

JS Back-End Retake Exam – Magma Haven

1. Exam Rules:

1. You have **6 hours**.
2. When you are ready, delete the **node_modules** folder, make sure all dependencies are listed in the **package.json** file and submit your archiving project.
3. You must use the provided HTML & CSS resources.
4. You may **add attributes** (such as **class** and **dataset**), but it is forbidden to **change existing** attributes (such as **class** and **id**).
5. You may **change "href"** attributes on links and add/change the **method** and **action** attributes of HTML Forms.
6. Use **Express.js** as a back-end framework.
7. Use **MongoDB** as a database with **mongoose**.
8. You can use whatever **view engine** you like (**express-handlebars**, EJS, Pug, etc.).
9. Use **bcrypt** for hashing the password.
10. It is **forbidden** to use **React**, **Vue**, **Angular**, etc.
11. All applications will be **examined** as follows:
 - The needed **dependencies** are installed with the command "**npm install**".
 - The application is **started** with the command "**npm run start**".
12. The examiners are **NOT** allowed to **change** anything in your code and will **NOT** use any **instruments outside** of the course scope.
13. You decide how to name your links.

IMPORTANT:

1. THE APPLICATION MUST START FROM THE FILE "INDEX.JS" ON PORT 3000!

2. ONLY THE LAST SUBMISSION WILL BE EVALUATED!

2. Application Overview

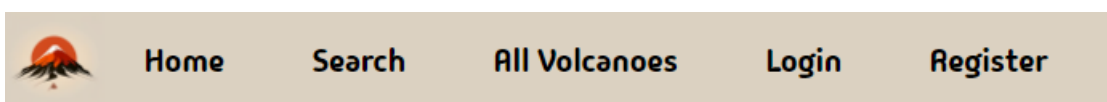
Get acquainted with the provided **HTML and CSS** and create an application for the **beauty of volcanoes**.

The visitors can **view** the **Home page** and **All Volcanoes** page with available volcanoes. They can also **register** with a **username**, an **email** and **password**, allowing them to create their posts and to **vote for volcanoes they are interested in** (if the **current user** is **not** the author of the post). Authors can edit or delete their post at any time.

3. Functional Requirements

Guest (Not logged in)

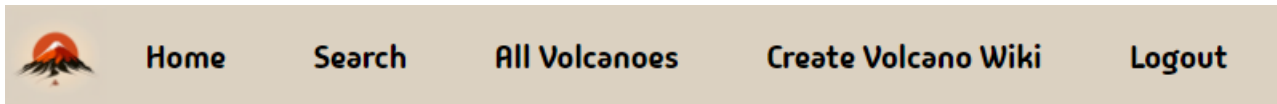
Guest navigation example:



The **application** should provide **Guest** (not logged in) users with the functionality to **Login**, **Register**, and **view** the **Home** page, **All Volcanoes** page, and **Details** page.

Users (Logged in)

User navigation example:



The **application** should provide **Users** (logged in) with the functionality to:

- View the Home page and all other pages with logged-in navigation
- View All Volcanoes page
- Create a new Volcano Post [Create Volcano Wiki]
- Access volcano details page [Details]
- Vote for volcano post (if the current user is **not** the owner of the post)
- Delete or Edit the volcano post depending on the user's authentication (only for the owner of the current post)

4. Database Models

The **Database** of the **MagmaHaven** application needs to support **two entities**:

User

- username – string (required),
- email - string (required),
- password - string (required)

Volcano

- name - string (required),
- location - string (required),
- elevation - number (required),
- lastEruption: number (required),
- image: string (required),
- typeVolcano: string [Supervolcanoes, Submarine, Subglacial, Mud, Stratovolcanoes, Shield] (required),
- description: string (required),
- voteList - a collection of Users (a reference to the User model)
- owner - object ID (a reference to the User model)

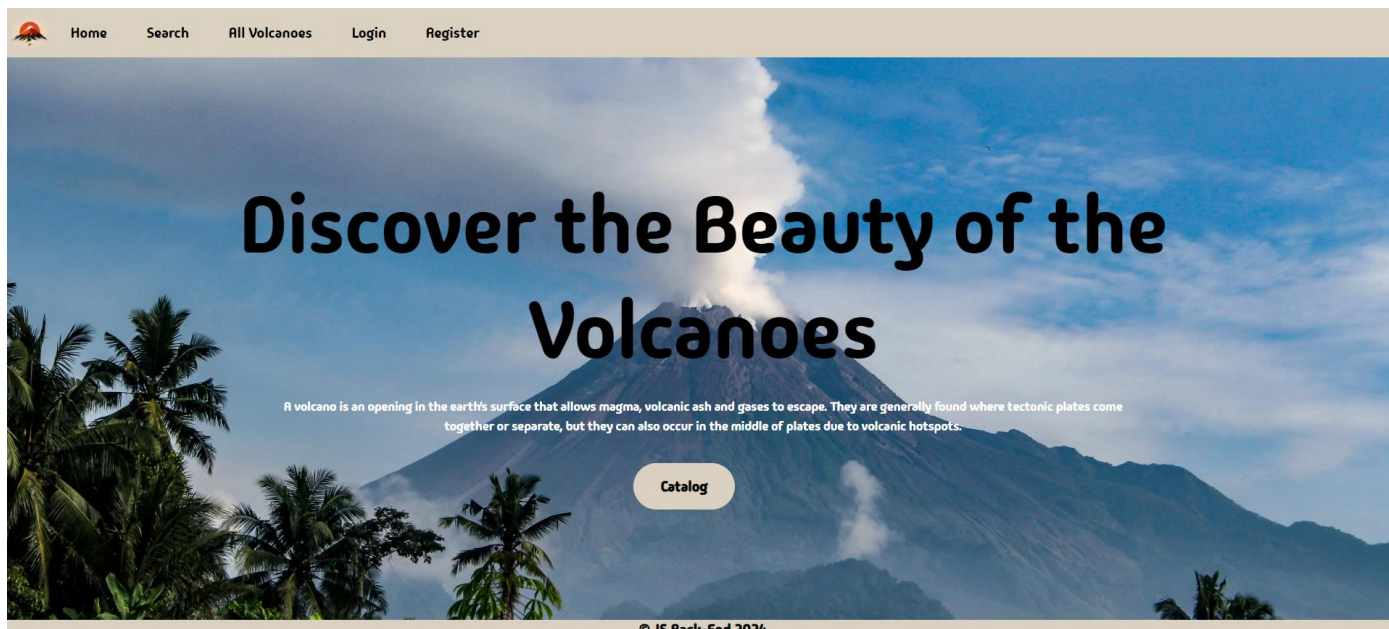
Note: When a user **vote for volcano**, their **id** is added to the **voteList** collection. You can add more entities, if you need.

Implement the entities with the **correct data types**.

