

# EAD CA2 PROJECT

## IMEET - C & S FACILITIES MANAGEMENT

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### PROJECT AIM AND SCOPE

C&S Facilities Management provide meeting room booking services to client companies. They require a web service to manage meeting rooms and room bookings.

System admin can create, update, delete meeting room data.

Users can view the characteristics of the available rooms e.g.. size, location, equipment.

Users can book a room within available time slots e.g. Mon – Fri, 8.00-18.00

Users can cancel or update their booking.

Users can view their future bookings.

### GITHUB LINKS

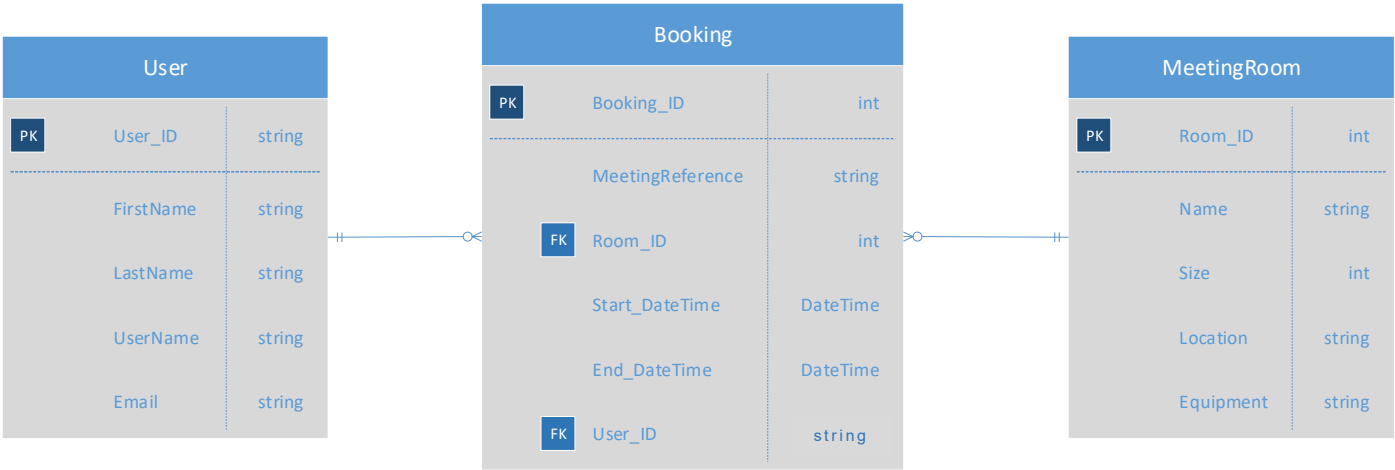
GitHub was used to manage the project and its source code. The links to the source code in GitHub are as follows:

- For the main MVC project: <https://github.com/suejones/EADCA2>
- For the Console Client Application: <https://github.com/suejones/EADCA2ConsoleClient>

## PROJECT SCHEDULE

[illegible]

# DATABASE DESIGN



For the User table, the project actually leveraged the tables that come for free with ASP.NET Identity: `AspNetUsers` (where `firstname` and `lastname` fields were added), `AspNetRoles` (where an 'admin' role was created), `AspNetUserRoles` (where the `Id` of a user can be associated with the `Id` of the role).

