

FAST Point Management System - Project Report

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1. Introduction

The FAST Point Management System is a project designed to manage student and faculty transportation services within the university. The system assumes an academic database containing registered student roll numbers and passwords. Since there is no actual database connectivity, these credentials are initialized at the start of the project.

Upon registration, students receive a unique registration code assigned by the management, either manually or via OTP. The project currently supports student batches from 2019 to 2022 and extends the service to faculty and staff using employee IDs instead of roll numbers. The project is incomplete, with faculty registration and additional features yet to be implemented.

2. System Components

2.1 User Authentication and Registration

- **Students:**
 - The system assumes that student roll numbers and passwords are already stored in the university's database.
 - At project initialization, predefined roll numbers and passwords are loaded into the system.
 - Upon registration, a registration code is assigned (either manually or via OTP, assuming future connectivity).
- **Faculty and Staff:**
 - Faculty and staff do not use roll numbers; instead, they authenticate using employee IDs.
 - The system lacks a faculty registration feature, making it an incomplete aspect of the project.

2.2 Route Management

- The project includes predefined point routes.
- Routes are currently limited but can be expanded or edited in the future.

2.3 C File Handling as Database

- The project utilizes C file handling as a storage mechanism.
- A file named `registered.txt` is used to store registered users.
- File operations include reading, writing, and updating student/faculty records.

2.4 Functional Breakdown

Component	Functionality
User Initialization	Preloads student roll numbers, passwords, and registration codes.
User Registration	Assigns registration codes upon student sign-up (manual/OTP-based).
Login System	Authenticates users based on preloaded credentials.
Route Management	Stores predefined routes, allowing future modifications.
Faculty & Staff Handling	Uses employee IDs for authentication; lacks registration functionality.
File Handling (C-based Database)	Stores registered users and their details in <code>registered.txt</code> .

3. Limitations and Future Enhancements

- **Faculty Registration:** Currently missing but can be implemented to allow faculty to register.
 - **Database Connectivity:** Instead of C file handling, integrating an actual database would enhance scalability.
 - **OTP Integration:** The system assumes OTP-based registration but lacks actual implementation.
 - **Expanded Routes:** Adding a user interface for route modifications would improve flexibility.
 - **Batch Expansion:** The current implementation supports only four batches (2019-2022); it should be extended for future enrollments.
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4. Conclusion

The FAST Point Management System serves as a foundation for a transportation management system within the university. It efficiently handles student authentication and predefined routes but requires enhancements in faculty registration, database connectivity, and route management. Future iterations should focus on expanding these features to improve functionality and usability.
