: CIS 25 FINAL PROJECT

Student Record System

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OVERVIEW

- This is a C++ application that allows users to:
- Add new student records
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- View a list of students
- Save student data to a file
- It uses object-oriented programming with file I/O and dynamic memory.
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PROGRAM FEATURES

- Add Student (ID, Name, GPA)
- View all entered students
- Save to student_data.txt
- Uses vector to store data
- Simple text-based user interface

PROGRAM FLOW

- Display main menu
- Get user input

Perform selected action:

- Add student
- View students
- Save and exit

Repeat until exited

CODE

01

- main.cpp – Handles menu and user interaction

02

- student.h – Declares the Student class

STRUCTURE

01

- student.cpp – Implements class methods

02

- student_data.txt – Stores persistent data

DATA STRUCTURES

- std::vector<Student> to store student objects
- std::string for name input
- std::ofstream / std::ifstream for file I/O
- Basic error checking

LONG-TERM DATA STORAGE

01

- Uses student_data.txt to save student info
-

02

Each line stores: ID, Name, GPA

03

On next run, data can be read back (optional extension)

SAMPLE OUTPUT

```
===== Student Record System =====
1. Add Student
2. View Students
3. Save and Exit
Choice:
```

PROGRAM DEMO HIGHLIGHTS

EXPENSE PROJECTIONS

Add a student with name, ID, and GPA

View a formatted list of all added students

Save records to file for long-term access

Clean, menu-driven flow with validation

THANK YOU

Reflection & Takeaways

Reinforced my understanding of classes, objects, and file I/O

Learned how to structure C++ code using multiple files

Gained experience compiling and debugging with Xcode & Terminal

Proud of finishing a full program from idea to execution