

Term Project

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CS3773 - 001
Group 2

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Purpose of Project

Develop a software product that manages hotel reservations across a group of hotels of varying characteristics.

Objectives

Develop a software product with the following features:

- Create/Modify Users Information
- Create/Modify Hotel Properties (Admin)
- Create/Modify Reservation information (modify or cancel reservation/Users & Admin)
- Ability to search based on criteria (price/date range, amenities, room availability)
- Have an intuitive UI/UX design

Major Milestones

- Design:
 - Complete all UI/UX development tasks.
- Structural:
 - Complete all structural development tasks.
- Testing:
 - Complete all tests.
- Approval:
 - Client accepts product meets design specifications.

Deliverables

- a web application that meets all requirements in key objectives.

Scope exclusions

- Program does not read/write data from/to an external database.

Methodologies and Technologies Used

The following sections will discuss the technologies used (version control, programming languages, frameworks/libraries, and additional tools).

Programming languages

The project was made using the following programming languages. Percentages were taken from github.

Language	Use %
JavaScript	89.1%
CSS	9.0%
HTML	1.8%
TypeScript	0.1%

Frameworks/libraries

React

React is an open-source, front end, JavaScript library for building user interfaces or UI components. React was used to create UI elements such as navigation bar, search bar, and other components within the UI.

