

Term Project

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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.

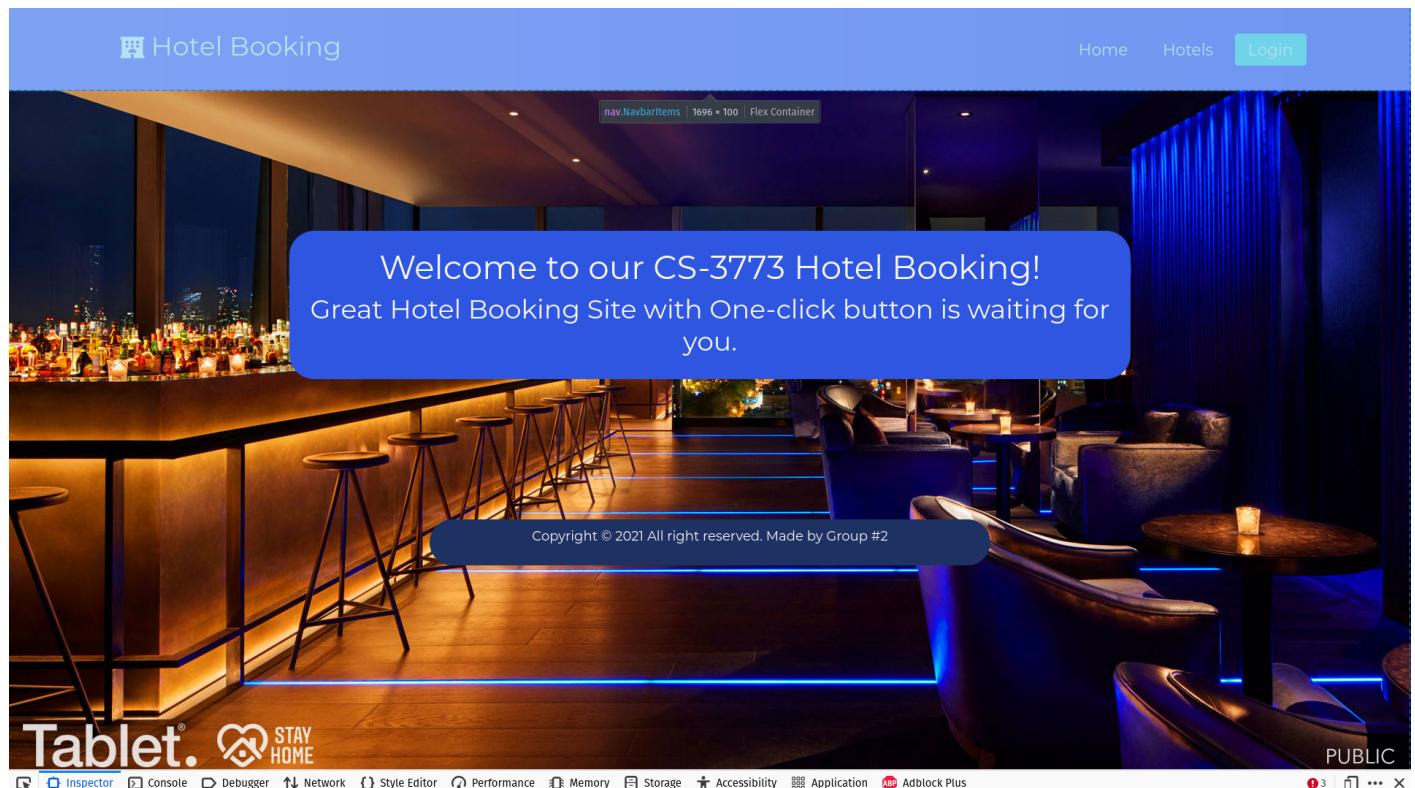


Figure 1: Navigation Bar

