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Project On

Code Refactoring and Bug Fixing

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Objective:

The objective of the debugging process was to identify and rectify issues in the existing codebase of a Note Taking Application developed using Python, Flask, and HTML.

Throughout the debugging process, several issues were identified in the existing codebase. Below is a summary of each identified bug and the corresponding solutions:

Bugs Fixed:

Incorrect Request Method Handling in Flask:

Original Issue:

The Flask route was configured to only handle POST requests, neglecting GET requests. This limitation caused a method not allowed error when initially accessing the page.

Method Not Allowed

The method is not allowed for the requested URL.

Solution:

 To address this, the allowed methods in the Flask route were updated to include both GET and POST methods using methods=["GET", "POST"]. This change enables the application to handle both types of requests.

Incorrect Form Method:

Original Issue:

The HTML form tag lacked the method attribute, resulting in the default method being "GET." This led to issues when submitting the form for adding notes.

```html
<body>
    <form action="">
        <input type="text" name="note" placeholder="Enter a note">
        <button>Add Note</button>
    </form>
```

Solution:

The form tag was updated to include method="post" to ensure that the form data is submitted using the POST method, which is essential for handling note additions.

```html
<form method="POST" action="/">
    <input type="text" name="note" placeholder="Enter a note">
    <button type="submit">Note Down</button>
</form>
```

Incorrect Retrieval of Note in Flask Route:

Original Issue:

The code for retrieving notes from the form used request.args.get("note"), which is suitable for GET requests but not for forms submitted via POST.

```python
def index():
    note = request.args.get("note")
    notes.append(note)
    return render_template("home.html", notes=notes)
```

Solution:

The note retrieval code in the Flask route was corrected to use request.form.get("note"), ensuring the proper handling of note submissions through POST requests.

```python
@app.route('/', methods=["GET", "POST"])
def index():
    if request.method == "POST":
        note = request.form.get("note")
        notes.append(note)
    return render_template("home.html", notes=notes)
```

Flask Server Final:

```python
from flask import Flask, render_template, request, redirect

app = Flask(__name__)

notes = []

@app.route('/', methods=["GET", "POST"])
def index():
    if request.method == "POST":
        note = request.form.get("note")
        notes.append(note)
    return render_template("home.html", notes=notes)

@app.route('/delete/<int:index>', methods=["POST"])
def delete(index):
    if 0 <= index < len(notes):
        del notes[index]
    return redirect('/')

@app.route('/delete/all', methods=["POST"])
def delete_all():
    notes.clear()
    return redirect('/')

if __name__ == '__main__':
    app.run(debug=True)
```

Missing Form Submission URL:

Original Issue:

The HTML form action attribute was missing, causing the form data to be submitted to the current URL instead of the intended route.

```html
<form action="">
    <input type="text" name="note" placeholder="Enter a note">
    <button>Add Note</button>
</form>
```

Solution:

To rectify this, the form action was updated to action="/". This change ensures that the form data is correctly submitted to the desired route.

```html
<form method="POST" action="/">
    <input type="text" name="note" placeholder="Enter a note">
    <button type="submit">Note Down</button>
</form>
```

Enhancements and Additions:

CSS Styling:

Original State:

The original styling was minimal and lacked visual appeal.

Enhancement:

The styling was overhauled to provide a more visually appealing layout. Flexbox was used to organize the left and right sidebars alongside the main content. Additionally, animations were introduced to create an interactive experience, such as a bouncing effect for the logo in the right sidebar.

```
<style>
    body {
    font-family: Arial, sans-serif;
    margin: 0;
    display: flex;
    height: 100vh;
    background-color: #ff4040;
    color: #fff;
    }

    .left-sidebar, .right-sidebar {
        width: 20%;
        background-color: #fff;
        padding: 20px;
        box-shadow: 2px 0 5px rgba(0, 0, 0, 0.1);
    }

    .main-content {
        flex: 1;
        padding: 20px;
    }

    h1, h2 {
        font-size: 2em;
        font-weight: bold;
        margin-bottom: 20px;
    }

    form {
        background-color: #fff;
```

```css
            padding: 20px;
            border-radius: 5px;
            box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
            text-align: center;
        }

        input[type="text"] {
            width: 70%;
            padding: 10px;
            margin-right: 10px;
            border: 1px solid #ccc;
            border-radius: 3px;
            box-sizing: border-box;
        }

        button {
            padding: 10px 15px;
            background-color: #4caf50;
            color: #fff;
            border: none;
            border-radius: 3px;
            cursor: pointer;
        }

        button:hover {
            background-color: #45a049;
        }

        ul {
            list-style-type: none;
            padding: 0;
            text-align: center;
            color: #000;
        }

        li {
            background-color: #fff;
            padding: 10px;
            margin-bottom: 10px;
            border-radius: 3px;
            box-shadow: 0 0 5px rgba(0, 0, 0, 0.1);
            color: #000;
        }


        .left-sidebar {
            display: flex;
            flex-direction: column;
            align-items: center;
```

```css
    }

    .left-sidebar .logo {
        max-width: 100%;
    height: auto;
    margin-bottom: 20px;
}

.left-sidebar .contact-details {
    text-align: center;
    margin-top: 20px;
    color: #000;
}

.left-sidebar .contact-details h3 {
    font-size: 1.5em;
    margin-bottom: 10px;
}


/* Animations for the contact details in the left sidebar */
.left-sidebar .contact-details,
.right-sidebar h2,
.right-sidebar p {

    transform: translateY(20px);
    transition: opacity 0.5s ease-in-out, transform 0.5s ease-in-out;
}

.left-sidebar:hover .contact-details,
.right-sidebar:hover h2,
.right-sidebar:hover p {

    transform: translateY(0);
}

/* Animations for the main content in the center */
.main-content {

    transform: translateY(20px);
    transition: opacity 0.5s ease-in-out, transform 0.5s ease-in-out;
}

.main-content:hover {

    transform: translateY(0);
}
```

```css
    ul:hover li {

        transform: translateY(0);
    }
form {
background-color: #fff;
padding: 10px; /* Reduce form size */
border-radius: 5px;
box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
text-align: center;
margin-bottom: 10px; /* Separate form from notes */
}

input[type="text"] {
width: 50%;
padding: 8px;
margin-right: 10px;
border: 1px solid #ccc;
border-radius: 3px;
box-sizing: border-box;
}

button {
padding: 8px 12px;
font-size: 14px;
background-color: #4caf50;
color: #fff;
border: none;
border-radius: 3px;
cursor: pointer;
}


.right-sidebar {
    display: flex;
    flex-direction: column;
    align-items: center;
    justify-content: center;
}

.right-sidebar .logo {
    max-width: 100%;
    height: auto;
    margin-bottom: 20px;
}
/* Bouncing animation for the logo */
.logo {
    max-width: 100%;
    height: auto;
```

```css
        margin-bottom: 20px;
        animation: bounce 0.5s infinite alternate;
    }

@keyframes bounce {
    0% {
        transform: translateY(0);
    }
    100% {
        transform: translateY(-10px);
    }
}


/* Animations for the main content in the center */
.main-content {
    transform: scale(0.8);
    animation: fadeInUp 1s forwards;
}

@keyframes fadeInUp {
    to {

        transform: scale(1);
    }
}
</style>
```

HTML Structure:

Original State:

The HTML structure was basic and lacked clear organization.

Enhancement:

The HTML structure was refined by introducing separate sections for the left sidebar, main content, and right sidebar. Logos were added to both sidebars for a more professional appearance.

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Note Taking App</title>

</head>


<body>
    <div class="left-sidebar">
        <img class="logo"
src="C:\\Users\\svani\\Downloads\\Innomatics_Task4\\note_taking_app\\logo.jpg"
alt="Logo">
        <h2>Contact Details</h2>
        <div class="contact-details">
            <h1><span style="font-weight: bold;">Name:</span></h1>
            <p style="font-weight: bold;">S DINESH KUMAR</p>

            <h5>Gmail: svani4830@gmail.com</h5>
            <p>
                <a href="mailto:svani4830@gmail.com" target="_blank">
                    <img
src="C:\\Users\\svani\\Downloads\\Innomatics_Task4\\note_taking_app\\Gmaillogo
.png" alt="Gmail Logo" style="width: 20px; height: auto;">
                </a>
            </p>
            <h5>GitHub:</h5>
            <p>
```

```html
                    <a href="https://github.com/SDineshKumar1304"
target="_blank">
                        <img
src="C:\\Users\\svani\\Downloads\\Innomatics_Task4\\note_taking_app\\logogithu
b.png" alt="GitHub Logo" style="width: 20px; height: auto;">
                    </a>
                </p>

                <h5>LinkedIn:</h5>
                <p>
                    <a href="https://www.linkedin.com/in/s-dinesh-kumar2004/"
target="_blank">
                        <img
src="C:\\Users\\svani\\Downloads\\Innomatics_Task4\\note_taking_app\\logolinke
din.png" alt="LinkedIn Logo" style="width: 20px; height: auto;">
                    </a>
                </p>
            </div>
        </div>

            </div>
        </div>

        <div class="main-content">
            <h1>INNOMATICS RESEARCH LABS PROJECT</h1>
            <h2>Notes Taking App</h2>

            <form method="POST" action="/">
                <input type="text" name="note" placeholder="Enter a note">
                <button type="submit">Note Down</button>
            </form>

            <form method="POST" action="/delete/all">
                <button type="submit" class="delete-all-button">Delete
All</button>
            </form>

            <ul>
                {% for note in notes %}
                    <li>
                        {{ note }}
                        <form method="POST" action="/delete/{{ loop.index }}">
                            <button type="submit" class="delete-
button">Delete</button>
                        </form>
                    </li>
                {% endfor %}
```

```
        </ul>
        <button onclick="printNotes()">Print Notes</button>
      </div>
      <div class="right-sidebar">
      <img class="logo"
src="C:\\Users\\svani\\Downloads\\Innomatics_Task4\\note_taking_app\\Noteslogo
.jpg" alt="Right Sidebar Logo">
      <h2>Right Sidebar</h2>
      <p>Right sidebar content goes here.</p>
   </div>
   <script>
      function printAllNotes() {
         window.print();
      }
   </script>
</body>
</html>
```

Added Contact Details:

Original State: Contact details were not provided in the initial version.

Enhancements to the Left Sidebar:

Logo Placement:

Original State:

The original left sidebar had no logo.

Enhancement:

A logo was introduced at the top of the left sidebar. This logo provides visual branding and contributes to the overall identity of the application.

Flexbox Layout:

Enhancement:

The left sidebar layout was improved using flexbox. The contents, including the logo and contact details, are now vertically aligned in a column, providing a more organized and visually appealing structure.

Contact Details Section:

Original State:

The initial version did not include specific contact details.

Enhancement:

A section for contact details was introduced beneath the logo. This section includes the user's name, Gmail address, and links to GitHub and LinkedIn profiles. These details offer users additional means of communication and provide a professional touch to the application.

Contact Details Styling:

Enhancement:

Styling was applied to the contact details section, including font size adjustments, bold formatting for certain elements, and consistent color schemes. These improvements enhance readability and visual appeal.

Hover Animations for Contact Details:

Enhancement:

 Hover animations were introduced for the contact details section. When the user hovers over the left sidebar, the contact details smoothly transition upward, providing a subtle and interactive effect. This enhances the overall user experience and adds a touch of interactivity.

Logo Bounce Animation:

Enhancement:

A bouncing animation was added to the logo. This animation creates a playful and attention-grabbing effect, making the left sidebar more engaging.

Consistent Color Scheme:

Original State:

The color scheme was not consistent throughout the left sidebar.

Enhancement:

A consistent color scheme was applied to the left sidebar elements, ensuring a cohesive and harmonious visual presentation. This consistency contributes to a more polished and professional appearance.

Improved Typography:

Enhancement:

Typography enhancements were applied to headings and paragraphs within the left sidebar. Adjustments such as font size, weight, and spacing contribute to a more refined and aesthetically pleasing text presentation.

Responsive Design:

Button Styling:

Enhancement:

Buttons in the form were styled for a more visually pleasing appearance. Hover effects were added to improve user feedback and interactivity.
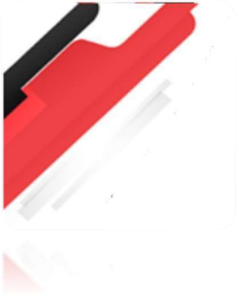
Form Styling:

Enhancement:

Form styling was enhanced with a white background, border-radius, and a box shadow for a cleaner and more modern look. Adjustments were made to the form size and margin to improve its separation from the notes.

Print Functionality:

Enhancement:

A button to trigger the browser's print functionality was introduced using JavaScript. This addition allows users to easily print the notes.

```
<script>
    function printAllNotes() {
        window.print();
    }
</script>
```

Flask Routes:

Original State:

The Flask routes were limited to handling note additions only.

Enhancement:
Additional routes were introduced for deleting specific notes (/delete/<int:index>) and deleting all notes (/delete/all). These routes use the redirect function to navigate the user back to the main page after a deletion action.

Print Functionality Script:
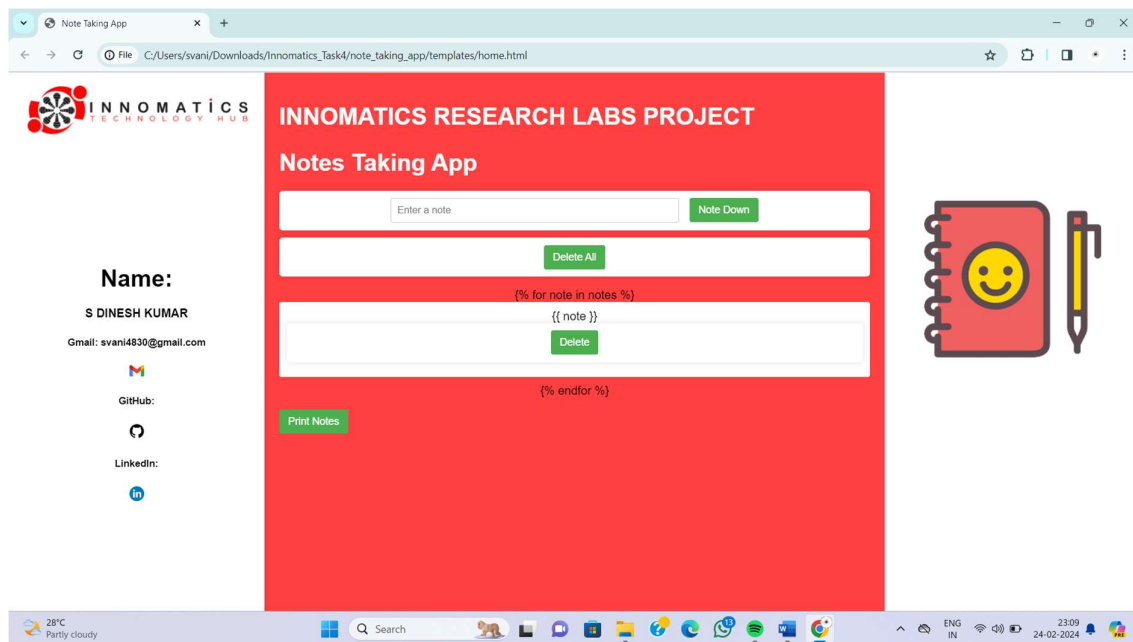
Original State:

The application did not have a script for print functionality.

Enhancement:

A JavaScript function (printAllNotes()) was added to trigger the print functionality when the corresponding button is clicked. This script enhances the overall usability of the application.

UI:

Result:

Conclusion:

The debugging and refactoring process focused on addressing specific bugs related to form handling, request methods, and URL submissions. Simultaneously, enhancements were made to the user interface, styling, and functionality of the Note Taking Application. The result is a more polished and user-friendly application that not only fixes the identified issues but also adds new features and improves the overall user experience. The combination of improved HTML structure, CSS styling, and Flask routes contributes to a more robust and visually appealing Note Taking App.