## URI ADDRESSING SCHEME

URI Addressing Scheme		
Action Type	Route	Purpose
GET	<a href="http://imeet.azurewebsites.net">http://imeet.azurewebsites.net</a> or <a href="http://imeet.azurewebsites.net/Home/">http://imeet.azurewebsites.net/Home/</a>	Access the Home page
GET	<a href="http://imeet.azurewebsites.net/Home/About">http://imeet.azurewebsites.net/Home/About</a>	Access the About page
GET	<a href="http://imeet.azurewebsites.net/MeetingRooms">http://imeet.azurewebsites.net/MeetingRooms</a>	View all Meeting Rooms
GET	<a href="http://imeet.azurewebsites.net/MeetingRooms?sortOrder=name_desc">http://imeet.azurewebsites.net/MeetingRooms?sortOrder=name_desc</a>	View all Meeting Rooms sorted by name descending
GET	<a href="http://imeet.azurewebsites.net/MeetingRooms?sortOrder=Size">http://imeet.azurewebsites.net/MeetingRooms?sortOrder=Size</a> or <a href="http://imeet.azurewebsites.net/MeetingRooms?sortOrder=size_desc">http://imeet.azurewebsites.net/MeetingRooms?sortOrder=size_desc</a>	View all Meeting Rooms sorted by size (ascending or descending)
GET	<a href="http://imeet.azurewebsites.net/MeetingRooms/Details?keyword=Board%20Room">http://imeet.azurewebsites.net/MeetingRooms/Details?keyword=Board%20Room</a>	View details of Meeting Rooms with containing certain keyword
GET	<a href="http://imeet.azurewebsites.net/MeetingRooms/Create">http://imeet.azurewebsites.net/MeetingRooms/Create</a>	A: Create Meeting Room GET
POST	<a href="http://imeet.azurewebsites.net/MeetingRooms/Create">http://imeet.azurewebsites.net/MeetingRooms/Create</a>	B: Create Meeting Room POST
GET	<a href="http://imeet.azurewebsites.net/MeetingRooms/Edit/5">http://imeet.azurewebsites.net/MeetingRooms/Edit/5</a>	A: Edit/Change Meeting Room data GET with identifier 5
POST	<a href="http://imeet.azurewebsites.net/MeetingRooms/Edit/5">http://imeet.azurewebsites.net/MeetingRooms/Edit/5</a>	B: Edit/Change Meeting Room data POST with identifier 5
GET	<a href="http://imeet.azurewebsites.net/MeetingRooms/Delete/5">http://imeet.azurewebsites.net/MeetingRooms/Delete/5</a>	A: View details of meeting room to delete for confirmation
DELETE	<a href="http://imeet.azurewebsites.net/MeetingRooms/Delete/5">http://imeet.azurewebsites.net/MeetingRooms/Delete/5</a>	B: Delete Meeting Room with identifier 5
GET	<a href="http://imeet.azurewebsites.net/Booking/Index">http://imeet.azurewebsites.net/Booking/Index</a> or <a href="http://imeet.azurewebsites.net/Booking">http://imeet.azurewebsites.net/Booking</a>	View all bookings if admin user or view own bookings if regular users
GET	<a href="http://imeet.azurewebsites.net/Booking/Create">http://imeet.azurewebsites.net/Booking/Create</a>	A: Find available rooms at a specific date and times
POST	<a href="http://imeet.azurewebsites.net/Booking/CreateStep2">http://imeet.azurewebsites.net/Booking/CreateStep2</a>	B: Input booking title and select a room (POST view model)
POST	<a href="http://imeet.azurewebsites.net/Booking/CreatePost">http://imeet.azurewebsites.net/Booking/CreatePost</a>	C: Create Booking POST
GET	<a href="http://imeet.azurewebsites.net/Booking/Edit/5">http://imeet.azurewebsites.net/Booking/Edit/5</a>	A: Edit Booking data with identifier 5 (GET)
POST	<a href="http://imeet.azurewebsites.net/Booking/Edit/5">http://imeet.azurewebsites.net/Booking/Edit/5</a>	B: Edit Booking data with identifier 5 (POST)
GET	<a href="http://imeet.azurewebsites.net/Booking/Delete/5">http://imeet.azurewebsites.net/Booking/Delete/5</a>	A: View details of booking with identifier 5 for confirmation to delete
DELETE	<a href="http://imeet.azurewebsites.net/Booking/Edit/Delete/5">http://imeet.azurewebsites.net/Booking/Edit/Delete/5</a>	B: Delete Booking with identifier 5
GET	<a href="http://imeet.azurewebsites.net/booking/GetAvailableRooms?date=20180609000000&amp;startTime=20180609090001&amp;endTime=20180609100000">http://imeet.azurewebsites.net/booking/GetAvailableRooms?date=20180609000000&amp;startTime=20180609090001&amp;endTime=20180609100000</a>	Get in Json format a list of meeting rooms available at specific date and times

## TEST DATA

Room Name	Location	Size	Equipment
North Wall	One Spencer Dock	20	<b>Wi-Fi Projector VC WB</b>
Royal Canal		18	Wi-Fi Projector VC WB
Grand Canal		8	<b>Wi-Fi VC WB</b>
River Liffey		4	<b>Wi-Fi Conf Phone</b>
Guild Street	Two Spencer Dock	Theatre 50	<b>Wi-Fi Projector</b>
Sheriff Street		Square 12	Wi-Fi Conf Phone WB
Point Village		U-Shape 24	Wi-Fi Projector VC WB