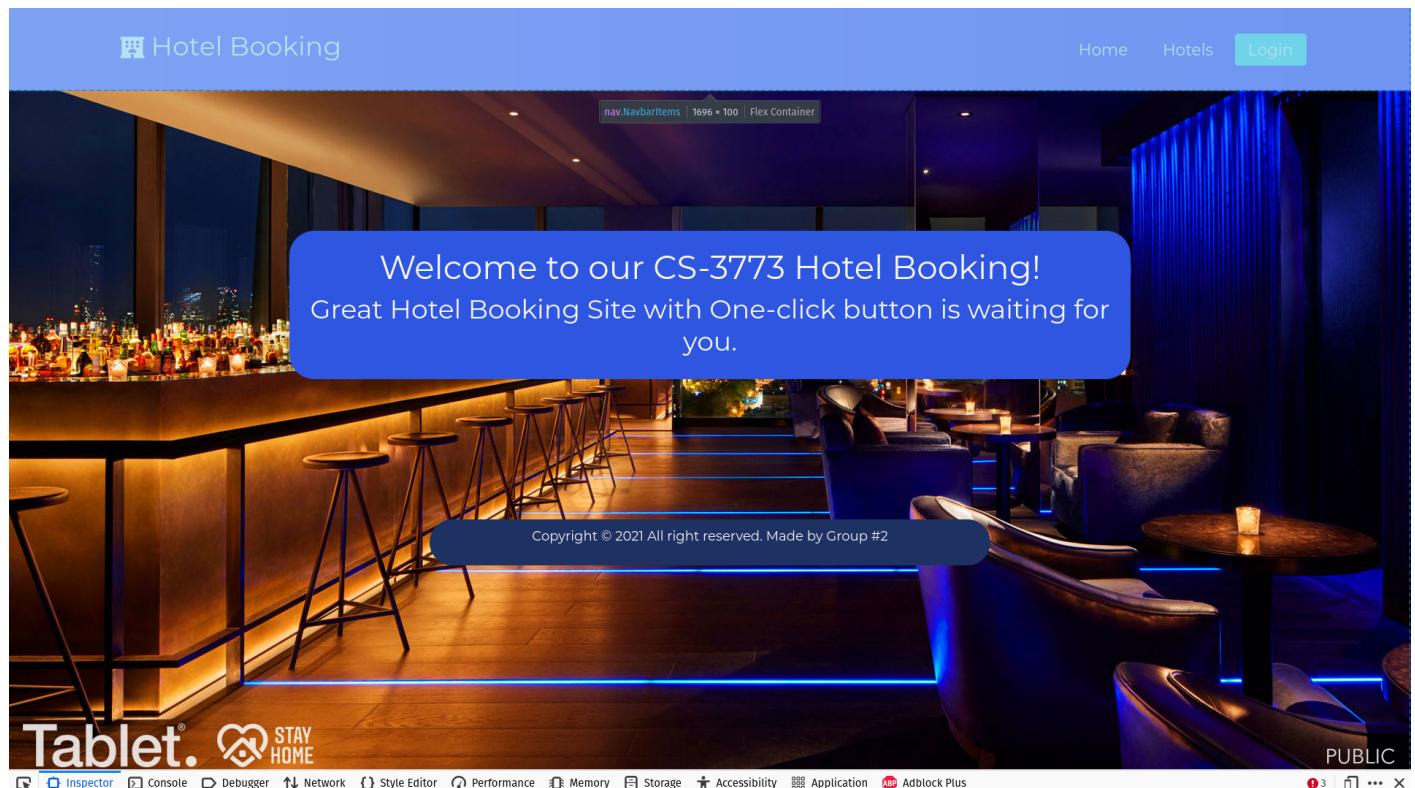


Figure 1: Navigation Bar

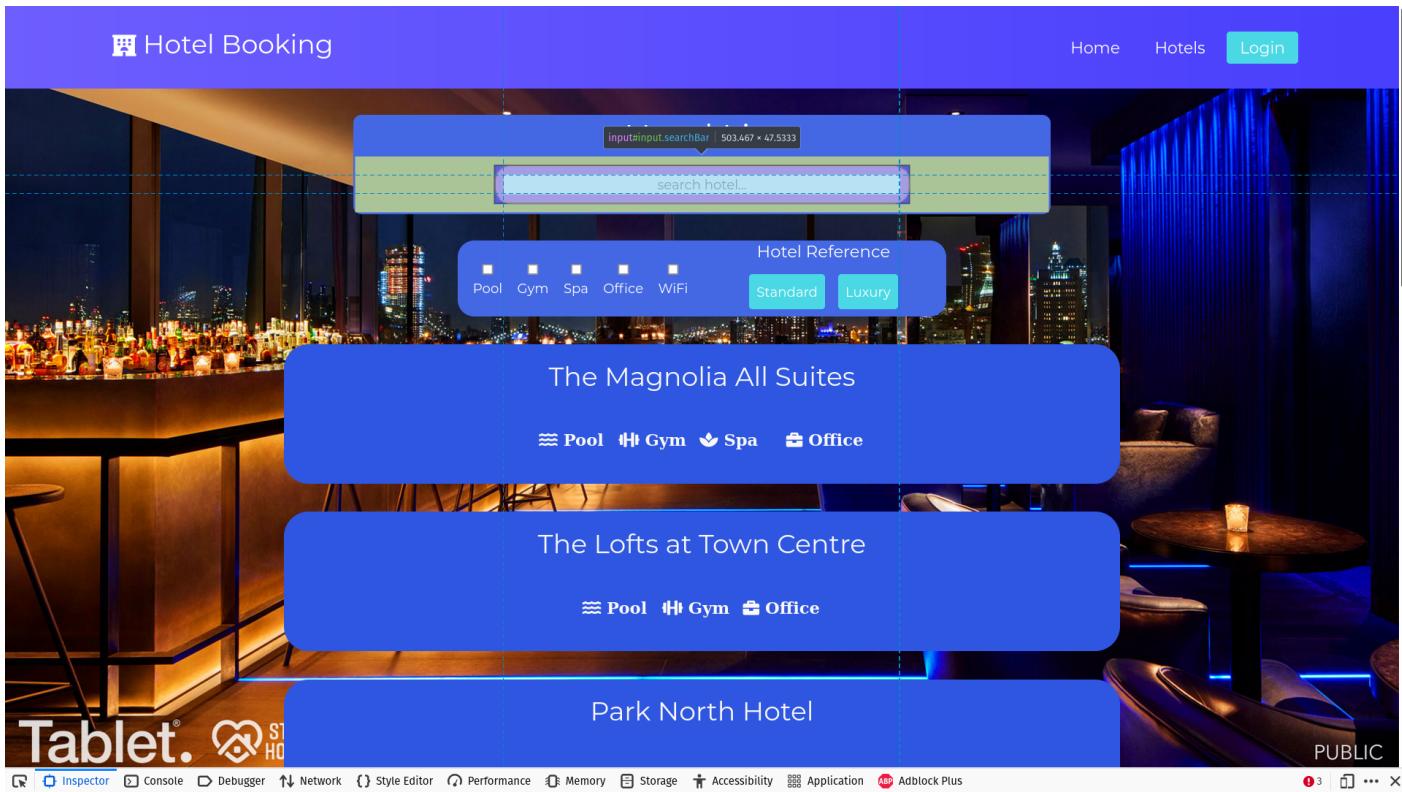


Figure 2: Search Bar

Nodejs

Node.js is an open-source, cross-platform, back-end JavaScript runtime environment that runs on the V8 engine and executes JavaScript code outside a web browser. Node.js lets developers use JavaScript to write command line tools and for server-side scripting—running scripts server-side to produce dynamic web page content before the page is sent to the user's web browser.

What follows are the significant node modules utilized in the project and a short description.

Node Modules	Description
<code>cors</code>	CORS is a node.js package for providing a Connect/Express middleware Connect is an extensible HTTP server framework for node used to handle requests
<code>react-router-dom</code>	React Router is a lightweight, fully-featured routing library for the React JavaScript library. React Router runs everywhere that React runs; on the web, on the server (using node.js), and on React Native.
<code>react-day-picker</code>	Flexible date picker component for React
<code>bcrypt</code>	A bcrypt library for Nodejs which helps hash passwords
<code>express</code>	A minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications.

Database

MariaDB is a community-developed, commercially supported fork of the MySQL relational database management system, intended to remain free and open-source software under the GNU General Public License. MariaDB was chosen for the project due to the aforementioned reasons.

