JS Back-End Retake Exam – TechStore

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 **tech store**.

The visitors can **view** the **Home page, Catalog page** with available offers. They can also **register** with a **name,** an **email** and **password**, allowing them to create their posts and to **prefer laptops and computers 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.

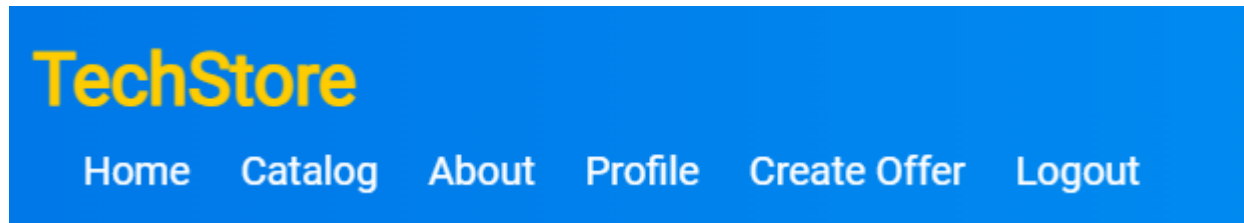## 3. Functional Requirements

Guest (Not logged in)

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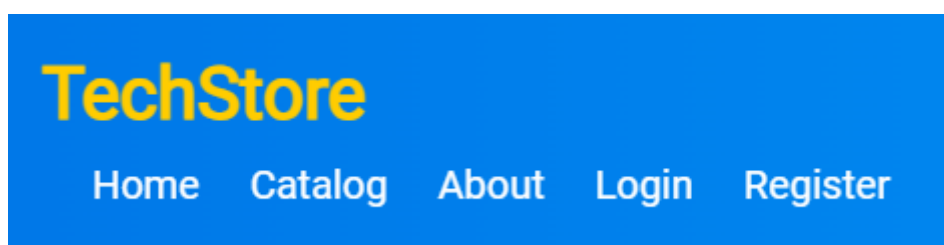
The **application** should provide **Guest** (not logged in) users with the functionality to **Login**, **Register**, and **view** the **Home** page, **Catalog** page, and **Details** page.

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 Catalog page**
- **Create a new Device Offer [Create Offer]**
- **Access devices details page [Details]**
- **Prefer devices (if the current user is not the owner of the post)**
- **Delete or Edit the device post depending on the user's authentication (only for the owner of the current post)**

4. Database Models

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

User

- **name – string (required),**
- **email - string (required),**
- **password - string (required)**

Devices

- **brand - string (required),**
- **model- string (required),**
- **hard disk- string (required),**
- **screen size - string (required),**
- **ram - string (required),**
- **operating system - string (required),**
- **cpu - string (required),**
- **gpu - string (required),**
- **price - number (required),**
- **color - string (required),**
- **weight - string (required),**
- **image: string (required),**
- **preferredList - a collection of Users (a reference to the User model)**
- **owner - object ID (a reference to the User model)**

