

Proposed Solution Report: Implementing File Handling in the Student Portal

Objective:

The current Student Portal project manages student data in memory, which leads to data loss once the program exits. The proposed solution is to integrate **file handling** to persist student records, ensuring that the information is stored and can be retrieved even after restarting the program.

Problem Statement:

At present, all student data are temporarily stored during runtime. However, once the program ends, all this data is lost. The solution lies in implementing **file handling** to save and load student records from files, maintaining persistent data across program sessions.

Proposed Solution:

The system will be enhanced with the following features:

1. Saving Data to Files:-

- When a student registers or updates their information, the program will write the data to a file (a text or binary file).
- Each student's data will be stored in a structured format for easy reading and updating.

2. Loading Data from Files:

- Upon starting the program, the student portal will read the data from the file to restore the student records into the system.
- This will allow students to log in, view, and update their information without losing any details between sessions.

3. File Formats:

- Text Files: Simple text-based storage can be used for easy readability.
- Binary Files: For more efficient storage, especially for large datasets, binary files can be used.

4. Data Integrity:

- Implementing file handling will ensure that student data remains safe even in the event of unexpected shutdowns or crashes, as the data will be backed up on the file system

Conclusion:

By integrating file handling, the Student Portal will transition from a volatile in-memory solution to a robust, persistent system. This will not only enhance data management but also improve the overall user experience by ensuring that important student information is retained and accessible at all times. This enhancement is crucial for a fully functional and scalable student management system.