Schema

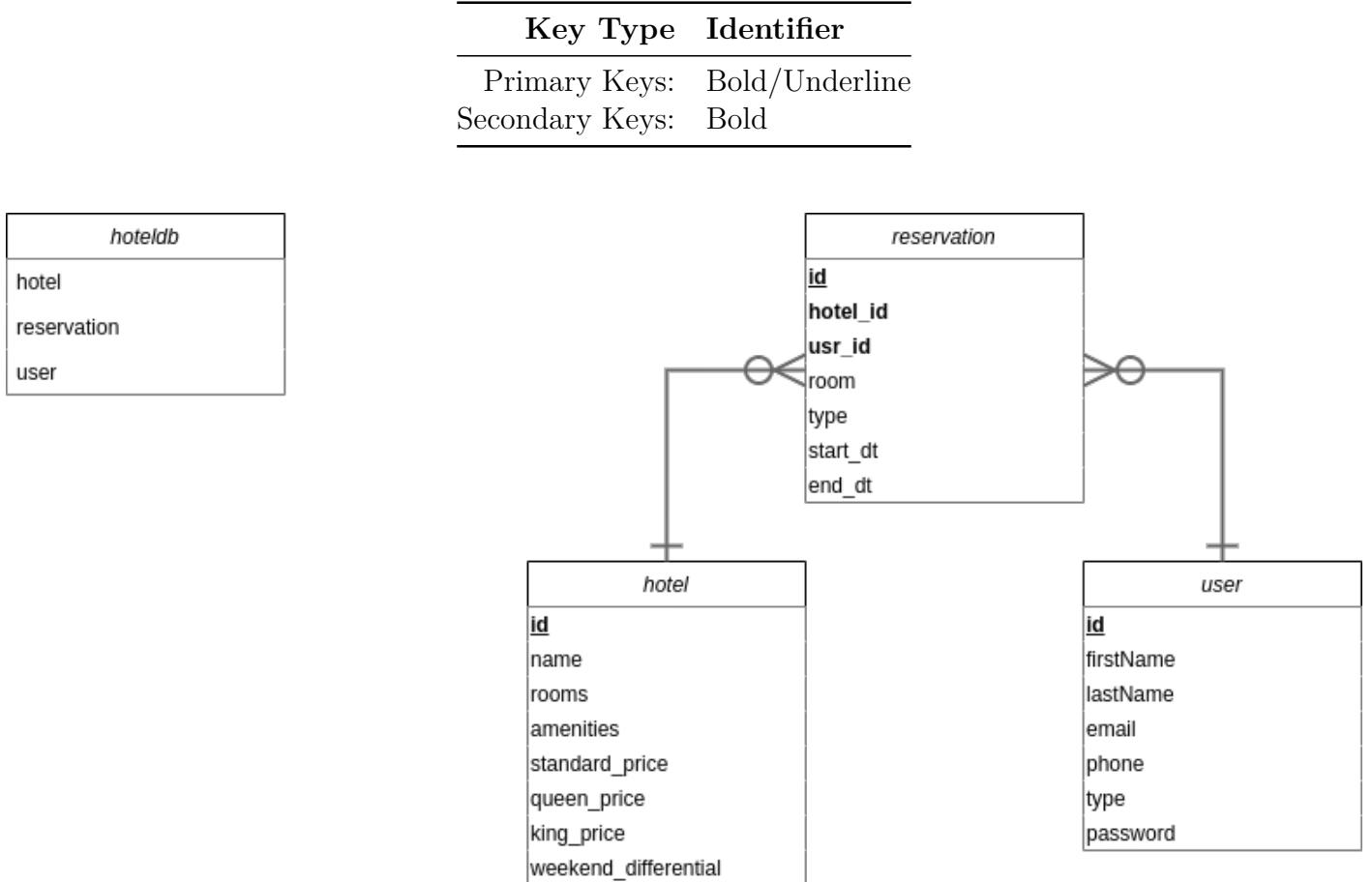


Figure 3: Database Relationships

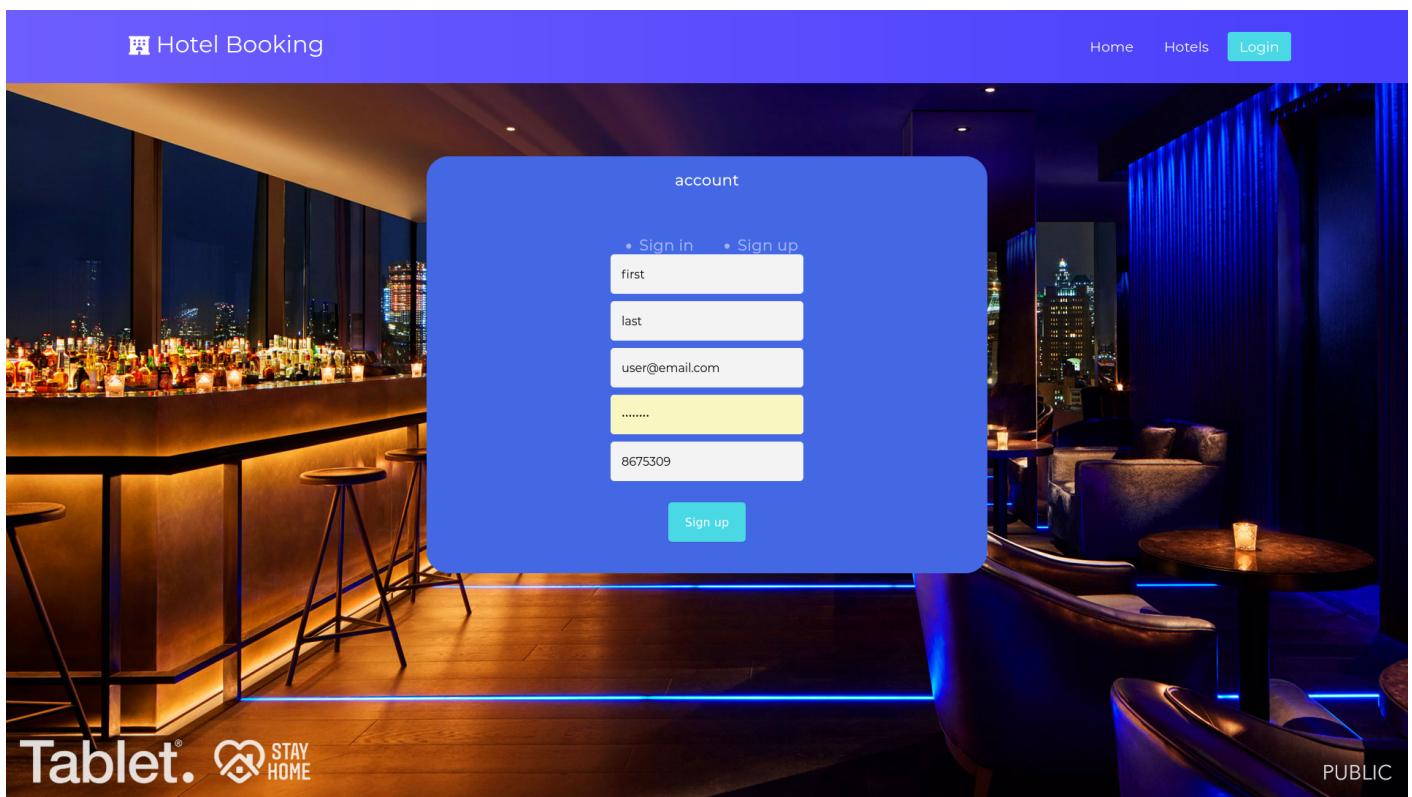
- For a *reservation* to exist there must be at exactly one *hotel* and *user*.
- *reservation* is optional for *hotel* to exist. There can be zero to many of them for a particular *reservation*.
- *reservation* is optional for *user* to exist. There can be zero to many of them for a particular *reservation*.