Note: When a user **prefers the device**, their **id** is added to the **preferredList** 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 **the last 3 added post. Each offer must** show information about the **device brand, model, price and image** as well as a page with **details** about the **devices.**
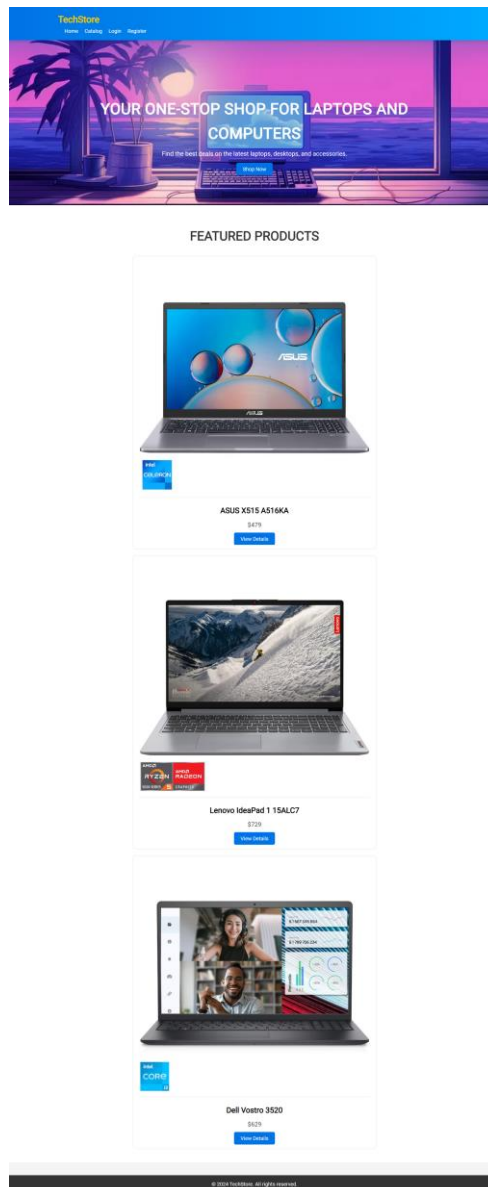
If there are **NO** post in the database yet, display **"There haven't been any devices posted yet."**
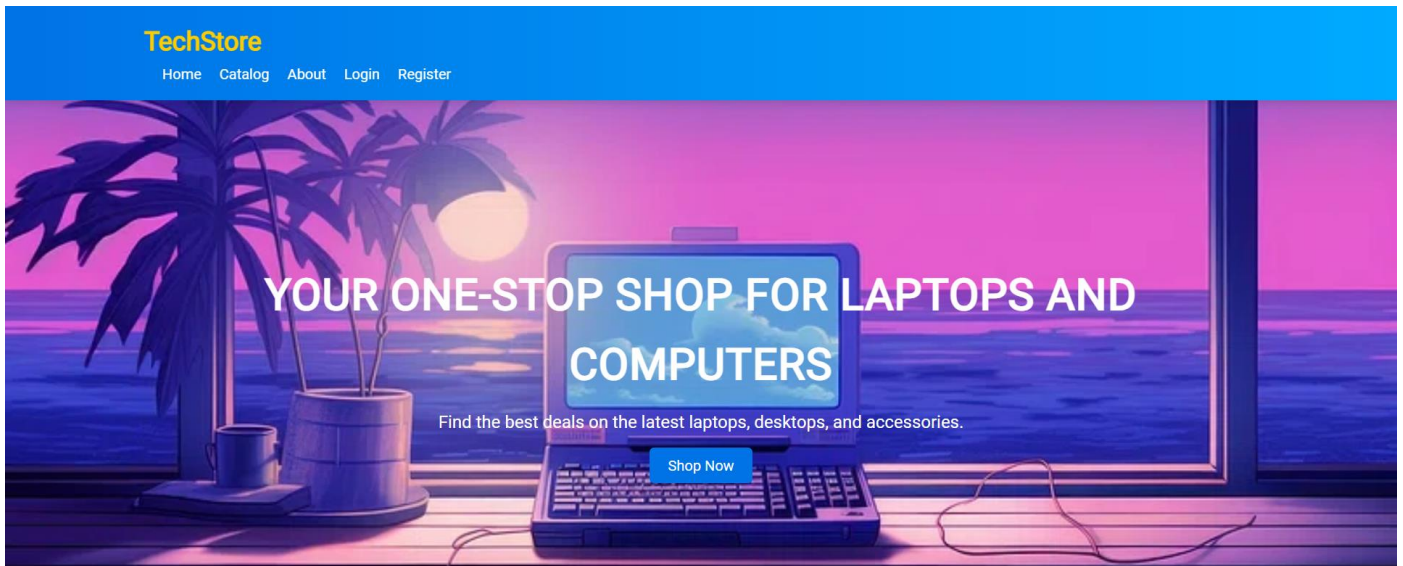
Shop Now button must redirect to the **Catalog Page.**

Register Page (Logged Out User)

Register a user inside the database with a **name**, 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). The **Login here** button should be redirected to the **Login Page**.