5. Application Pages

Home Page (For logged in users and logged-out users)

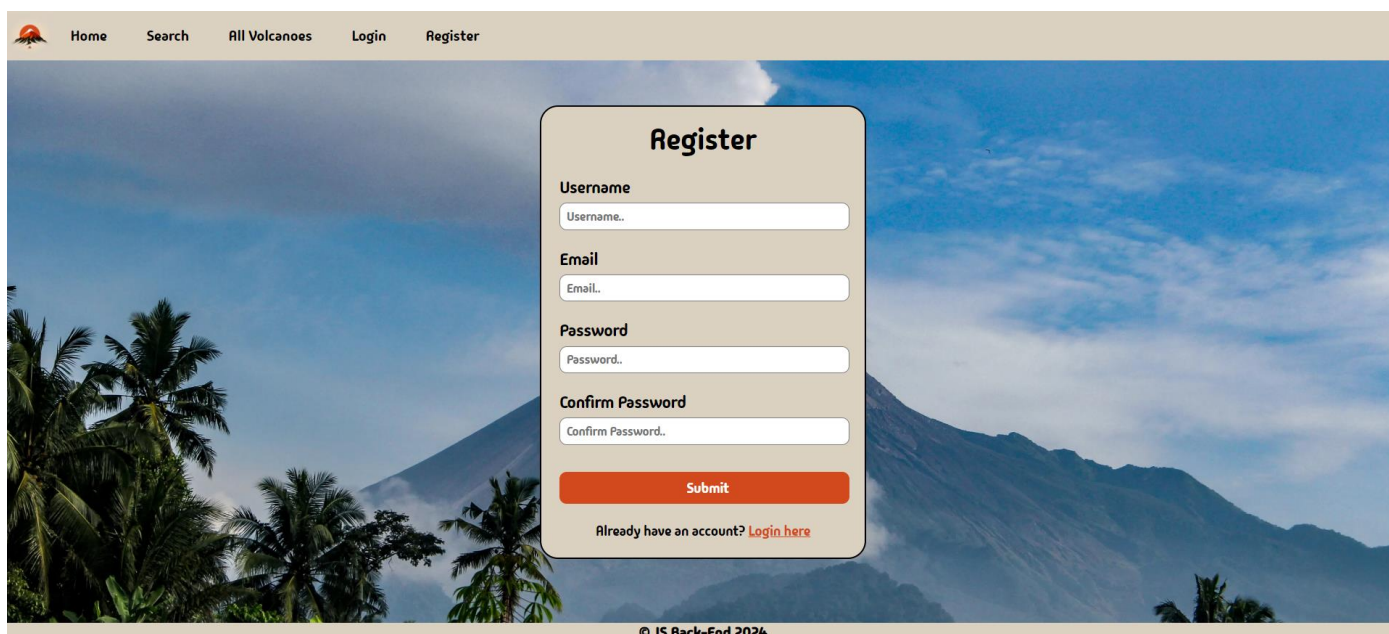
Visualize **static home page**. The **Catalog** button should redirect the user to the catalog page.



Register Page (Logged Out User)

Register a user inside the database with a **username**, an **email** and **password**. The **password** inside the **database** must be hashed (**use bcrypt**), and both passwords **must match**! After **successful** registration, the user should be logged and **redirected** to the **Home page**. If the user tries to submit **invalid data**, an **error message** should be displayed and the already entered **data should be kept** in the input fields (except for the passwords).

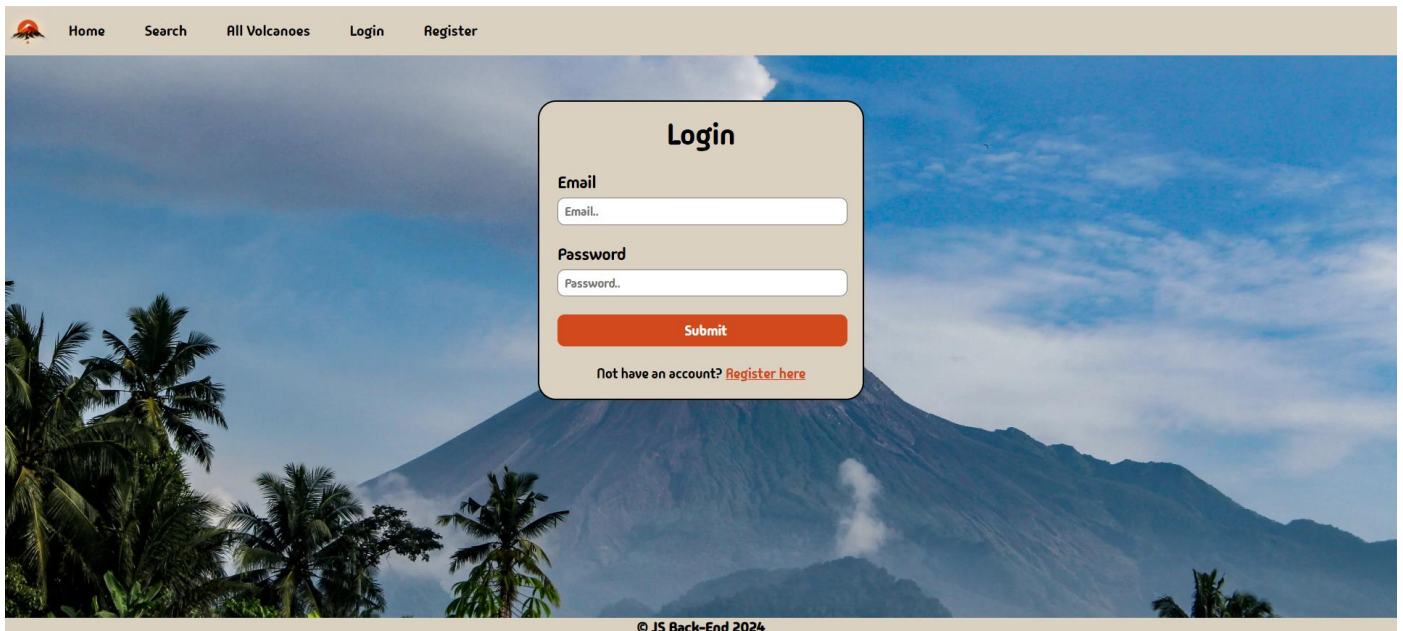
A user who is already logged in should **NOT** be able to reach this page by typing its URL (e.g. "http://localhost:3000/register") in the browser address bar.



Login Page (Logged Out User)

Logging an already registered user with the correct **email** and **password**. After successful login, you should **redirect the user to the Home page**. If the user tries to submit **invalid data**, an **error message** should be displayed and the already entered **data should be kept** in the input fields (except for the passwords).

A user who is already logged in should **NOT** be able to reach this page by typing its URL (e.g. "http://localhost:3000/login") in the browser address bar.



Logout (Logged in user)

The logout action is available to **logged-in** users. Upon success, clear any session information and **redirect** the user to the **Home** page.

A user who is **NOT** logged in should **NOT** be able to reach this functionality by typing its URL (e.g. "http://localhost:3000/logout") in the browser address bar.

Create Volcano Wiki (Logged in User)

The **Create Volcano Wiki** page is available to **logged-in users**. It contains a form for adding new volcano post. Upon success, **redirect** the user to the **All Volcanoes** page. If the user tries to submit **invalid data**, an **error message** should be displayed and the already entered **data should be kept** in the input fields.

