**PROGRAM STRUCTURE**

1. Guests can search for rooms and book them based on availability.
2. Admins can check each room’s availability, assign guests to a room, and remove occupants from a room.

**DATA SETS**

1. **Rooms:**

* Room id
* Room type
* Room price
* Room capacity
* Occupancy status (Yes or No)
* Occupant Number
* Occupants

1. **Guest List (Occupants):**

* Guest ID
* Guest name
* Guest Contact
* Room ID
* Status (Resident or Non-resident)

1. **Guest Waiting list (Not admitted):**

Same as occupants (- room)

**CLASSES**

1. **Guest**:

* Data members:

- name

- contact info (phone number)

- guest id

- isResident: Boolean value to check if a guest is a resident

* Member functions:

- Guest (Constructor): User’s details are entered into the program and stored in the .csv file.

- getDetails: Getter function to display user details.

1. **Admin**:

* Data members:

-<none>

* Member functions:

- checkRoom(room id) : Check through the .csv file and check if a particular room is occupied.

- bookRoom(room id, guest id) : Assign a user to the given room. It will be in the room’s .csv file.

- showAllRooms

- addOccupant(guest id, room id)

- removeOccupant(guest id, room id)

1. **Room :**

* Data members:

- room\_id

- room\_type

- room price

- room capacity

- isOccupied : Boolean value to check if a room is occupied

- occupants <guest ids> : A vector to store the ids of the occupants of a room

* Member functions:

- Room(Constructor) : Creates a room with details.

- occupancy\_status: Check if a room is occupied or not.

?-availability\_status: Check if a room is available (not full). Possibly could merge with `occupancy\_status`

- getData: Get information about the room (id, type, occupants, status,etc.).

1. **Hotel**:

* Data members:

- name : string

- room\_count : int

- guests\_admitted : int

- capacity: int

- free\_rooms: int

* Member functions:

- addRoom(room id) : add a room to the .csv file and increment room count

- removeRoom(room id): remove a room and decrement count.

- bookRoom(room id): remove a room from the free room data set and decrement the free room count

- searchRoom(room id): search for a particular room and display details.

- admitGuest(guest id): register a guest to the waiting list.

- removeGuest(guest id): remove a guest from the waiting list once they find a room or leave the waiting list.