Other Technology

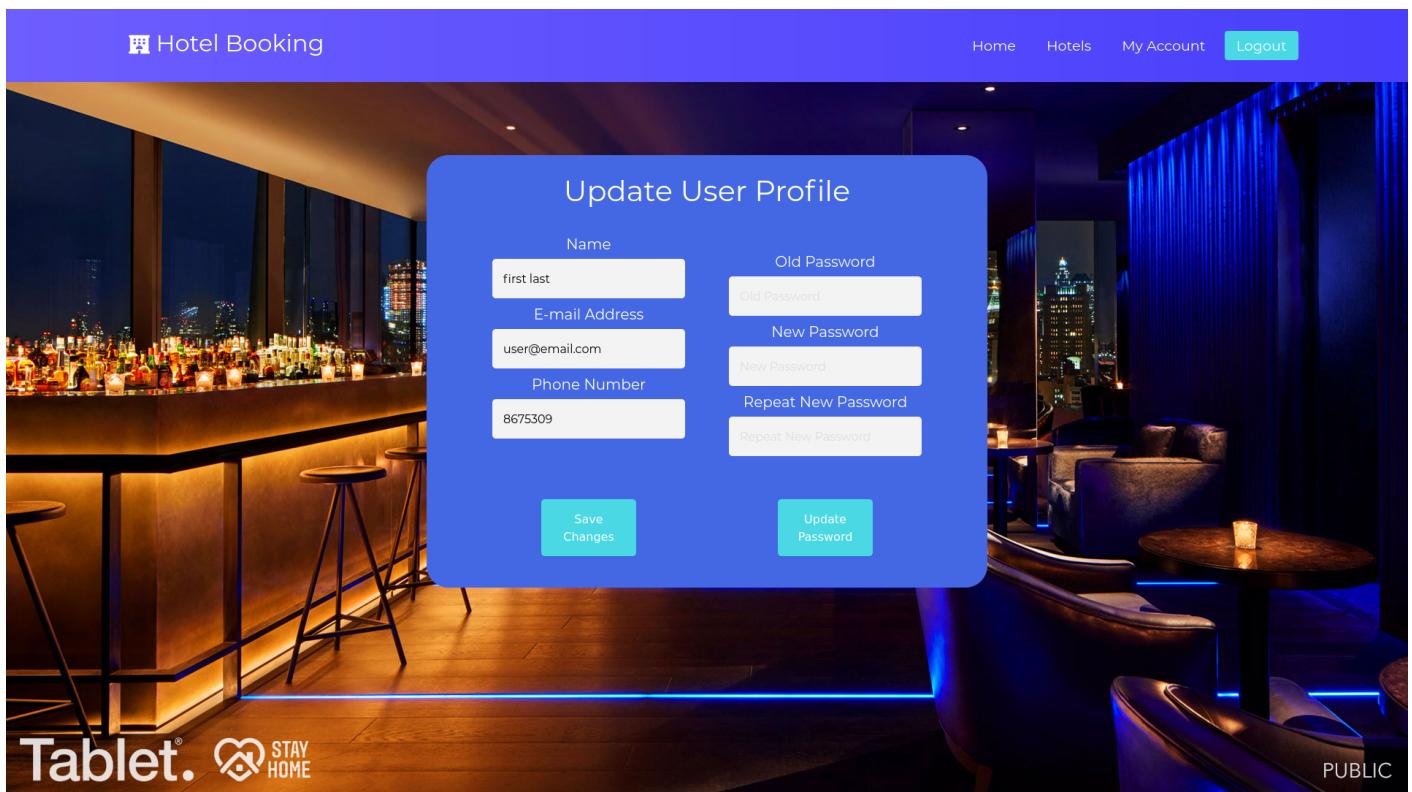
- Version control: git and github
- Database GUI: MySQL workbench
- IDE/Text editors: Webstorm, Visual Studio Code, VIM