UserID	Meeting Ref	Room Name	Day / Date	StartTime	EndTime
Jane Smith PWC	PWC May Board Meeting	North Wall	Tuesday, 15/5/18	9.00	17.00
Paul Dunne Point	Point Management meeting	Sheriff Street	Monday, 14/5/18	15.00	17.00
Ben Jones RG5	RG5 Weekly Sales Meeting	Point Village	Friday, 18/5/18	11.00	14.00
Michelle Ryan PWC	PWC Staff Briefing	Guild Street	Wednesday, 16/5/18	9.00	15.00
Jane Smith PWC	PWC Michael O'Neill	River Liffey	Tuesday, 15/5/18	15.00	16.00
Shane Kelly Point	Point Events Review	Grand Canal	Wednesday, 16/5/18	9.00	17.00
Mark Duggan Gibson	Gibson Client x569 booking	Guild Street	Thursday, 17/5/18	10.00	18.00
Jane Smith PWC	PWC Audit Partner Induction	Grand Canal	Monday, 14/5/18	10.00	15.00
Mark Duggan Gibson	Gibson Client x453 booking	Sheriff Street	Thursday, 17/5/18	13.00	18.00
Shane Kelly Point	Point Strategy Review	Royal Canal	Friday, 18/5/18	14.00	18.00

## USER TESTING

User Testing			
Test	Expected Outcome	Actual Outcome	
		Pass	Fail
System Admin Tests			
Test logons: Email: <a href="mailto:s.admin@gmail.com">s.admin@gmail.com</a> / Password: Admin88!			
Register with first name and last name	Register successfully (Note: add manually to Admin role in table)	Register successfully	
Login	Login successfully	Login successfully. Register changes to “Welcome Lilla Fog” Logon changes to Logoff.	
Read Meeting Room - verify data	Can access & view Meeting Room tab	Can view all rooms for all users	
Create Meeting Rooms	Cannot create if another room with same name exists  Can create meeting room if name doesn’t already exists	Cannot create a meeting room of the same name. Error Message: “A meeting room with the same name already exists” Can create meeting room if name doesn’t already exists	
Update Meeting Room - change data and check data update	Cannot update if another meeting room has the same name Can update meeting room to another name not already taken	Cannot update a meeting room of the same name. Error Message: “A meeting room with the same name already exists” Can update meeting room to another name not already taken	
Delete Meeting Room - delete Meeting Room and check data update	Cannot delete if a meeting is happening in that room in the future  Can delete a room if no future booking	Cannot delete if a meeting is happening in that room in the future Error Message: “This meeting room cannot be deleted as it has been booked for future meetings” Can delete a room if no future booking	
View all future bookings for all users	Can view all future bookings for all users	Can view all future bookings for all users	
View meeting rooms details	Can view all meeting room details	Can view all meeting room details	
Find room for booking	Only if date in future + on weekdays + from 8am to 6pm	Find available rooms Error Message displayed if picked date in the future or on a weekend Drop-down only give option to book from 8am to 6pm	
Book a room	Only if not already booked	Will only offer un-booked rooms so cannot book already booked room	
Update a booking for any user	Admin can see and update any user bookings	Admin can see and update any user bookings	
Delete a booking for any user	Admin can delete other user bookings	Admin can delete other user bookings	
Logoff User	User Logoff	User Logged off. Welcome user name changes to Register & Logoff changes to Logon	

Standard User Tests		
Test logons: Email: <a href="mailto:s.user@gmail.com">s.user@gmail.com</a> / Password: User18!		
Access Home page unlogged	Access Home page unlogged	Home page can be accessed by unregistered users
Access About page unlogged	Access About page unlogged	About page can be accessed by unregistered users
Register	Register with first name and last name	Successful registration - username is set to first name + last name
Login	Login Successfully	Hello Sue Jones! message
View all meeting rooms	Users can see a list of all meetings rooms	Users can see a list of all meetings rooms
Search for a meeting room by name	After typing a keyword in the search box, only rooms containing that name are returned	After typing a keyword in the search box, only rooms containing that name are returned
Order meeting room list by name and size	Click on Name or Size Columns to sort a-z or numerically (ascending and descending)	Click on Name or Size Columns to sort a-z or numerically (ascending and descending)
Cannot create, edit or delete a meeting room	User cannot create, edit or delete a meeting room	User cannot create, edit or delete a meeting room – options cannot be seen
View only own future bookings	User can only see their own future bookings	User can only see their own future bookings
View meeting room details on booking	User can click on a meeting room name from the list of bookings to get the room details	Can click on Room Name to see further room details on size, location, etc
Book a room that's free	User will be brought to a 'find meeting room' screen. Only free rooms offered for booking. Can select required room from drop down if room not booked.	User will be brought to a 'find meeting room' screen. Only free rooms offered for booking. Can select required room from drop down if room not booked.
Search for room at same date and times as above, room list should display all rooms except the one booked above	User is not offered already booked room from above	User is not offered already booked room from above
Get an error if trying to book a room at weekend	Error message: Meetings cannot happen at the weekend. Please pick another date.	Error message: Meetings cannot happen at the weekend. Please pick another date.
Try to book Grand Canal meeting room on 15/5/18 from 11.00-15.00	Error message: This room is not available for booking as already booked	Error message: This room is not available for booking as already booked
Try to book a room with an invalid user id	Error message: Invalid logon attempt but a new user can register a new logon	Error message: Invalid logon attempt but a new user can register a new logon
Try to book a room with incomplete or incorrect data	Get errors if invalid dates and times	Error Message displayed if picked date in the future or on a weekend or if end time is before start time or equal to it.

