



CSE115

Fall 2019

Project Report: Railway Management System Using C Programming Language

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Date : 27 December 2019

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1. Introduction

The **Railway Management System** is a console-based application that allows users to manage a simple train management system. The project is developed using C programming language and incorporates basic file handling, array usage, and structured data manipulation. This project helps users manage train information such as train names, departure times, destinations, and codes.

2. Objectives

The main objectives of this project are:

- To design a user-friendly railway management system.
- To learn and implement the concepts of structures, file handling, and array management in C programming.
- To build a simple system that can store, edit, view, and delete train information.
- To enhance the understanding of C programming concepts such as switch-case, loops, and functions.

3. Features and Functionalities

The Railway Management System includes the following features:

1. **Add Train Information:** Allows the user to add details of multiple trains.
2. **View Train Information:** Displays the stored train details.
3. **Edit Train Information:** Enables editing the information of existing trains.
4. **Save Information:** Saves the train details to a file for future access.
5. **Read from File:** Retrieves and displays saved train information from the file.
6. **Delete Train Information:** Allows deletion of specific train information.
7. **Exit the Program:** Exits the application.

4. Code Structure

The project is structured using various functions, each designed to handle a specific task. Below is a brief overview of the structure:

1. **Main Function:**
 - Displays the welcome screen and login prompt.
 - Calls the **menu** function based on the login verification.
2. **Menu Function:**
 - Provides options to add, view, edit, save, delete, and exit the system.
3. **Add Train:**
 - Prompts the user to input train details like name, time, destination, and code.
4. **View Train:**
 - Displays the stored train information based on user input.
5. **Edit Train:**
 - Allows the user to modify the train information.

6. **Delete Train:**

- Removes a specific train's details from the stored list.

7. **Save to File:**

- Stores train information in a text file.

8. **Read from File:**

- Loads previously stored train information from the file.

5. Explanation of the Functions

a) **main()**

- Displays the welcome message and prompts the user to enter a password.
Once the password is matched, the user is redirected to the **menu**.

b) **menu()**

- Provides the user with several options such as adding, viewing, editing, deleting, saving, and reading train data. The user can choose an option by entering the corresponding number.

c) **add_train()**

- Allows the user to add train details. The information includes the train's name, time, destination, and code.

d) **show()**

- Displays the information of all the trains that have been stored in the system.
The number of trains to be displayed is determined by the user.

e) **edit()**

- Allows the user to modify the details of a specific train. The user can choose to edit the train's name, time, destination, or code.

f) `del_train()`

- Deletes the information of a specific train, based on the user's input.

g) `write()`

- Saves all the train details into a file named "train.txt" for future reference.

h) `read()`

- Reads the train information from the file and loads it into the program.

i) `fordelay()`

- Introduces a slight delay during operations for a better user experience.

6. Conclusion

This project successfully demonstrates the implementation of a simple **Railway Management System** using the C programming language. The project has helped in understanding key programming concepts, including file handling, structures, arrays, and functions. This system, while basic, lays the foundation for more complex management systems that can be expanded further to include additional features such as ticket booking and schedule management.

Future Improvements:

- Enhancing the system to handle more trains.
- Adding a graphical user interface (GUI) for better user interaction.
- Including more functionalities like booking, ticketing, and scheduling.