GRT INSTITUTE OF ENGINEERING AND TECHNOLOGY, Tiruttani

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROJECT TITLE

Image Recognition with IBM Cloud Visual Recognition

College code:1103

Phase 3

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WEB INTERFACE WHERE USERS CAN UPLOAD IMAGES AND VIEW THE AI GENERATED CAPTION

Building a simple image recognition application using HTML, CSS, and JavaScript involves integrating a pre-trained machine learning model for image recognition into a web interface.
I'll use the Clarifai API as an image recognition service. Here's how you can create a basic image recognition web app:

Step 1: Sign Up for Clarifai

- We'll need an API key from Clarifai.
- Sign up at https://www.clarifai.com/
- Obtain your API key.

Step 2: Set Up Your Project Structure

Create a project folder with the following structure:

1. Index.html
2.Style.css
3.Script.js

Step 3: HTML (index.html) - User Interface
Create the HTML file (index.html) for your image recognition app:

HTML:

```
<!DOCTYPE html>
<html lang="en">
```

```
<head>
   <meta charset="UTF-8">
   <title>Image Recognition</title>
   <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
   <h1>Image Recognition App</h1>
   <input type="file" id="imageInput" accept="image/*">
   <button onclick="recognizeImage()">Recognize Image</button>
   <div id="results"></div>
   <script src="script.js"></script>
</body>
</html>
```

Step 4: CSS (style.css) – Styling
Create a CSS file (style.css) to style your web interface:

CSS:

```
body {
   text-align: center;
   font-family: Arial, sans-serif;
   margin: 20px;
}

h1 {
   color: #333;
}

input[type="file"] {
   display: none;
}

button {
   background-color: #4CAF50;
```

```
    color: white;
    border: none;
    padding: 10px 20px;
    cursor: pointer;
}

#results {
    margin: 20px;
    font-style: italic;
    color: #888;
    text-align: left;
}
```

Step 5: JavaScript (script.js) - Image Recognition Logic

Create a JavaScript file (script.js) to handle image recognition using the Clarifai API.

JAVASCRIPT:

```
// Initialize the Clarifai API with your API key
const apiKey = '2c7c101d009748658949f3ed2a3fbe78';
const clarifai = new Clarifai.App({ apiKey });

// Function to recognize an uploaded image
function recognizeImage() {
    const imageInput = document.getElementById('imageInput');
    const resultsDiv = document.getElementById('results');

    const file = imageInput.files[0];

    if (!file) {
        alert('Please select an image first.');
        return;
    }

    // Predict concepts in the image
    clarifai.models.predict(Clarifai.GENERAL_MODEL, { base64: fileToBase64(file) })
```

```
        .then(response => {
            const concepts = response.outputs[0].data.concepts;
            let resultHTML = '<h2>Recognition Results:</h2>';
            resultHTML += '<ul>';
            concepts.forEach(concept => {
                resultHTML += `<li>${concept.name}: ${concept.value.toFixed(2)}</li>`;
            });
            resultHTML += '</ul>';
            resultsDiv.innerHTML = resultHTML;
        })
        .catch(error => {
            console.error('Error recognizing the image:', error);
            resultsDiv.innerHTML = 'Error recognizing the image. Please try again.';
        });
}

// Helper function to convert an image to base64
function fileToBase64(file) {
    return new Promise((resolve, reject) => {
        const reader = new FileReader();
        reader.onload = () => resolve(reader.result.split(',')[1]);
        reader.onerror = reject;
        reader.readAsDataURL(file);
    });
}
```

Step 6: Running the Application

- Open your HTML file (index.html) in a web browser.
- You can select an image and click the "Recognize Image" button to see the recognition results.
- Make sure you have replaced `'YOUR_CLARIFAI_API_KEY'` with your actual Clarifai API key.