Student Management System using MongoDB

In this project, I developed a full-stack web application using **Node.js**, **Express**, **EJS**, and **MongoDB** to perform CRUD operations on student records. The core objective of this application was to demonstrate the **schema-less and flexible nature of MongoDB**, a NoSQL database, by allowing dynamic and nested data structures within a single collection. The application allows users to add, update, view, and delete student details, including name, roll number, category (Hosteller or Dayscholar), and optional nested fields like parent address and mobile number for Dayscholars. The schema design itself showcases MongoDB’s capability to store **partially structured documents** — for example, Hosteller entries may omit the parentInfo object, while Dayscholar entries dynamically include this nested data without needing any rigid schema enforcement. This proves MongoDB’s support for **unstructured or semi-structured data**, making it suitable for applications where data models evolve frequently. I used a dynamic EJS frontend to present data in a tabular form and allowed inline editing and deletion of student records, reinforcing a real-time CRUD experience. Overall, this project highlights how MongoDB enables flexible data modeling and simplifies backend logic for evolving application requirements compared to traditional relational databases.

Output:

