Development PROJECT
Regex Matching Web App

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Objective

- Your task is to replicate the core functionality of the website **regex101.com**. This entails creating a web application that allows users to input a test string and a regular expression (regex) and displays all the matches found.

- Link: *https://irl-regex-matching-web-app.streamlit.app/*

Steps

▶ 1. Create a new directory for your project and navigate into it.

▶ 2. Set up your virtual development environment:

   - Install Flask, a Python web framework, using pip if not already installed: `*pip install Flask*`.

▶ 3. Initialize a new Flask application:

   - Create a new Python file named `*app.py*`.

   - Import Flask and create a new Flask app instance.

   - Define a route for the home page ("/") where users can input the test string and regex.

   - Render an HTML template containing a form with fields for the test string and regex, and a submit button.

Steps

▶ **4. Create the HTML template:**

  - Create a new directory named `templates` within your project directory.

  - Inside the `templates` directory, create a new HTML file named `index.html`.

  - Design the HTML form with input fields for the test string and regex, and a submit button.

▶ **5. Define a route to handle form submission:**

  - Define a new route **("/results")** in your `app.py` file to handle form submission.

  - Extract the test string and regex submitted by the user from the form data.

  - Use Python's `re` module to perform regex matching on the test string.

  - Store the matched strings in a list.

Steps

▶ **6. Render the results:**

    - Pass the list of matched strings to the HTML template.

    - Modify the HTML template to display the matched strings below the input form.

▶ **7. Test your application:**

    - Run your Flask application (*python app.py*).

    - Open a web browser and navigate to http://localhost:5000 to access your application.

    - Input various test strings and regex patterns to ensure the application displays the correct matches.

app.py Code

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


app = Flask(__name__)


@app.route('/')
def index():
    return render_template('index.html')


@app.route('/regex_result', methods=['POST'])
def regex_result():
    pattern = request.form['pattern']
    text = request.form['text']
    print(pattern)
    matches = re.findall(rf"{pattern}", text)
    return render_template('index.html',pattern=pattern,text=text,matches=matches)


@app.route('/email')
def index1():
    return render_template('email.html',valid_mail=None)


@app.route('/email_result', methods=['POST'])
def email_result():
    pattern =r"[A-Za-z0-9._%+-]+@[A-Za-z0-9.-]+[.][\w]{2,3}$"
    text = request.form['mail']
    mails= re.findall(pattern, text)
    if mails!=[]:
        return render_template('email.html', valid_mail=True,text=text)
    else:
        return render_template('email.html', valid_mail=False,text=text)
if __name__ == '__main__':
    app.run(debug=True,host="0.0.0.0")
```

index.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Regex App</title>
</head>
<body style="font-family: Arial, sans-serif; background-color: #f8f9fa; margin: 0; padding: 0;">

    <h1 style="text-align: center; color: #343a40; margin-top: 20px;">Innomatics Research Labs Feb 2024 Internship </h1>

    <h1 style="text-align: center; color: #343a40; margin-top: 20px;">Name: Mohammad Wasiq   Intern ID: IN1240273</h1>

    <nav style="background-color: #343a40; padding: 10px 0;">
        <ul style="list-style-type: none; margin: 0; padding: 0; text-align: center;">
            <li style="display: inline; margin-right: 20px;"><a href="/" style="color: #ffffff; text-decoration: none; font-weight: bold;">Regex app</a></li>
            <li style="display: inline; margin-right: 20px;"><a href="/email" style="color: #ffffff; text-decoration: none; font-weight: bold;">Email validation</a></li>
        </ul>
    </nav>
```

index.html

```html
    <div class="container" style="max-width: 800px; margin: 20px auto; padding: 20px; background-color: #ffffff; border-radius: 8px; box-shadow: 0 0 10px rgba(0, 0, 0,
0.1);">
        <h2 style="text-align: center; margin-bottom: 20px; color: #343a40;">Regular Expression 101</h2>
        <form action="/regex_result" method="post">
            <label style="display: block; margin-bottom: 5px; font-weight: bold; color: #343a40;">Regex Pattern:</label>
            <input type="text" id="pattern" name="pattern" style="width: 100%; padding: 10px; margin-bottom: 10px; border: 1px solid #ced4da; border-radius: 4px; box-sizing:
border-box;">
            <br>
            <label style="display: block; margin-bottom: 5px; font-weight: bold; color: #343a40;">Test string:</label>
            <textarea id="text" name="text" rows="4" cols="50" style="width: 100%; padding: 10px; margin-bottom: 10px; border: 1px solid #ced4da; border-radius: 4px; box-
sizing: border-box;"></textarea>
            <br>
            <button type="submit" style="padding: 10px 20px; background-color: #007bff; color: #ffffff; border: none; border-radius: 4px; cursor: pointer;">Search</button>
        </form>
        <h3 style="margin-top: 20px; margin-bottom: 10px; color: #343a40;">Matches:</h3>
        <p style="margin-bottom: 10px; color: #343a40;">
            {% for match in matches %}
                {{ match }}
                {% if not loop.last %}, {% endif %}
            {% endfor %}
        </p>
    </div>
</body>
</html>
```

email.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Email Validation</title>
</head>
<body style="font-family: Arial, sans-serif; background-color: #f8f9fa; margin: 0; padding: 0;">

    <nav style="background-color: #343a40; padding: 10px 0;">
        <ul style="list-style-type: none; margin: 0; padding: 0; text-align: center;">
            <li style="display: inline; margin-right: 20px;"><a href="/" style="color: #ffffff; text-decoration: none; font-weight: bold;">Regex app</a></li>
            <li style="display: inline; margin-right: 20px;"><a href="/email" style="color: #ffffff; text-decoration: none; font-weight: bold;">Email validation</a></li>
        </ul>
    </nav>

    <div class="container" style="max-width: 800px; margin: 20px auto; padding: 20px; background-color: #ffffff; border-radius: 8px; box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);">
        <form action="/email_result" method="post">
            <label style="display: block; margin-bottom: 5px; font-weight: bold; color: #343a40;">Enter your email:</label>
            <input type="text" name="mail" style="width: 100%; padding: 10px; margin-bottom: 10px; border: 1px solid #ced4da; border-radius: 4px; box-sizing: border-box;">
```
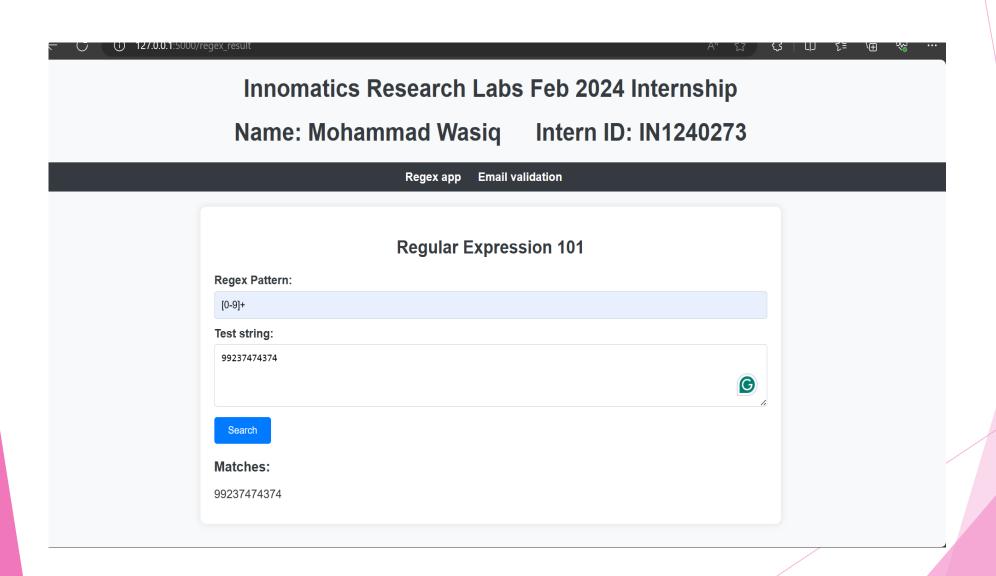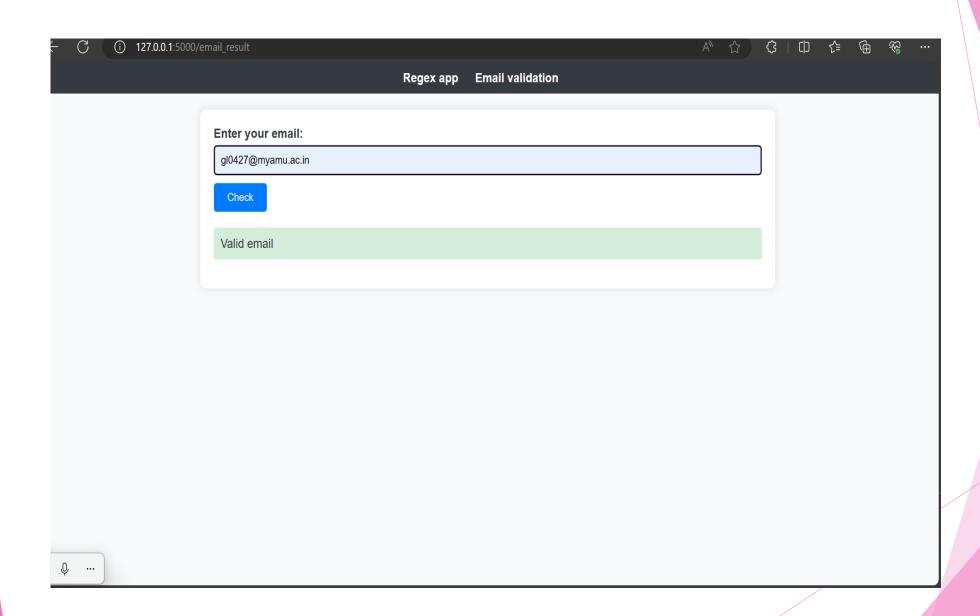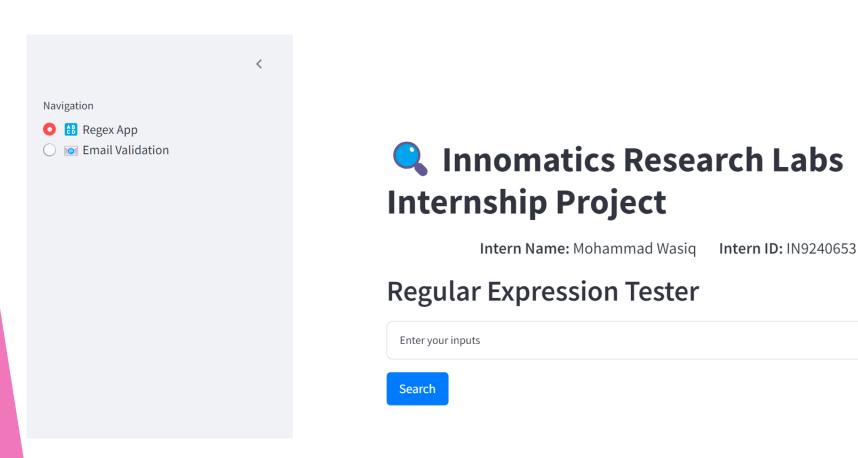
email.html