A guest user (who is not logged in) should **NOT** be able to reach this page by typing its URL (e.g. "http://localhost:3000/volcano/create/1234") in the browser address bar.

Home Search All Volcanoes Create Volcano Wiki Logout

Create Volcano Wiki

Name:

Location:

Elevation:

Year of Last Eruption:

Image:

Volcano Type:

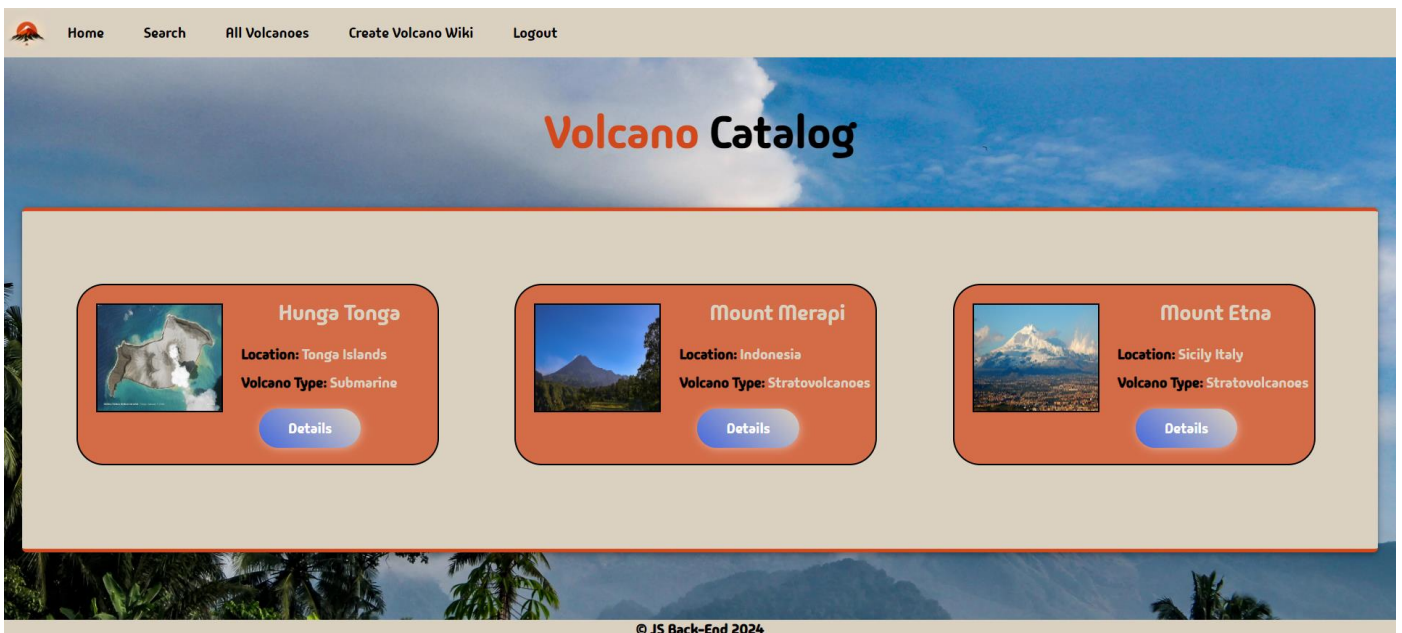
Description:

Submit

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All Volcanoes (For logged in users and logged out users)

A list of all volcanoes post. Each volcano must be displayed with the **volcano name**, the **location**, the **volcano type** and the **image**, and a button for **details** about the **specific post**. As in the picture below:



The [**Details**] button should be a link to the **details page** for the current volcano post.

If there are **NO** post in the database yet, display "**There are no volcanoes found yet!**"



Details Page (For logged in users and logged out users)

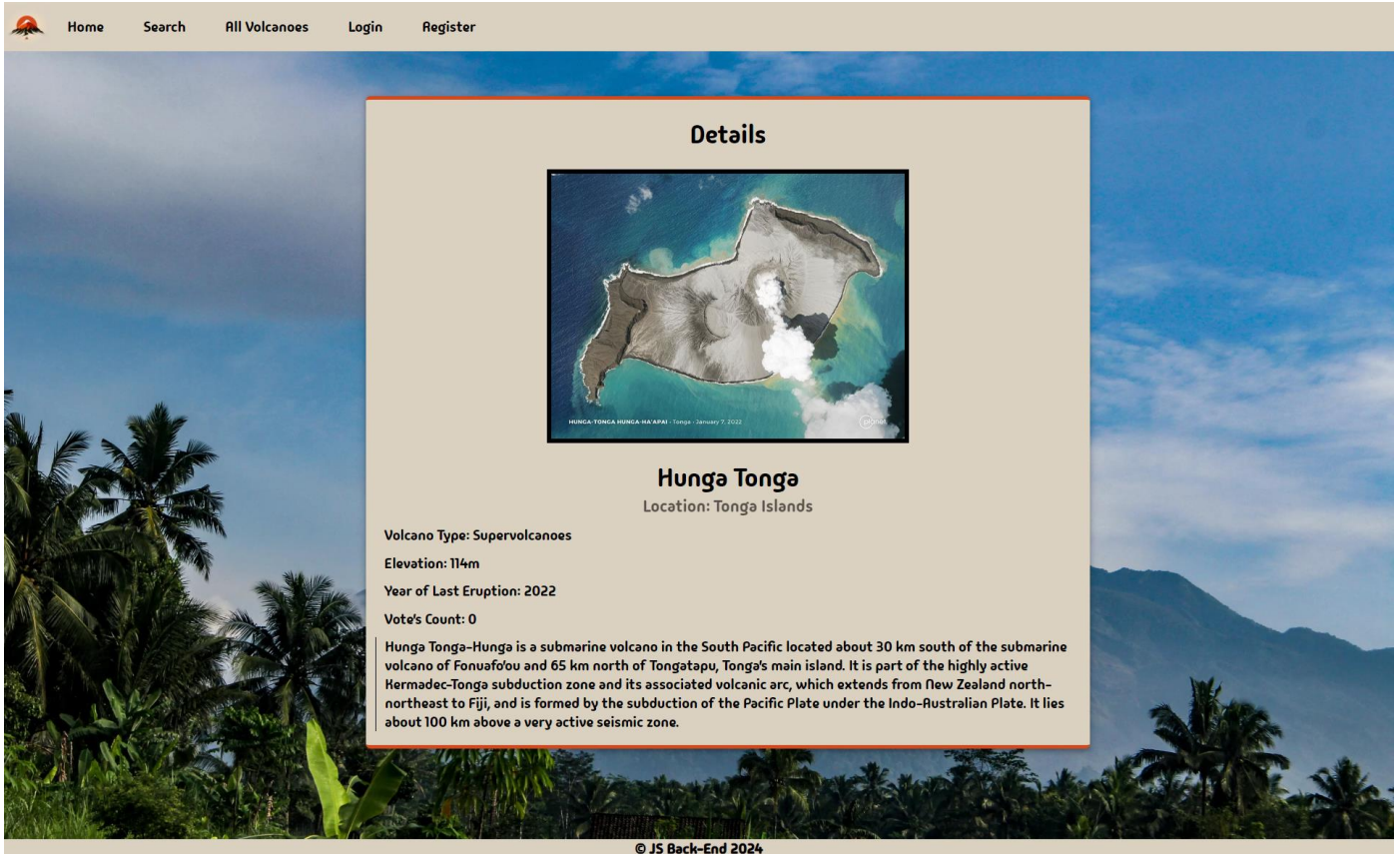
All users should be able **to see the details about the volcanoes**. Clicking the **Details button** on the post card should display the details page. If the currently registered user **is the creator** of the volcano post, the **Edit** and **Delete** buttons should be displayed. Otherwise, they **should not be available**.