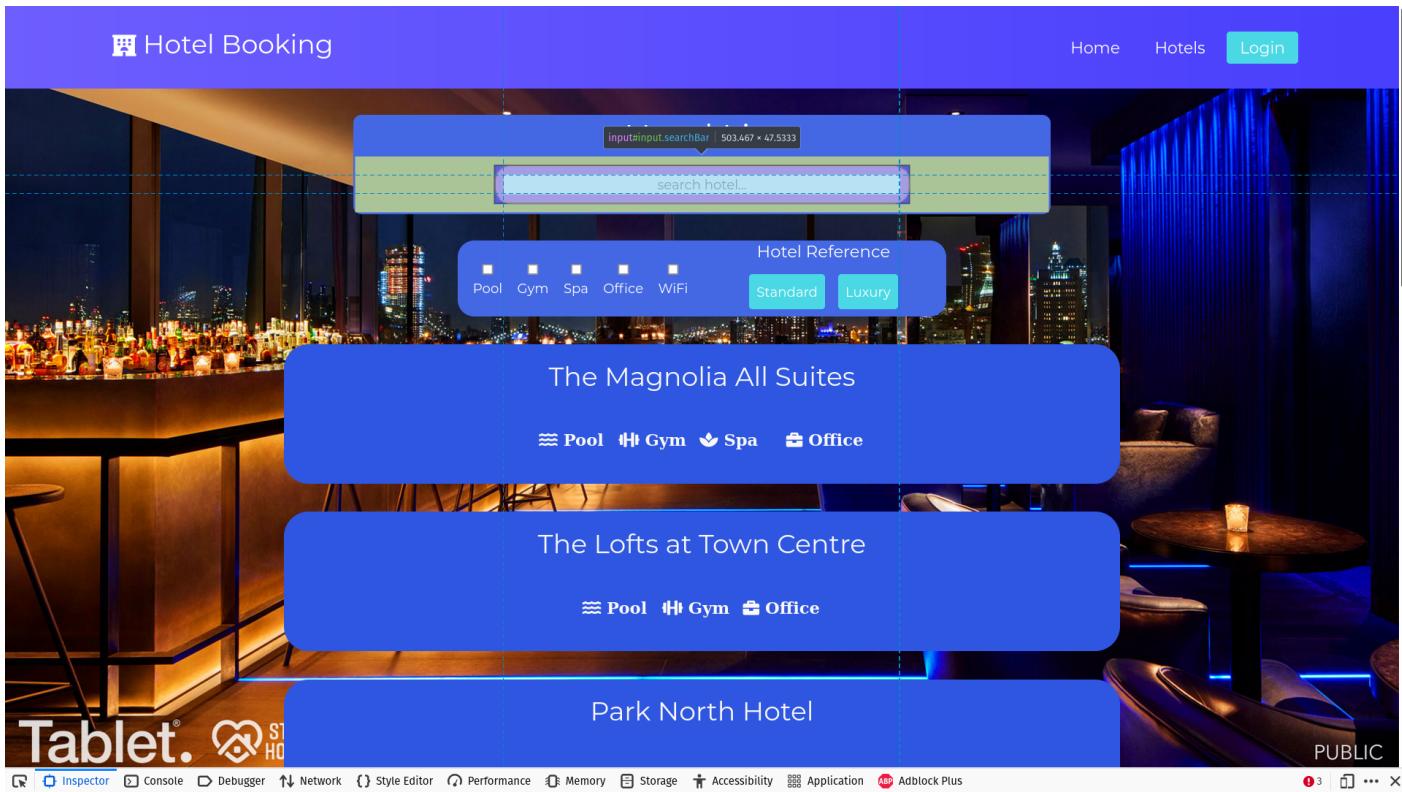


Figure 2: Search Bar

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

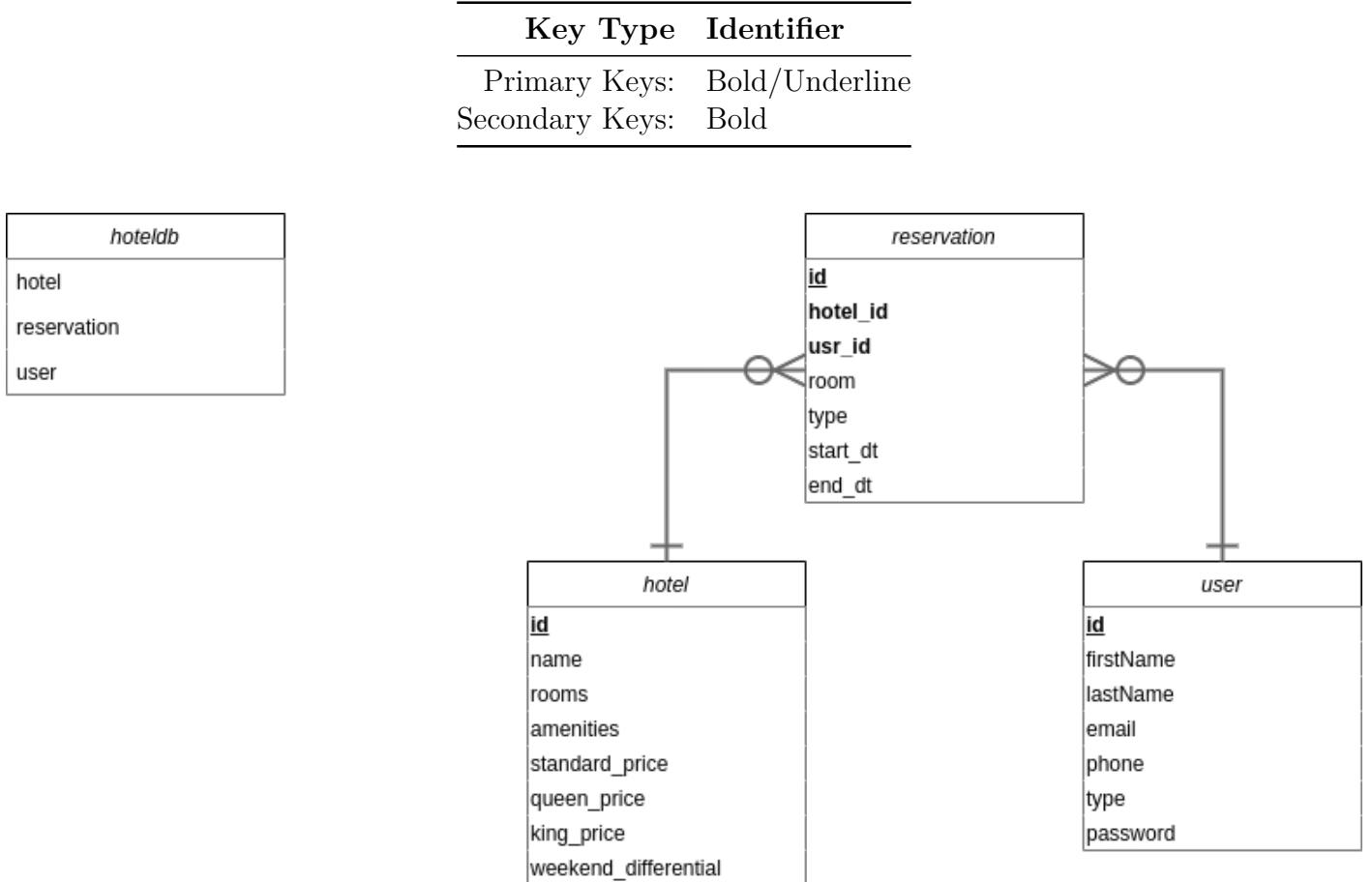


Figure 3: Database Relationships

