



: 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
-

- 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

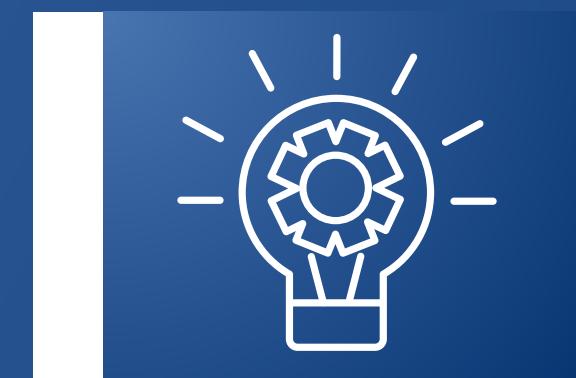
- Add Student (ID, Name, GPA)
- View all entered students
- Save to student_data.txt
- Uses vector to store data
- Simple text-based user interface



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

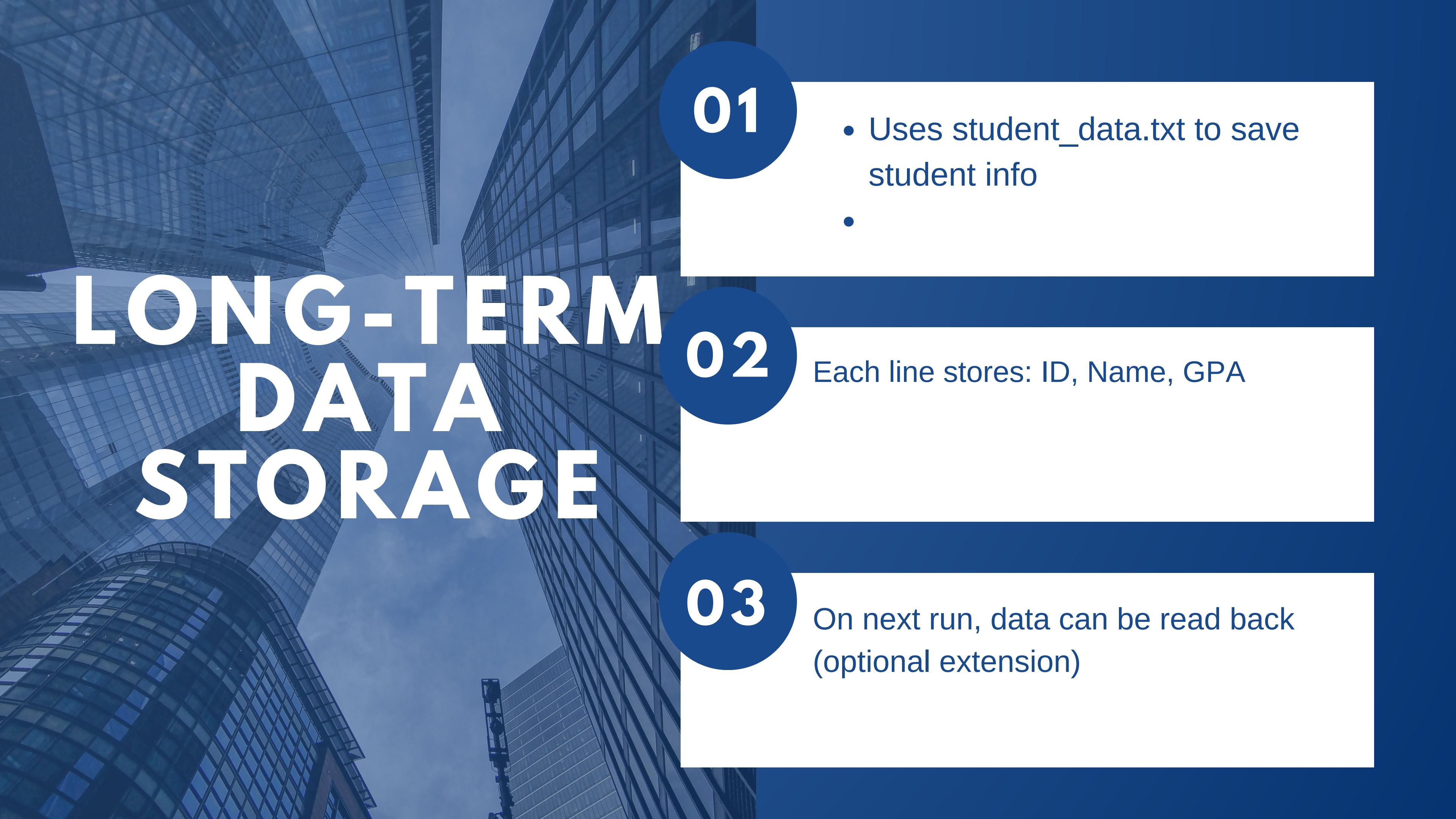
- student.cpp – Implements class methods

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