Information about the volcano:

- **Name**
- **Location**
- **Type**
- **Elevation**
- **Year of last eruption**
- **Votes**
- **Description**
- **Buttons** (Depending on the status of the currently logged in user)

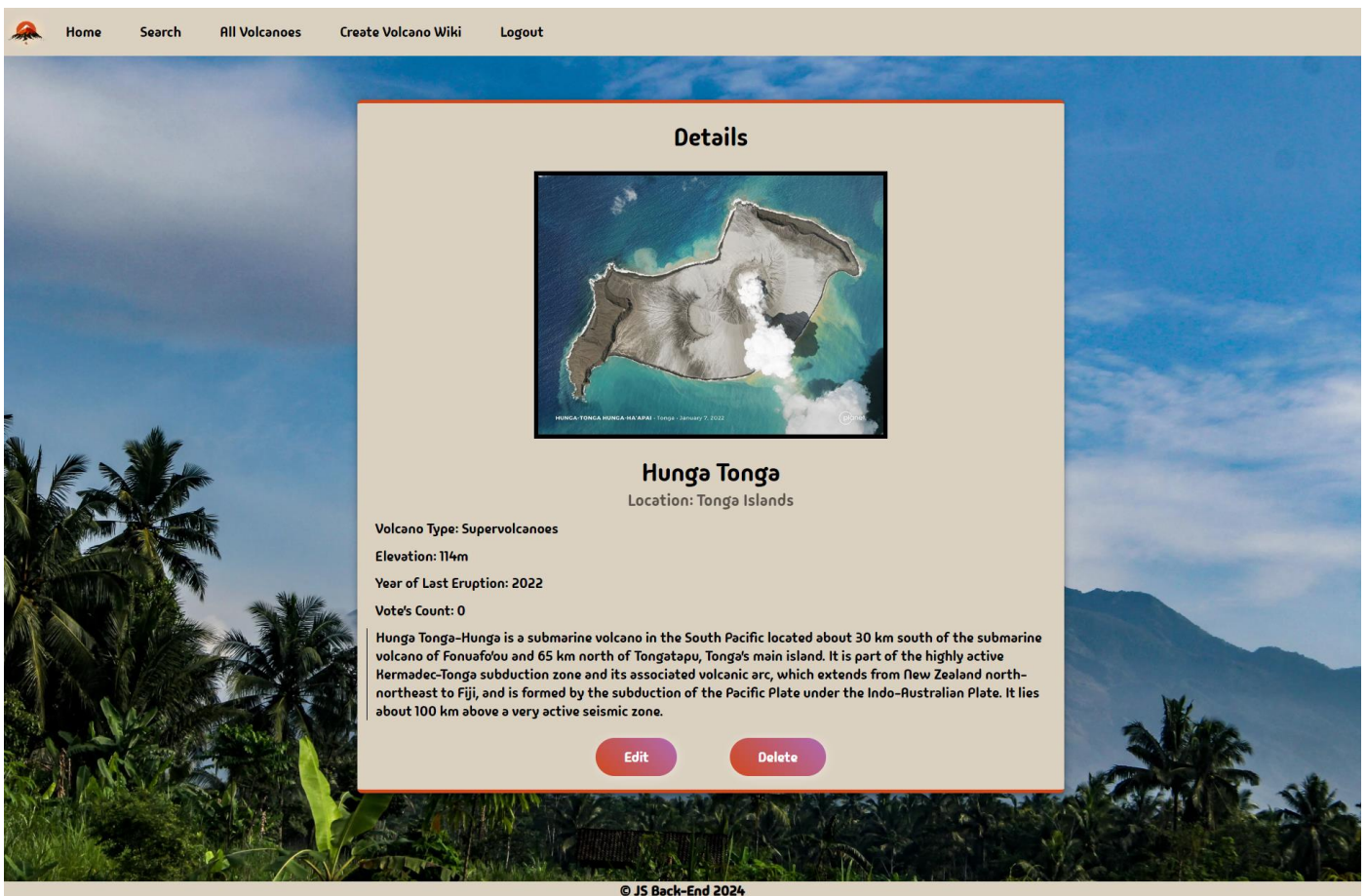
Details Page (Logged out users)

If the user has not **logged in**, **no buttons** should be displayed.



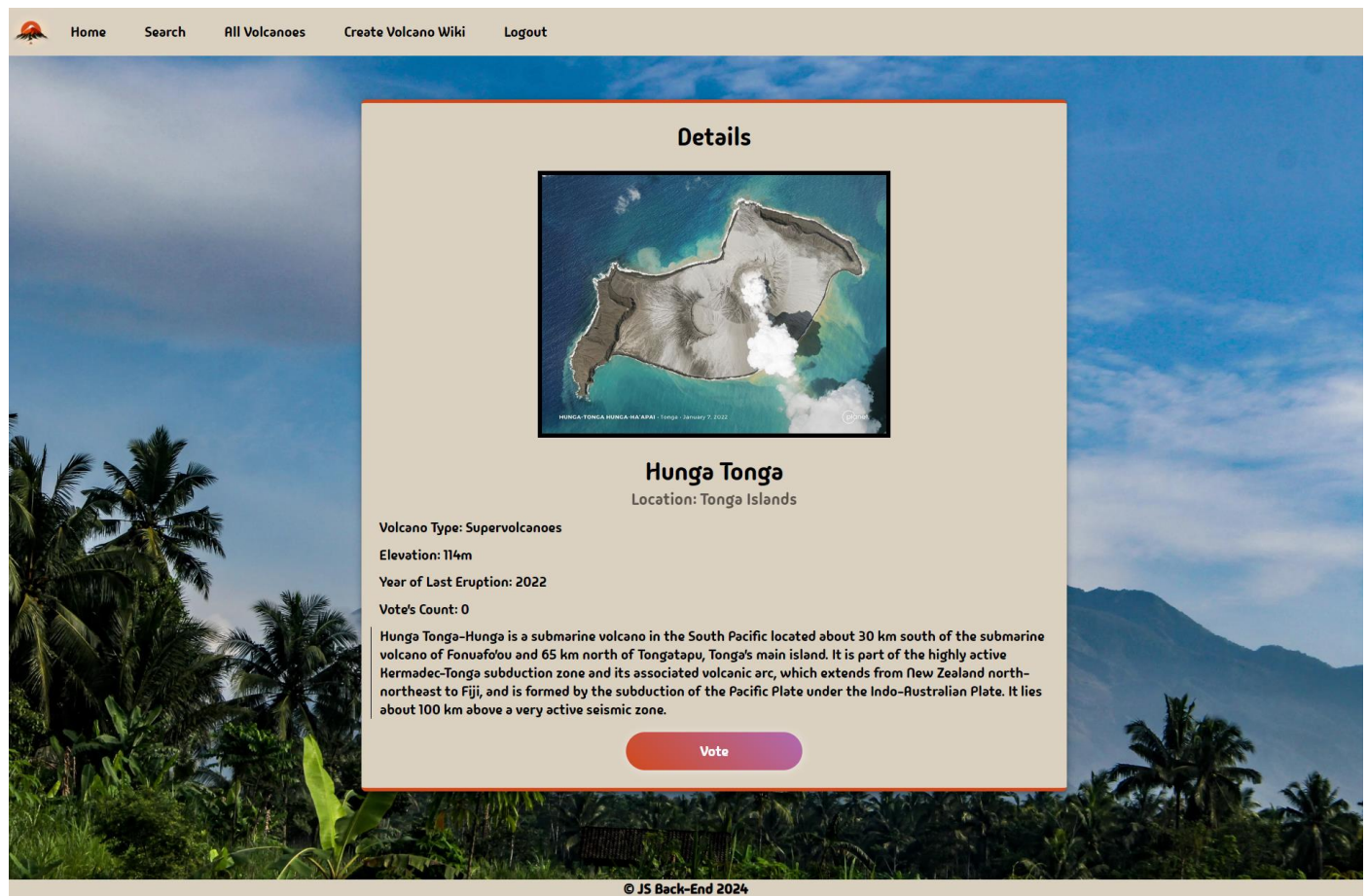
Details Page (Logged in user and creator of the current post)