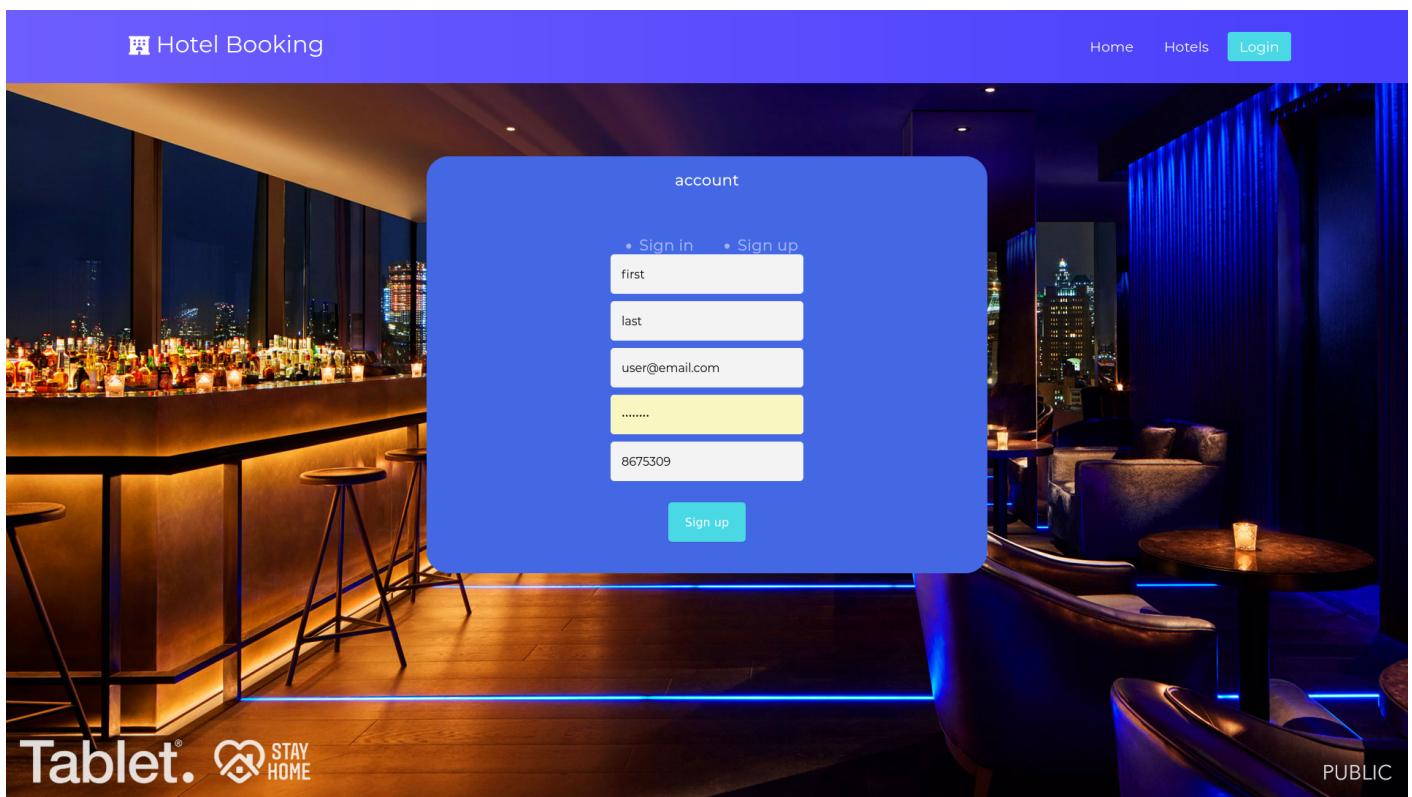
- For a **reservation** to exist there must be at exactly one **hotel** and **user**.
- **reservation** is optional for **hotel** to exist. There can be zero to many of them for a particular **reservation**.
- **reservation** is optional for **user** to exist. There can be zero to many of them for a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

