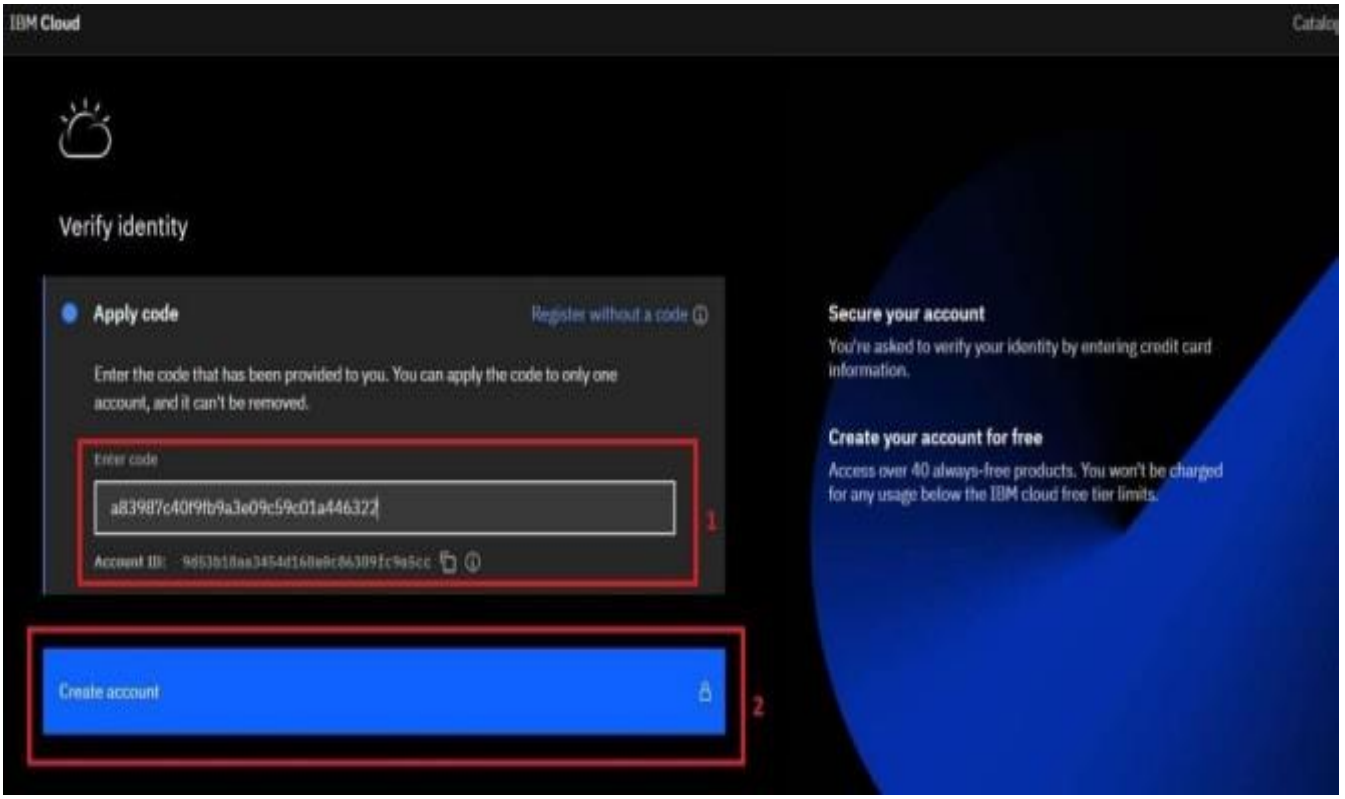
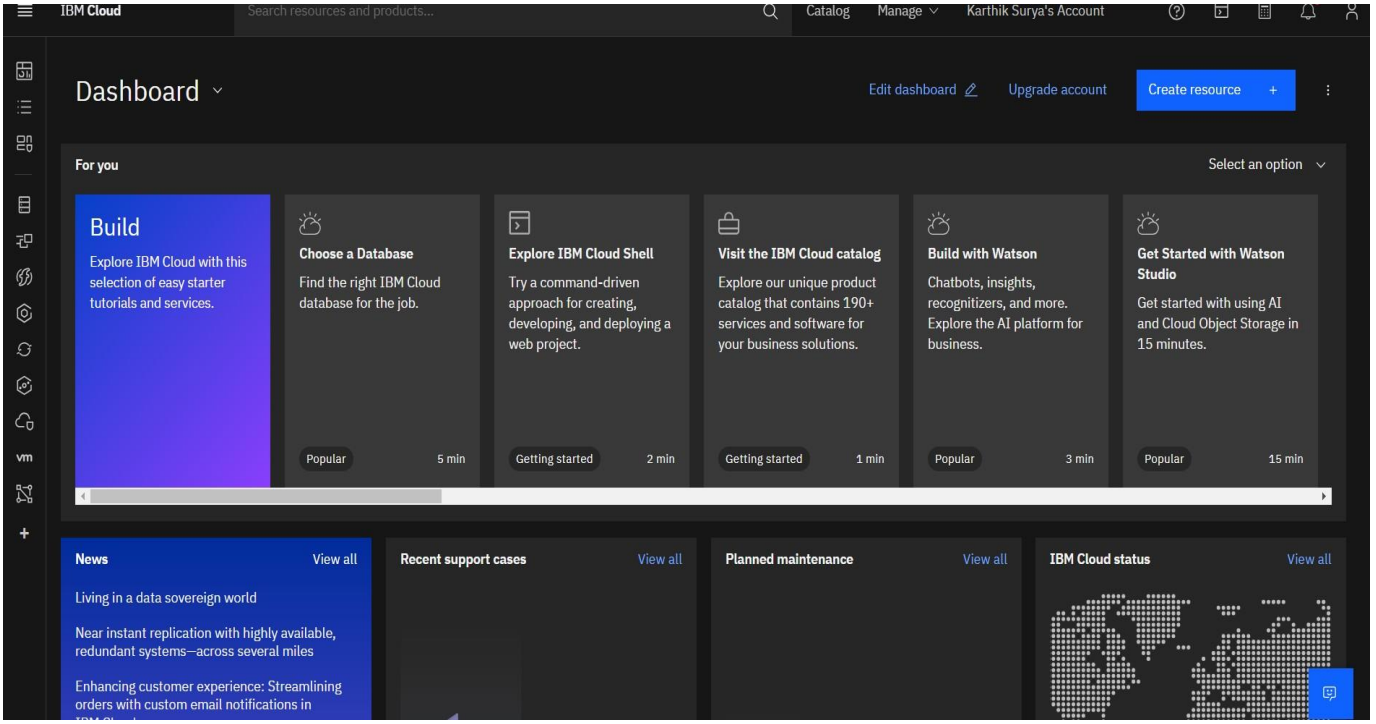
IMAGE RECOGNITION WITH IBM CLOUD VISUAL RECOGNITION
PHASE 3

