** to prevent incorrect data entry.
- After clicking **Save**, the updated information should replace the old record in the list.

Part 6: Delete Student Record (40 Points)

Feature Details:

- **Purpose:** Enable users to remove student records from the system.
- **Controls to Use:**
  - **DataGridView:** Displays all student records.
  - **Button:** "Delete" button to remove a selected student.
  - **MessageBox:** For confirmation before deletion.
- **Concepts to Implement:**
  - Users should be able to select a student in the DataGridView and click "Delete."
  - A **confirmation MessageBox** should appear before removing the record.
  - After confirming, the student should be removed from the list.

Requirements:

- Ensure the system does not crash when deleting students.
- If no student is selected and "Delete" is clicked, show an error message.
- Display a confirmation MessageBox (e.g., "Are you sure you want to delete this student?").
- After deletion, refresh the list to reflect the change.

Part 7: Generate Reports (60 Points)

Feature Details:

- **Purpose:** Generate reports summarizing student data.
- **Controls to Use:**
  - **Button:** “Generate Report” button.
  - **ListView, DataGridView, or TextArea:** To display the report.
  - **PrintDialog, PrintPreviewDialog:** For printing functionality.
- **Concepts to Implement:**
  - Users should be able to generate a **summary report** listing students and their details.
  - Provide an option to **print** or save the report.

Requirements:

- Implement a **“Generate Report”** button that compiles and displays student information.
- The report should include **at least Name, Age, and Class.**
- Provide a **print preview** before printing.
- **Optional:** Allow users to save the report as a text file.

Part 8: User Roles & Access Control (50 Points)

Feature Details:

- **Purpose:** Differentiate access levels for teachers and admins.
- **Controls to Use:**
  - **ComboBox, RadioButtons, or User Login Mechanism:** To differentiate roles.
  - **Buttons, Menus:** Show or hide options based on user role.
- **Concepts to Implement:**
  - Teachers should have **limited access** (e.g., they can only view and search students).
  - Admins should have **full access** (e.g., they can add, edit, and delete students).

Requirements:

- Implement a **basic role-based access system.**

- Users should select whether they are a **Teacher or Admin** upon logging in.
- Restrict certain functionalities based on the selected role.
  - **Teachers** can **only view and search students**.
  - **Admins** can **add, edit, and delete students**.
- **Optional:** Display the user’s role in the application header.

Final Project

Criteria	Ratings				Pts
Edit Student Form Design Well-structured form that allows users to modify student information.	**15 to >8.0 Pts** **Excellent**	**8 to >4.0 Pts** **Good**	**4 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	15 pts
Edit Functionality & Validation Successfully loads student data, allows changes, and saves updated records with validation.	**15 to >8.0 Pts** **Excellent**	**8 to >4.0 Pts** **Good**	**4 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	15 pts
Delete Student Button & Logic Provides a delete button that removes selected students from the list.	**15 to >8.0 Pts** **Excellent**	**8 to >4.0 Pts** **Good**	**4 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	15 pts
Delete Confirmation MessageBox Displays a confirmation message before deletion and prevents accidental deletions.	**15 to >8.0 Pts** **Excellent**	**8 to >4.0 Pts** **Good**	**4 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	15 pts
Generate Report Button & Display Generates a structured report listing student details.	**15 to >8.0 Pts** **Excellent**	**8 to >4.0 Pts** **Good**	**4 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	15 pts
Print Functionality & Preview Allows users to preview and print reports correctly.	**20 to >10.0 Pts** **Excellent**	**10 to >5.0 Pts** **Good**	**5 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	20 pts

Criteria	Ratings				Pts
Role Selection & Display Enables users to choose between Teacher and Admin roles.	**15 to >8.0 Pts** **Excellent**	**8 to >4.0 Pts** **Good**	**4 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	15 pts
Feature Restriction by Role Implements proper access control (Teachers have limited access, Admins have full access).	**20 to >10.0 Pts** **Excellent**	**10 to >5.0 Pts** **Good**	**5 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	20 pts
Code Organization & Readability Code is well-structured, well-commented, and follows good naming conventions.	**20 to >10.0 Pts** **Excellent**	**10 to >5.0 Pts** **Good**	**5 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	20 pts
User Interface Design & Usability The UI is intuitive, well-organized, and easy to navigate.	**20 to >10.0 Pts** **Excellent**	**10 to >5.0 Pts** **Good**	**5 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	20 pts
Overall Application Functionality The entire system functions as expected, with smooth navigation and correct logic for all features.	**30 to >15.0 Pts** **Excellent**	**15 to >8.0 Pts** **Good**	**8 to >0.0 Pts** **Satisfactory**	**0 Pts** **Needs Improvement**	30 pts
					Total points: 200