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). The **Register here** button should be redirected to the **Register Page**.

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 Offer (Logged in User)

The **Create Offer** page is available to **logged-in users**. It contains a form for adding new device post. Upon success, **redirect** the user to the **Catalog** 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/recipes/create/1234") in the browser address bar.

TechStore

Home   Catalog   About   Profile   Create Offer   Logout

CREATE NEW PRODUCT

Fill in the details below to add a new product to the catalog.

Brand:

Model:

Hard Disk:

Screen Size:

RAM:

Operating System:

CPU:

GPU:

Price:

Color:

Weight:

Image:

Create Product

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Devices (For logged in users and logged out users)

A list of all devices.. Each post must be displayed with the **brand,** the **model,** the **price,** the **CPU,** the **GPU,** the **screen size,** 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 device post.

If there are **NO** post in the database yet, display **"There haven't been any devices posted yet."**

TechStore

Home   Catalog   About   Login   Register

PRODUCT CATALOG

Explore our extensive range of laptops, desktops, and accessories.

There haven't been any devices posted yet.
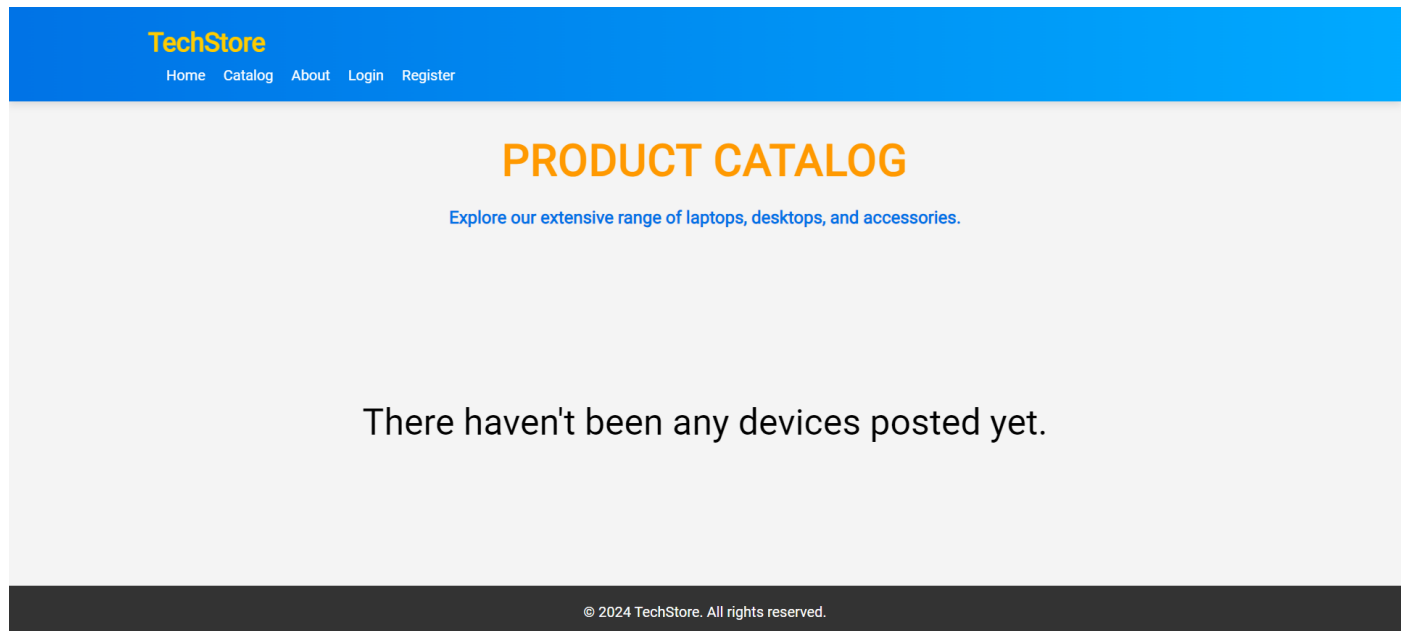
Details Page (For logged in users and logged out users)

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

Information about the devices:

- **Brand**
- **Model**
- **Hard Disk**
- **Screen Size**
- **Ram**
- **Operating System**
- **CPU**
- **GPU**
- **Price**
- **Color**
- **Weight**
- **Buttons** (Depending on the status of the currently logged in user)

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Details Page (Logged out users)

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

TechStore

Home   Catalog   Profile   Create Offer   About   Logout

LAPTOP DETAILS

Brand: Acer

Model: Nitro 5 AN515-58

Hard Disk: 512GB SSD

Screen Size: 15.6 inches

RAM: 16GB

Operating System: Windows 10

CPU: Intel Core™ i5-12450H

GPU: NVIDIA GeForce RTX™ 3050

Price: $1499

Color: Black

Weight: 2.5kg

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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 devices post**), he should see the **[Delete]** and **[Edit]** buttons.

TechStore
Home   Catalog   Profile   Create Offer   About   Logout

LAPTOP DETAILS

Brand: Acer

Model: Nitro 5 AN515-58

Hard Disk: 512GB SSD

Screen Size: 15.6 inches

RAM: 16GB

Operating System: Windows 10

CPU: Intel Core™ i5-12450H

GPU: NVIDIA GeForce RTX™ 3050

Price: $1499

Color: Black

Weight: 2.5kg

Edit   Delete

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Details Page (Logged in user who has not preferred devices)

If the currently logged-in user is **not the owner** (a user who is **not** the creator of this devices post) and **he has not preferred the post**, he should see a **Prefer** button. Each **user who is NOT the owner of the current post** must be able to click on the **[Prefer]** button and **prefer current devices**. If **successful**, redirect the user to the **current device post details page**.

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

Details Page (Logged in user already preferred device post)

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

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

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

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

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

Each **owner** can edit their **post**. Clicking the **[Edit]** button for a specific post on the details page should display the **Edit page**, all fields being populated with recipe data. It contains a form with input fields for all relevant properties. If **successful**, redirect the user to the **current device 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 post should **NOT** be able to reach this page by typing its URL (e.g. "http://localhost:3000/devices/edit/1234") in the browser address bar.

TechStore

Home   Catalog   About   Profile   Create Offer   Logout

EDIT PRODUCT

Fill in the details below to edit a product to the catalog.

Brand:

Acer

Model:

Nitro 5 AN515-58

Hard Disk:

512GB SSD

Screen Size:

15.6

RAM:

16

Operating System:

Windows 10

CPU:

Intel Core™ i5-12450H

GPU:

NVIDIA GeForce RTX™ 3050

Price:

1499

Color:

Black

Weight:

2.54

Image:

https://s13emagst.akamaized.net/products/53590/53589192/images/res_790dbf4452932f219ec12

Edit Product

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

Visualize the static page:

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 **About** 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 **Catalog (Listed all device offers)**.

- **Guest** (not logged in) can access the **Details** page without functionality.
- **Users** (logged in) can access the **Home** page.
- **Users** (logged in) users can access the **About** page.
- **Users** (logged in) can access the **Details** page and functionality.
    - **Users** (not post owners) can **prefer other's post**.
    - **Users** (post owners) can **Edit** and **Delete** the current post
- **Users** (logged in) can access the **Profile** page and functionality.
- **Users** (logged in) can access the **Create Offer** page and functionality.
- **Users** (logged in) can access the **Logout** functionality.

Use the following view for **invalid paths**:
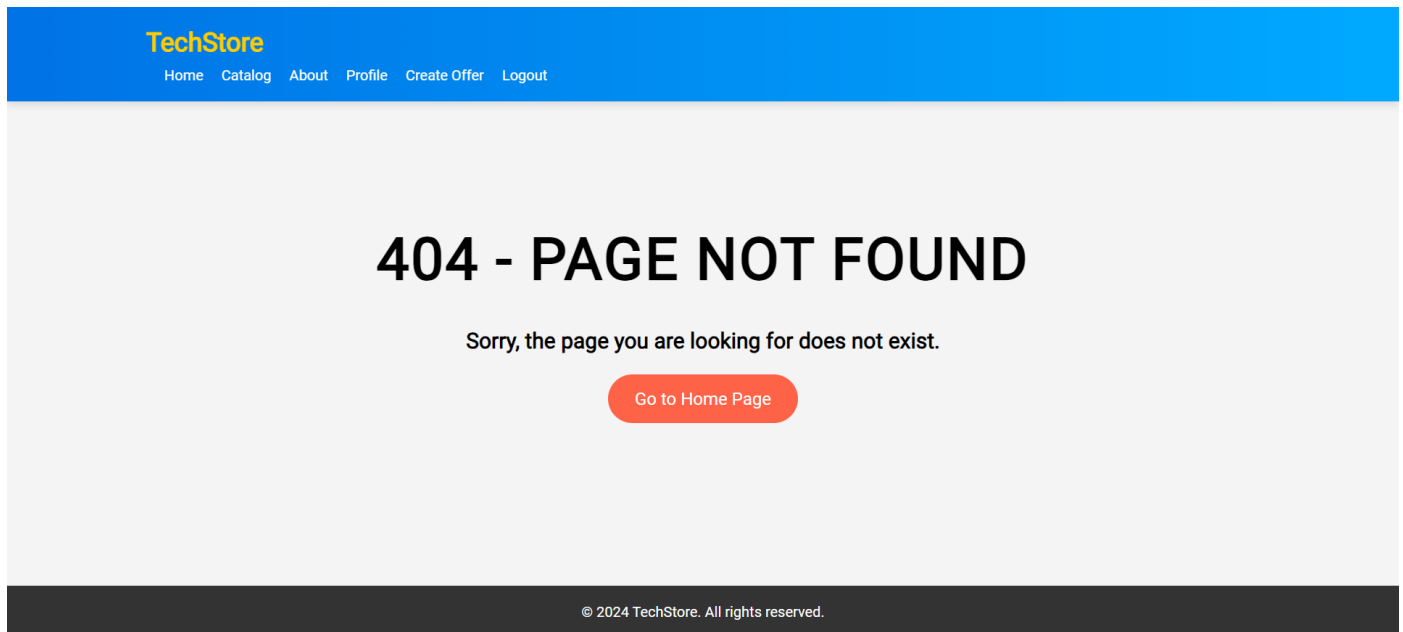
The **Go to Home Page** button should be redirected to the **Home Page**.

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 **name** should be **between 2 and 20 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**
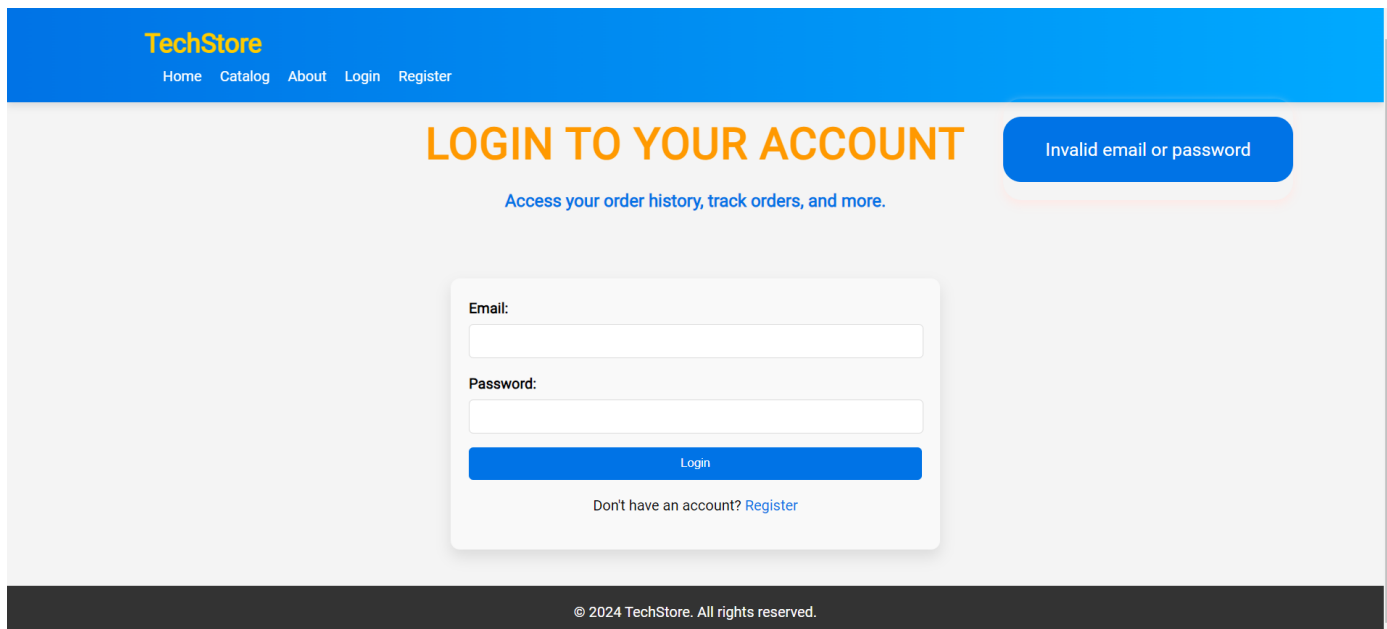
Devices

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

- The **Brand** should be **at least 2 characters**
- The **Model** should be **at least 5 characters**
- The **Hard Disk** should be **at least 5 characters**
- The **Screen Size** should be **at least 1 characters**
- The **Ram** should be **at least 2 characters**
- The **Operating System** should be **between 5 and 20 characters long**
- The **CPU** should be **between 10 and 50 characters long**
- The **GPU** should be **between 10 and 50 characters long**
- The **Price** should be **positive number**
- The **Color** should be **between 2 and 10 characters long**
- The **Weight** should be **at least 1 characters long**
- The **Image** should start with **http:// or https://**

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CREATE NEW PRODUCT

Fill in the details below to add a new product to the catalog.

Path `model` (`Ni`) is shorter than the minimum allowed length (5).

Brand:

Model:

Hard Disk:

Screen Size:

RAM:

Operating System:

CPU:

GPU:

Price:

Color:

Weight:

Image:

Create Product

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8. *Bonus – Profile

Each **logged-in user** should be able to view their profile information by clicking on [**Profile**]. On the profile page, the user should see their **email** and the **devices** they have **created**, as well as the devices they preferred. The posts should contain **image**, **brand**, **model** and **View Details** button.

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USER PROFILE

Welcome back, John Doe **(john.doe@example.com)**

CREATED LAPTOPS

Brand: ASUS

Model: X515 A516KA

View Details

Brand: Lenovo

Model: IdeaPad 1 15ALC7

View Details

PREFERRED LAPTOPS

Brand: Dell

Model: Vostro 3520

View Details

Brand: Acer

Model: Nitro 5 AN515-58

View Details

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If there are **no created post** yet, the message **"You haven't created a post yet"** should be visualized.

If the user **hasn't prefer any devices** yet, the message **"You haven't preferred any devices yet"** should be visualized.

TechStore

Home   Catalog   About   Profile   Create Offer   Logout

USER PROFILE

Welcome back, John Doe (john.doe@example.com)

CREATED LAPTOPS

Brand: ASUS

Model: X515 A516KA

View Details

Brand: Lenovo

Model: IdeaPad 1 15ALC7

View Details

PREFERRED LAPTOPS

You haven't preferred any devices yet

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