Other Technology

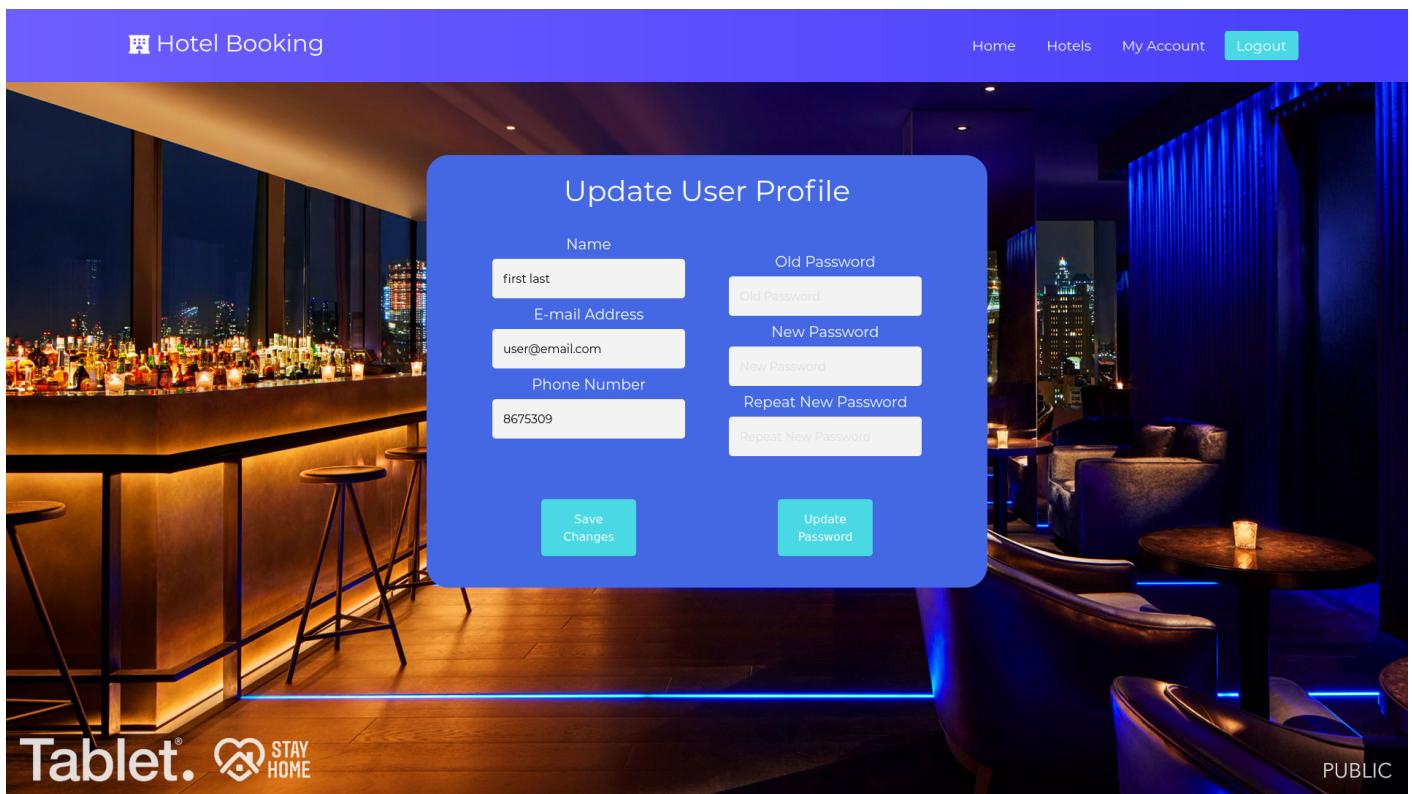
- Version control: git and github
- Database GUI: MySQL workbench
- IDE/Text editors: Webstorm, Visual Studio Code, VIM

Create/Modify Users Information

Create



Modify



Create/Modify Hotel Properties

Create

Create Hotel

Hotel name
Number of rooms
Standard price
Queen price
King price
Weekend Differential

Pool Gym Spa Office Wifi

Create Hotel

Modify

Update Hotel

The Magnolia All Suites
20
100
150
250
0.25

Pool Gym Spa Office Wifi

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 hotel booking application interface. At the top, there's a purple header bar with the "Hotel Booking" logo, navigation links for "Home", "Hotels", "My Account", and a "Logout" button. Below the header is a search bar labeled "Hotel List" with a placeholder "search|hotel...". Underneath the search bar is a "Hotel Reference" section with filters for "Pool", "Gym", "Spa", "Office", and "WiFi", with "Standard" and "Luxury" buttons. The main content area displays four hotel listings in blue rounded boxes:

- The Magnolia All Suites**
Filters: Pool, Gym, Spa, Office
- The Lofts at Town Centre**
Filters: Pool, Gym, Office
- Park North Hotel**
Filters: Pool, Gym
- The Courtyard Suites**
Filters: Pool, Gym, Spa, Office

The background of the page features a blurred image of a modern interior space, possibly a lobby or lounge, with warm lighting and a bar area. In the bottom left corner, there's a watermark for "Tablet. ST. HOME" with the URL "localhost:3000/hotels/4". In the bottom right corner, the word "PUBLIC" is visible.