OVERVIEW

Certainly! Here's an overview of the steps to build an image recognition system using IBM Cloud Visual Recognition and design a simple web interface for users to upload images and view AI-generated captions

IBM CLOUD VISUAL RECOGNITION
CREATE A IBM CLOUD

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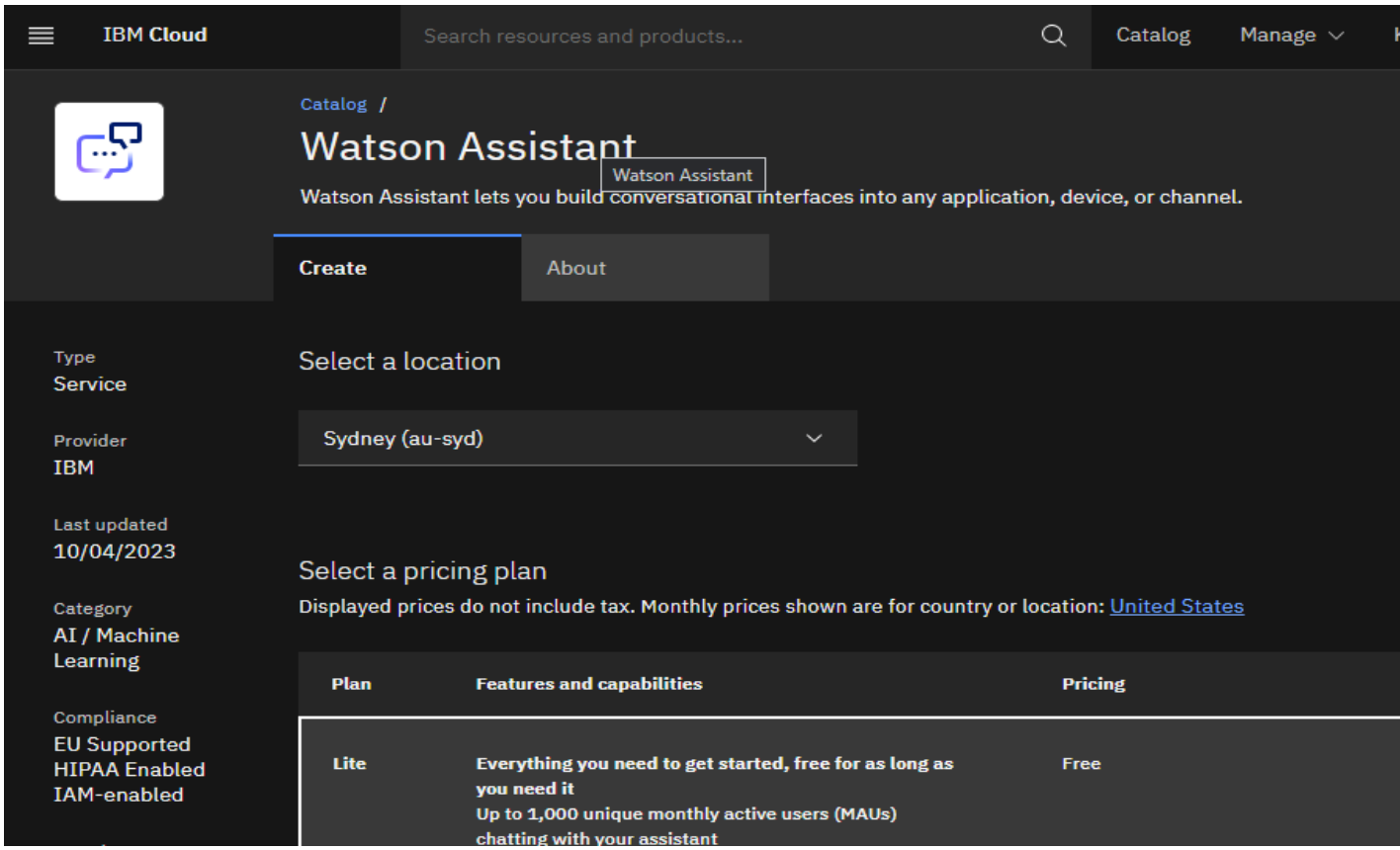
VISUAL RECOGNITION

A technology called visual recognition, commonly referred to as image recognition, enables computers to decipher and comprehend the information of pictures and movies. This area of artificial intelligence (AI) is concerned with teaching machines to identify language, objects, and patterns in visual content. One such IBM service with strong image recognition capabilities is IBM Watson Visual Recognition. It enables you to train unique machine learning models to recognize features and objects in pictures. Typical uses for visual recognition include the following:

Face detection and recognition refers to the ability to identify faces in pictures or videos and even link them to particular people.

Object Recognition: Identifying and labeling objects within images or videos, such as identifying animals, vehicles, or everyday objects.