Edit a Booking	Only if own booking and at valid dates and times and if room is free	User can only edit own bookings for future dates. Error message if selected room is not free.
Cancel a Booking	Only if own booking	User can only delete own bookings for future dates
Logoff	Log off successfully	User Logged off. Welcome user name changes to Register & Logoff changes to Logon

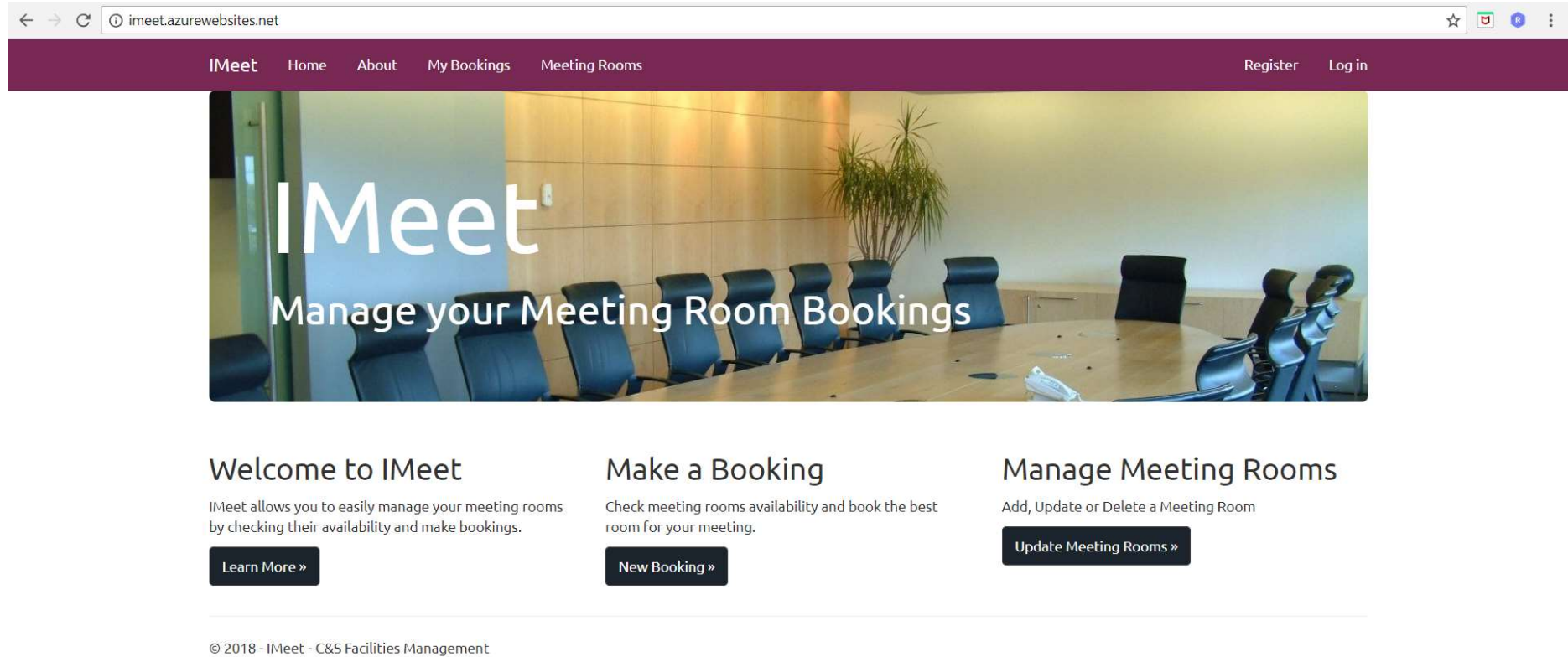


## UNIT TESTING RESULTS

Test Explorer		
[Icons] Search		
Run All   Run...   Playlist: All Tests		
▲ Passed Tests (9)		
✔ About		166 ms
✔ CreateRoom_ShouldFailIfNameAlreadyTaken		86 ms
✔ CreateRoomTest		2 sec
✔ CreateTest_ShouldFailIfInvalidTimes		51 ms
✔ Delete_ShouldFail_WhenIncorrectID		57 sec
✔ Delete_ShouldFail_WhenNullID		2 ms
✔ DetailsTest		6 ms
✔ Index		1 ms
✔ IndexTestNameLike		875 ms

## SCREENSHOTS

### Initial / Home Screen



## About Screen / Welcome to IMeet – Learn More



### About IMeet

IMeet is a Web Application to manage Meeting Rooms and Bookings.

**IMeet** has been developed as part of CA2 Project for the Enterprise Application Development course (Higher Diploma in Science in Computing) at the Institute of Technology Tallaght. It was designed and implemented by Suzanne Jones (X00142131) and Carole van Damme (X00142179).

IMeet aims to allow users to book available meeting rooms for a meeting. System administrators are responsible for creating, updating or removing meeting rooms.

Further documentation on this project can be found at this [GitHub Link](#).

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## New User Registration

Register - IMeet

Not secure | imeet.azurewebsites.net/Account/Register

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IMeet

Home

About

My Bookings

Meeting Rooms

Register

Log in

# Register.

Create a new account.

First Name

Last Name

Email

Password

Confirm password

Register

## User Logon



### Log in.

Use a local account to log in.

Email

Password

☐

Remember me?

Log in

[Register as a new user](#)



**My Bookings / View Future Bookings Screen - Can Create Booking / Edit / Cancel Room Booking from here**

***Below view is as an admin who can see bookings for all users.***

imeet.azurewebsites.net/Booking

☆

IMeetHomeAboutMy BookingsMeeting RoomsHello Carole Admin!Log off