```html
sizing: border-box;">
            <br>
            <input type="submit" value="Check" style="padding: 10px 20px; background-color: #007bff; color: #ffffff; border: none; border-radius: 4px;
cursor: pointer;">
        </form>
        <ul style="list-style-type: none; padding: 0; margin-top: 20px;">
            {% if valid_mail == True %}
                <li style="padding: 10px; background-color: #d4edda; border-radius: 4px; box-shadow: 0 0 5px rgba(0, 0, 0, 0.1); margin-bottom: 10px;
color: #343a40;">Valid email</li>
            {% elif valid_mail == False %}
                <li style="padding: 10px; background-color: #f8d7da; border-radius: 4px; box-shadow: 0 0 5px rgba(0, 0, 0, 0.1); margin-bottom: 10px;
color: #343a40;">Not a valid email</li>
            {% endif %}
        </ul>
    </div>
</body>
</html>
```

After Execution Code my code is successfully run

Regex app   **Email validation**

Enter your email:
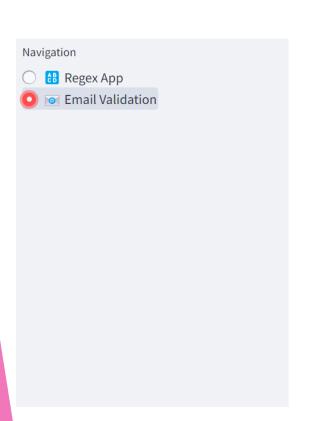
gl0427@myamu.ac.in

Check

Valid email

Streamlit App Depoyment

https://irl-regex-matching-web-app.streamlit.app/

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https://irl-regex-matching-web-app.streamlit.app/

THANK YOU