If the **currently logged-in** user is the **owner** (the user who **created the volcano post**), he should see the **[Delete]** and **[Edit]** buttons.



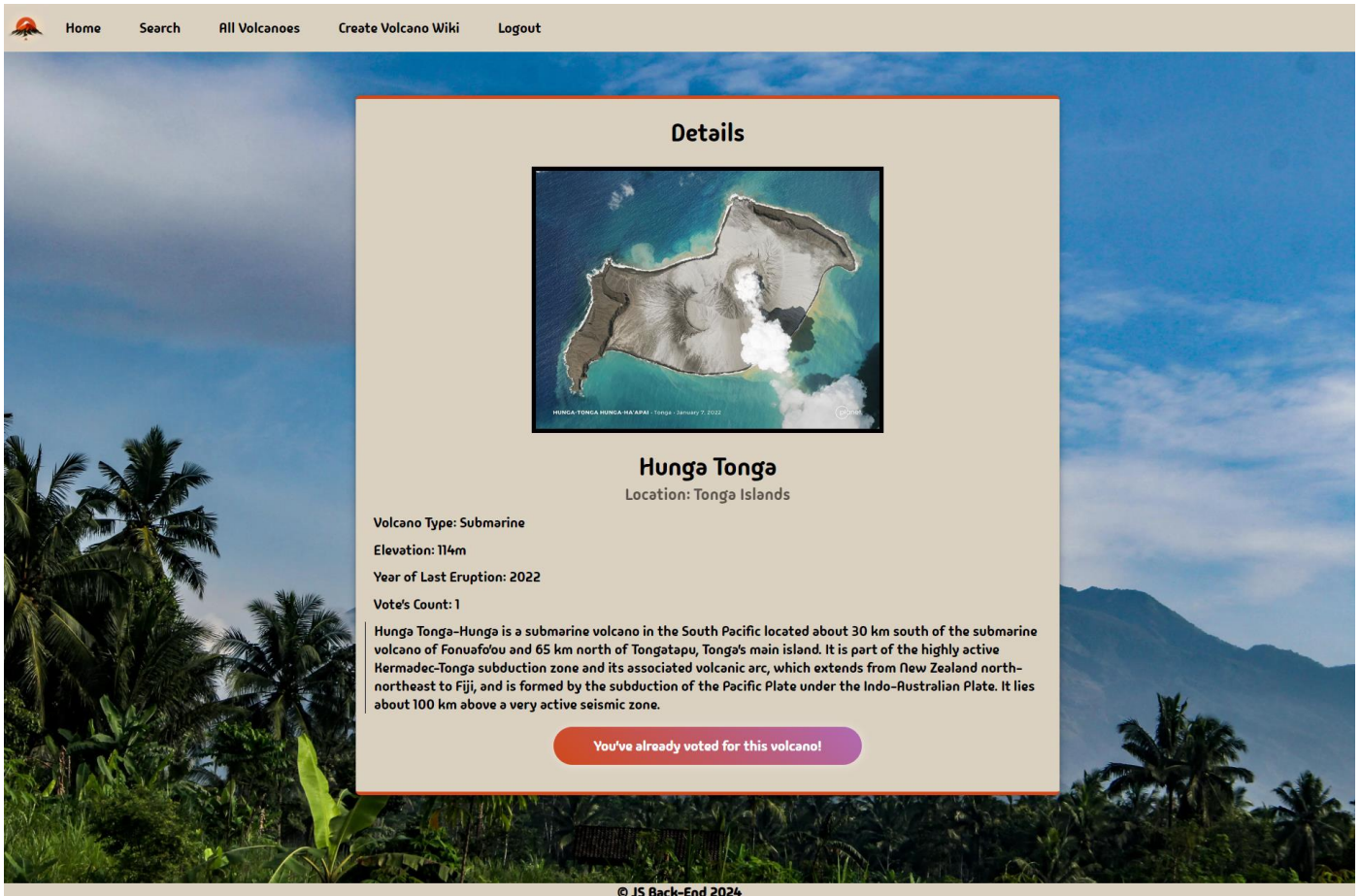
Details Page (Logged in user who has not vote for volcano)

If the currently logged-in user is **not the owner** (a user who is **not** the creator of this volcano post) and **he has not vote for the post**, he should see a **Vote** button.



Details Page (Logged in user already voted for volcano post)

If the currently logged in user is **not the owner** and has **already voted for the volcano post**, he should see **[You 've already voted for this volcano!]**.