Create/Modify Users Information

Create



Modify



Create/Modify Hotel Properties

For both the Modify hotel and Create hotel features, a React `useState` hook was used to allow us to track the state for each function component. The `useState` hooks allowed us to track the specific properties for the hotel such as name, rooms available, pricing and amenities available. When creating a new Hotel the properties were set to initially have an empty values. We created react forms to take in the new corresponding properties for the hotels. We configured the input types to match the hotel's specific properties.

Furthermore, both Modify and Create hotel functionalities were configured to only available to admin user accounts, using a credential validation function.

Create

The screenshot shows a "Create Hotel" form. At the top, the title "Create Hotel" is displayed. Below it is a vertical stack of input fields with placeholder text: "Hotel name", "Number of rooms", "Standard price", "Queen price", "King price", and "Weekend Differential". Below these fields is a row of checkboxes with labels: "Pool", "Gym", "Spa", "Office", "Wifi", and another checkbox which is currently unchecked. At the bottom of the form is a large teal-colored button labeled "Create Hotel".

Modify

The screenshot shows an "Update Hotel" form. At the top, the title "Update Hotel" is displayed. Below it is a dropdown menu containing the text "The Magnolia All Suites". To the right of the dropdown is a small up-down arrow icon. Below the dropdown is a list of numerical values: "20", "100", "150", "250", and "0.25". Below these values is a row of checkboxes with labels: "Pool", "Gym", "Spa", "Office", "Wifi", and another checkbox which is currently unchecked. At the bottom of the form is a large teal-colored button labeled "Update Hotel".

Create/Modify Reservation information

Create

The Magnolia All Suites

Weekday

Standard: \$100.00
Queen: \$150.00
King: \$250.00

Room availability: 20 rooms

Weekend

Standard: \$125.00
Queen: \$187.50
King: \$312.50

Room type: Standard

Check In: 11/30/2021

Check Out: 12/9/2021

Reserve

December 2021

Su	Mo	We	Th	Fr	Sa
1	2	3	4		
5	6	7	8	9	10
12	13	14	15	16	17
19	20	21	22	23	24
26	27	28	29	30	31

PUBLIC

Tablet. STAY HOME

Modify

The Magnolia All Suites

Standard Room #1

CHECK IN DATE: 2021-11-30

CHECK OUT DATE: 2021-12-09

USER ID: 4
NAME: First last
EMAIL: user@email.com
PHONE: 8675309

Cancel Reservation

PUBLIC

Tablet. STAY HOME

Ability to search based on criteria

The screenshot shows a web-based hotel booking application. At the top, there's a purple header bar with the text "Hotel Booking". On the right side of the header are links for "Home", "Hotels", "My Account", and a blue "Logout" button. Below the header is a search bar with the placeholder "search|hotel...". To the right of the search bar is a "Hotel Reference" section with buttons for "Standard" and "Luxury".

The main content area features a large background image of a modern hotel interior, possibly a lobby or lounge, with warm lighting and a bar counter.

On the left side of the main content area, there's a sidebar with several hotel names listed in blue boxes:

- The Magnolia All Suites**
Pool • Gym • Spa • WiFi
- The Lofts at Town Centre**
Pool • Gym • WiFi • Office
- Park North Hotel**
Pool • Gym
- The Courtyard Suites**
Pool • Gym • WiFi • Spa • Office

At the bottom left of the sidebar, there's a logo for "Tablet. ST. HOME" with the URL "localhost:3000/hotels/4". On the far right of the sidebar, the word "PUBLIC" is visible.