## Your Future Bookings

Create New Booking

Meeting Title	Date	Timeslot	Room Name	Meeting Owner	
Weekly Meeting	23/05/2018	8:00 AM – 3:00 PM	Grand Canal	Sue Admin	Edit   Cancel
HR Interview	24/05/2018	2:00 PM – 5:00 PM	Grand Canal	Sue Admin	Edit   Cancel
Interview John Smith	15/06/2018	2:00 PM – 3:00 PM	Interview Room	Sue Admin	Edit   Cancel
New Product Presentation	23/07/2018	10:00 AM – 11:00 AM	River Liffey	Adam Smith	Edit   Cancel

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**View Meeting Room Details from clicking on Meeting Room Name**

## Meeting Room Details

**Room Name** Grand Canal  
**Size** 4  
**Location** Two Spencer Dock  
**Equipment** Wifi VC White Board

[Edit](#) | [Back to List](#)

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## Create New Booking

### Step1: Find Available Rooms

## Find Rooms for a New Booking

Date	<input type="text" value="28-May-2018"/>
Start Time	<input type="text" value="8:00 AM"/>
End Time	<input type="text" value="9:00 AM"/>
<input type="button" value="Find Room"/>	

[Back to List](#)

### Step 2: Complete Booking with Meeting Title and Room Selection

## Complete Booking

Meeting Title	<input type="text" value="Annual Review"/>
Date	28/05/2018
Start Time	8:00 AM
End Time	9:00 AM
RoomId	<input type="text" value="River Liffey"/>
See below for meeting room information.	
<input type="button" value="Create Meeting"/> <input type="button" value="Change Date/Times"/>	

## Available Meeting Rooms

Room Name	Size	Location	Equipment
Grand Canal	4	Two Spencer Dock	Wifi VC White Board
Interview Room	8	Second Floor	Phone, Laptop
River Liffey	20	One Spencer Dock	Wifi VC White Board
Royal Canal	50	Two Spencer Dock	Video Conference

[Back to List](#)

## Error Messages on Create Booking

### Error if date is a Saturday or Sunday

## Find Rooms for a New Booking

---

Date	<input type="text" value="22/07/2018"/>
Meetings cannot happen at the weekend. Please pick another date.	
Start Time	<input type="text" value="8:00 AM"/>
End Time	<input type="text" value="12:00 PM"/>
<input type="button" value="Find Room"/>	

### Error if date is in the past and if end time is before start time

## Find Rooms for a New Booking

- Please check start and end times. A meeting cannot end before it starts.