Delete Volcano Post (Logged in user and owner of the current post)

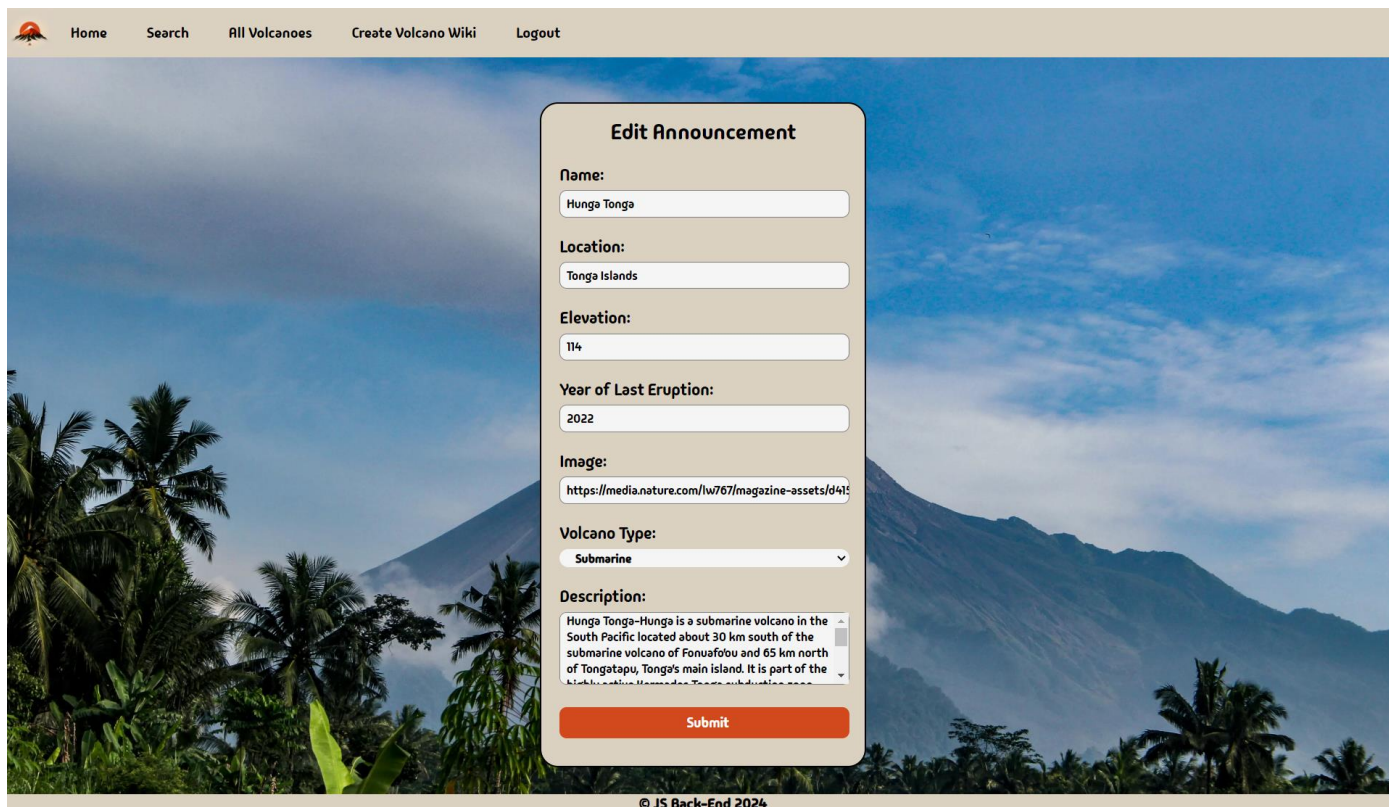
Each **owner** of the volcano post must be able to click on the **[Delete]** button and **delete the current volcano post** from the database. After this, the user must be redirected to the **All Volcanoes** page.

A user who is not the owner of the volcano should **NOT** be able to reach this functionality by typing its URL (e.g. "http://localhost:3000/volcano/delete/1234") in the browser address bar.

Edit Volcano Post (Logged in user and owner of the current post)

Each **owner** can edit their **volcano post**. Clicking the **[Edit]** button for a specific post on the details page should display the **Edit page**, all fields being populated with volcano data. It contains a form with input fields for all relevant properties. If **successful**, redirect the user to the **current volcano post details page**. If the user tries to submit **invalid data**, an **error message** should be displayed and the already entered **data should be kept** in the input fields.

A user who is not the owner of the volcano should **NOT** be able to reach this page by typing its URL (e.g. "http://localhost:3000/volcano/edit/1234") in the browser address bar.

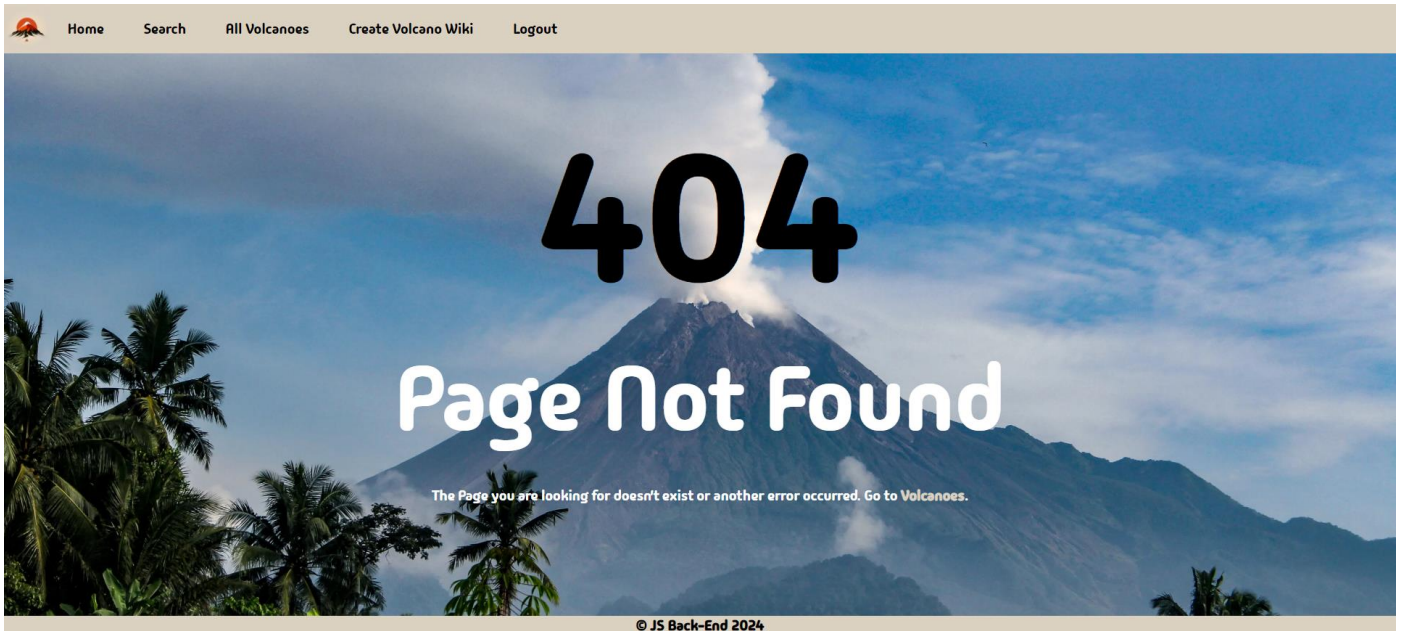


6. Security Requirements (Routes Guards)

The **Security Requirements** are mainly **access** requirements. Configurations about which users can access specific functionalities and pages.

