MeruLite School Management System - README Summary

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Course:	Data Structures and Algorithms
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Institution:	Meru University of Science and Technology
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Overview
The MeruLite School Management System is a modular prototype developed to demonstrate the use of core data structures in solving real-world academic management problems. It provides functionalities for student registration, course scheduling, fee tracking, library management, and performance analytics, implemented in C++ as part of the Data Structures and Algorithms coursework.

Data Structures Used
• Student Registry — Hash Table (unordered_map)
• Course Scheduling — Circular Queue
• Fee Tracking — AVL Tree (Balanced Binary Search Tree)
• Library System — Stack and Hash Map
• Performance Analytics — Matrix and Max Heap

How to Compile and Run
1. Save the file **sms_system.cpp** to your computer.
2. Open a terminal or command prompt in the same directory.
3. Compile using:
g++ -std=c++17 sms_system.cpp -o merulite_sms
4. Run the program using:
./merulite_sms
5. Use the on-screen menu to explore modules like registration, library, and analytics.

Included Files for Submission
• **sms_system.cpp** – Source code for the School Management System.
• **MeruLite_School_Management_System_Report.pdf** – System design, performance analysis, and ethical reflection.
• **MeruLite_School_Management_System_Code.pdf** – Formatted source code (appendix).
• **MeruLite_School_Management_System_README.pdf** – This summary document.

Conclusion
This README document summarizes the full project submission for the Data Structures Group Assignment. All files together represent a complete and functional system, ready for upload to GitHub as required by the instructor.