Date	<input type="text" value="23/04/2018"/>
The selected date must be in the future.	
Start Time	<input type="text" value="11:00 AM"/>
End Time	<input type="text" value="9:00 AM"/>
<input type="button" value="Find Room"/>	

## Edit a Booking – Error if user changes room to a room already booked

## Edit a Booking

- The selected room is not available at the selected date and times. Please try to make another booking.

Meeting Title	<input type="text" value="Team Update"/>
Date	<input type="text" value="23/07/2018"/>
Start Time	<input type="text" value="8:00 AM"/>
End Time	<input type="text" value="12:00 PM"/>
RoomId	<input type="text" value="Grand Canal"/>
<input type="button" value="Save"/>	



## Cancel a Booking

imeet.azurewebsites.net/Booking/Delete/16

IMEetHomeAboutMy BookingsMeeting RoomsHello Carole Damme!Log off

# Delete

Are you sure you want to delete this Booking?

Once you click delete, this action cannot be undone.

Room Name	Interview Room
Meeting Title	Team Update
Date	23/07/2018
Start Time	8:00 AM
End Time	12:00 PM
Meeting Owner	Carole Damme

DeleteBack to List

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## Error if standard user tries deleting another user's booking

imeet.azurewebsites.net/Booking/Delete/1

IMEetHomeAboutMy BookingsMeeting RoomsHello Carole Damme!Log off

# Error.

Oops, this booking doesn't seem to be yours, you cannot delete it.

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## View Meeting Rooms Screen

### Standard User View

← → ↻

imeet.azurewebsites.net/MeetingRooms

☆

IMeet

Home

About

My Bookings

Meeting Rooms

Hello Carole Damme!

Log off

## Meeting Rooms

Search Room Name

Search

Name	Size	Location	Equipment
Grand Canal	4	Two Spencer Dock	Wifi VC White Board
Interview Room	8	Second Floor	Phone, Laptop
River Liffey	20	One Spencer Dock	Wifi VC White Board
Royal Canal	50	Two Spencer Dock	Video Conference

### Admin View – Options to Add/Edit/Delete Meeting Rooms

← → ↻

imeet.azurewebsites.net/MeetingRooms

☆

IMeet

Home

About

My Bookings

Meeting Rooms

Hello Carole Admin!

Log off

## Meeting Rooms

[Add a New Meeting Room](#)

Search Room Name

Search

Name	Size	Location	Equipment	
Grand Canal	4	Two Spencer Dock	Wifi VC White Board	<a href="#">Edit</a>   <a href="#">Delete</a>
Interview Room	8	Second Floor	Phone, Laptop	<a href="#">Edit</a>   <a href="#">Delete</a>
River Liffey	20	One Spencer Dock	Wifi VC White Board	<a href="#">Edit</a>   <a href="#">Delete</a>
Royal Canal	50	Two Spencer Dock	Video Conference	<a href="#">Edit</a>   <a href="#">Delete</a>

## Add a new Meeting Room

[IMeet](#) [Home](#) [About](#) [My Bookings](#) [Meeting Rooms](#)

### Create a New Meeting Room

Room Name	<input type="text" value="Board Room"/>
Size	<input type="text" value="19"/>
Location	<input type="text" value="First Floor"/>
Equipment	<input type="text" value="Laptop, LED Screen, Video Conference"/>
	<input type="button" value="Create"/>

[Back to List](#)

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## Delete Meeting Room – Error if room holds future bookings

imeet.azurewebsites.net says

This meeting room cannot be deleted as it has been booked for future meetings.

OK

## Console Client Application

List of free meeting rooms on 09/06/2018 from 9am to 10am

Id: 3	Name: Grand Canal		
	Size: 4	Location: Two Spencer Dock	Equipment: Wifi VC White Board
Id: 1	Name: Interview Room		
	Size: 8	Location: Second Floor	Equipment: Phone, Laptop
Id: 2	Name: River Liffey		
	Size: 20	Location: One Spencer Dock	Equipment: Wifi VC White Board
Id: 4	Name: Royal Canal		
	Size: 50	Location: Two Spencer Dock	Equipment: Video Conference