- **Guest** (not logged in) users can access the **Home** page.
- **Guest** (not logged in) users can access the **Login** page and functionality.
- **Guest** (not logged in) users can access the **Register** page and functionality.
- **Guest** (not logged in) and **Users** (logged in) can access the **All Volcanoes (Listed all volcano posts)**.
- **Guest** (not logged in) can access the **Details** page without functionality.
- **Guest** (not logged in) can access the **Search** page and functionality.
- **Users** (logged in) can access the **Home** page.
- **Users** (logged in) can access the **Details** page and functionality.
 - **Users** (not volcano post owners) can **vote for other post**.
 - **Users** (volcano post owners) can **Edit** and **Delete** the current post
- **Users** (logged in) can access the **Search** page and functionality.
- **Users** (logged in) can access the **Create Volcano Wiki** page and functionality.
- **Users** (logged in) can access the **Logout** functionality.

Use the following view for **invalid paths**:



7. Validation and Error Handling

The application should **notify** the users about the result of their actions.

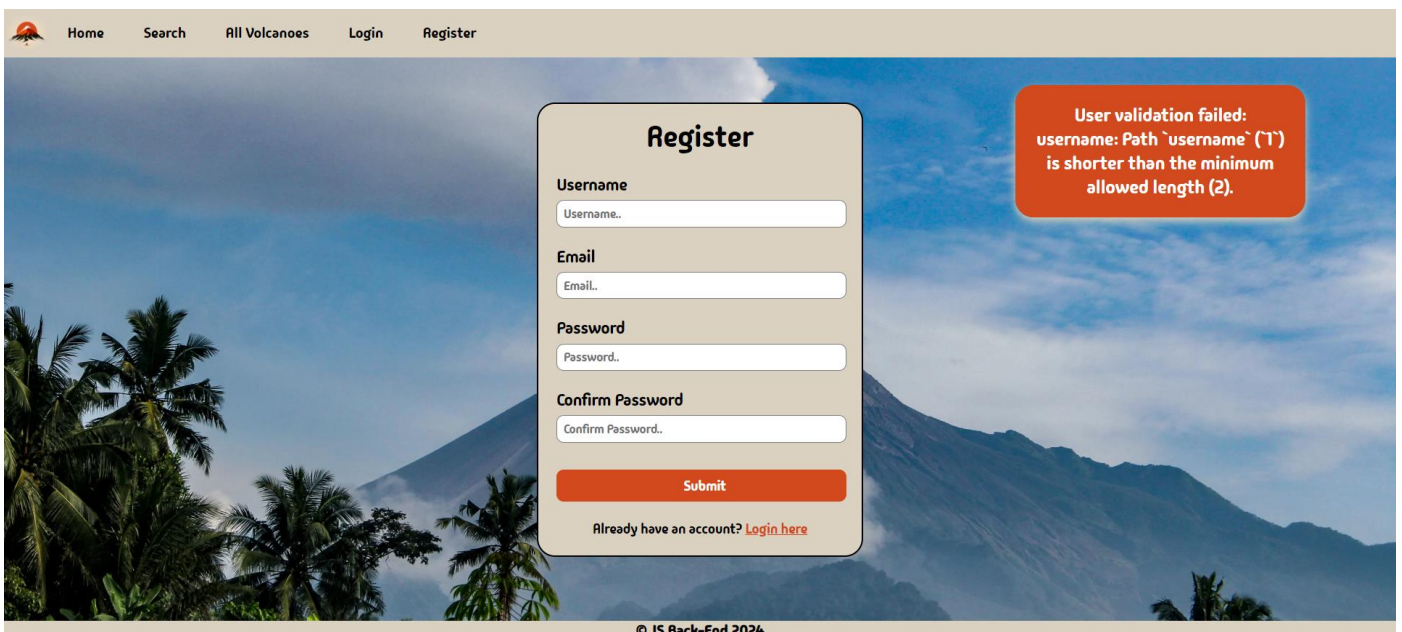
In case of error, you should display div with class "**errorContainer**"

You can choose to display the first error or all of them. You have complete freedom to choose the content of the error message you will display, as long as it is clear what exactly the error is.

Login / Register

You should make the following validations:

- The **username** should be **at least 2 characters** long
- The **email** should be **at least 10 characters** long
- The **password** should be **at least 4 characters** long
- The **repeat password** should be **equal to the password**



Volcano

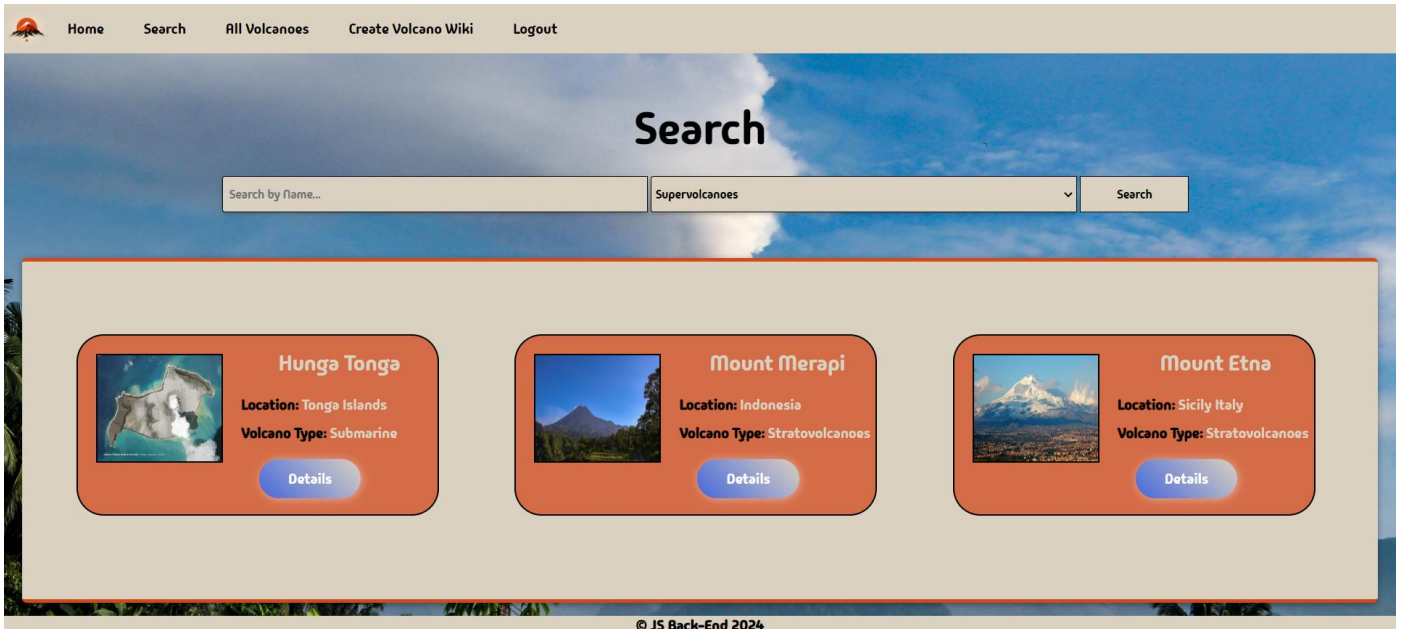
You should make the following validations while **creating** or **editing** a volcano post:

- The **Name** should be **at least 2 characters**
- The **Location** should be **at least 3 characters**
- The **Elevation** should be **minimum 0**
- The **Year of Last Eruption** should be **between 0 and 2024**
- The **Volcano Image** should start with **http://** or **https://**
- The **Type** should be select between ["Supervolcanoes", "Submarine", "Subglacial", "Mud", "Stratovolcanoes", "Shield"]
- The **Description** should be a minimum of **10 characters long**

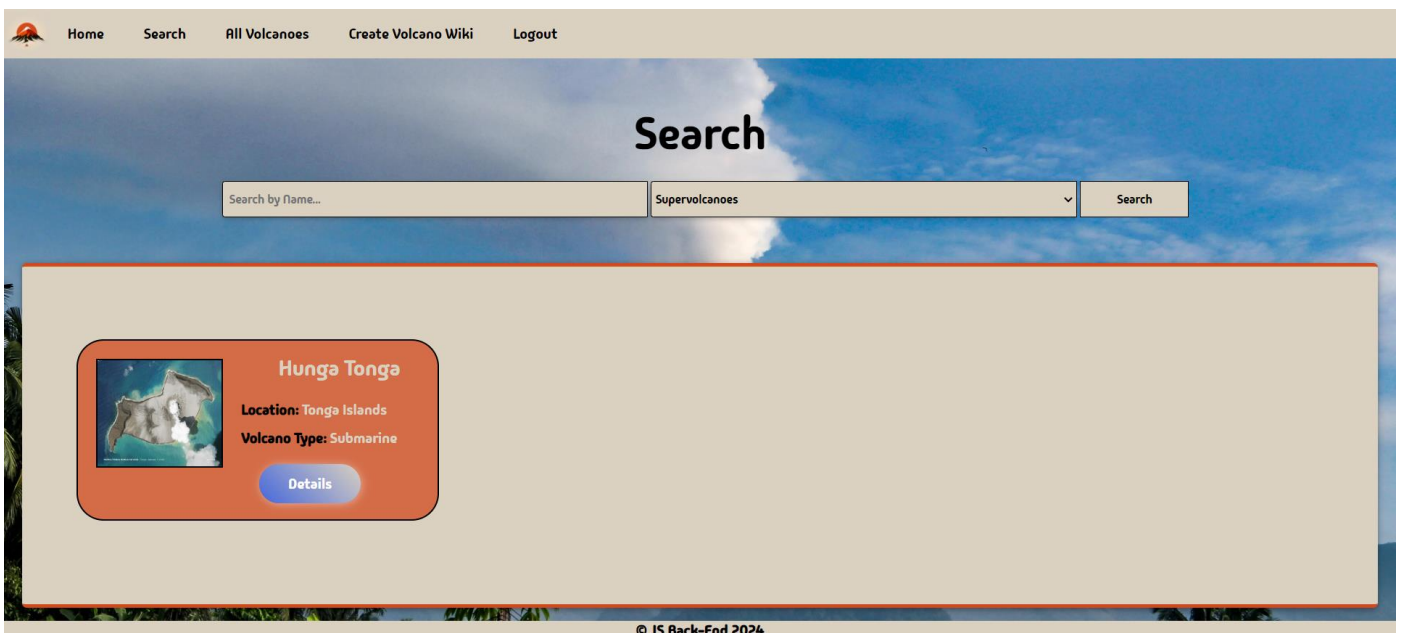
The screenshot shows a web application interface for creating a volcano entry. The background is a scenic image of a volcano with palm trees in the foreground. A navigation bar at the top includes links for Home, Search, All Volcanoes, Create Volcano Wiki, and Logout. The main form, titled 'Create Volcano Wiki', contains several input fields: Name, Location, Elevation, Year of Last Eruption, Image, Volcano Type (a dropdown menu currently showing 'Supervolcanoes'), and Description. A red error message 'Path "name" is required.' is displayed in a box at the top right of the form. The 'Name' field is empty, while the other fields contain placeholder text. A 'Submit' button is located at the bottom of the form. The footer of the page reads '© JS Back-End 2024'.

8. * Bonus – Search


Search **for volcanoes**. Filter all **matches** by **name** and **type**, which includes a **search string** (case insensitive). When the search is first open, all volcanoes should be displayed.



After clicking on the **[Search]** button If there are any matching matches from the search, show each of them.



If there are **no** search matches, display:

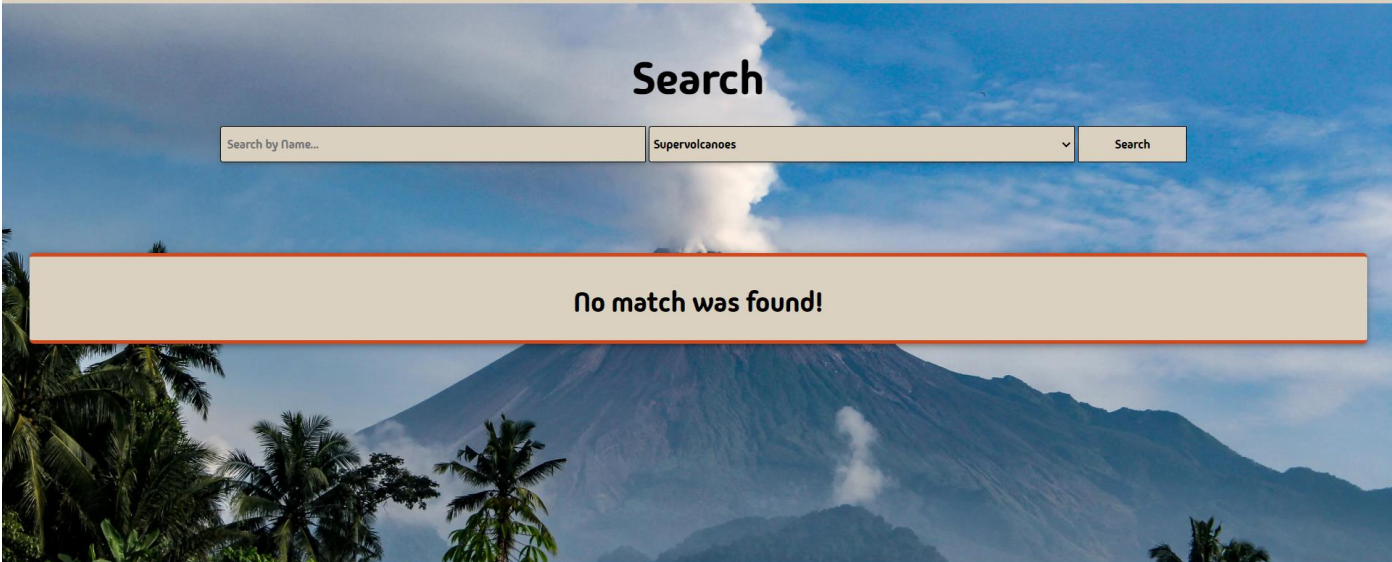
 Home Search All Volcanoes Create Volcano Wiki Logout

Search

Supervolcanoes

Search

No match was found!



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GOOD LUCK! 😊