

Room Allocator Documentation

Overview

The `roomAllocator.js` script is designed to allocate hostel rooms to student groups based on their gender and the number of members in each group. This script ensures that groups are allocated to rooms that can accommodate all their members, keeping groups together whenever possible. Specifically, it demonstrates how to allocate Group 104 (5 Girls) to a suitable room.

Script Logic

`allocateRooms` Function

1. **Data Preparation:**
 - Parses and sorts the group data and hostel data.
2. **Allocation Loop:**
 - Iterates over each group.
 - Checks if the group ID is 104 and if it contains girls.
 - Calls the `allocateGroup` function to allocate the group to a suitable room.
 - Exits after finding the desired allocation for Group 104.

`parseGender` Function

- Splits the gender string into boys and girls counts.
- Returns an array containing the number of boys and girls.

`allocateGroup` Function

- Filters and sorts rooms by capacity in descending order.
- Allocates the group to the first available room that can accommodate all members.
- Updates the room's available capacity.

Instructions to Run the Application

1. **Ensure Node.js is Installed:** Make sure you have Node.js installed on your machine. You can download and install it from [Node.js official website](https://nodejs.org/en/).
2. **Set Up the Project Directory:**
 - Create a new directory for your project.
 - Inside the directory, create a file named `roomAllocator.js`.
 - Copy and paste the script code provided below into `roomAllocator.js`.
3. **Create Example Data Files:**
 - Create two CSV files named `groupData.csv` and `hostelData.csv` with the example data provided above.
4. **Run the Script:**
 - Create a file named `main.js` in the same directory.
 - Use the following code in `main.js` to read the CSV files and call the `allocateRooms` function.