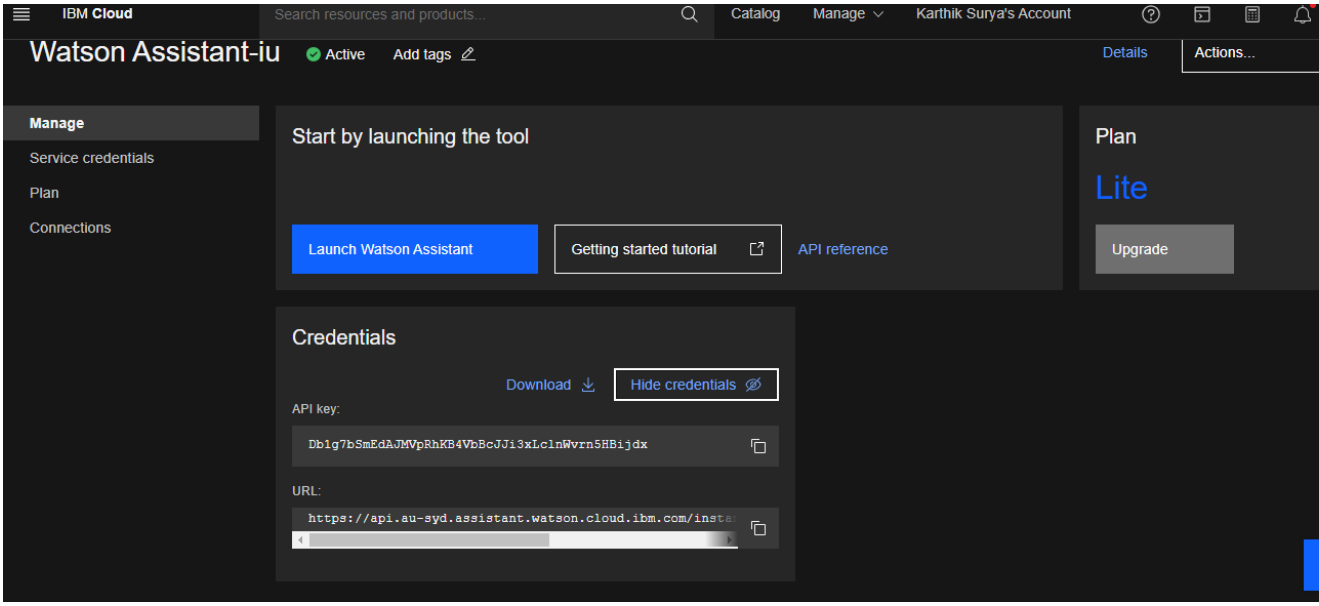
Scene Recognition: Determining the type of scene depicted in an image, like whether it's a cityscape, a beach, or a forest.



API KEY

An access token, also known as an API key, is a special identification that allows you to utilize and access a certain online service or resource.

Regarding IBM Watson Vision Recognition: The IBM Watson Visual Recognition API can only be accessed using the API Key, which is a security credential. Only approved users or apps are able to access the service thanks to the API key. You must supply this lengthy, alphanumeric code in your API calls in order to authenticate and get access to the Visual Recognition service. It serves as documentation of your authorization to use the service and allows for usage tracking.



CODE TO CREATE WEBSITE

STEP 1 CREATE A HTML

index

File Edit View

```
<!DOCTYPE html>
<html>
<head>
    <title>Image Recognition</title>
</head>
<body>
    <h1>Image Recognition</h1>
    <form action="/upload" method="post" enctype="multipart/form-data">
        <input type="file" name="image" accept="image/*">
        <input type="submit" value="Upload">
    </form>
    <h2>AI-Generated Caption:</h2>
    <p>{{ caption }}</p>
</body>
</html>
```

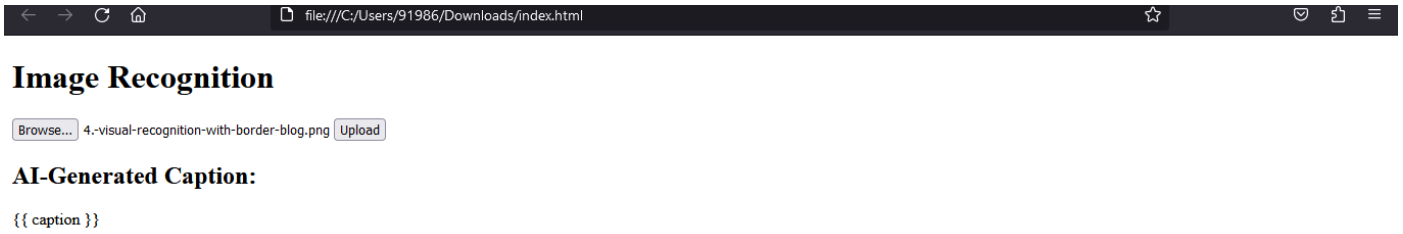
STEP 2:Set Up JavaScript to Call the Visual Recognition API

Create a JavaScript file (script.js) to handle user interactions and call the Visual Recognition API using the API key.

```
document.getElementById('analyzeButton').addEventListener('click', () => {
    const fileInput = document.getElementById('imageInput');
    const image = fileInput.files[0];
```

```
    if (!image) {
        alert('Please select an image to analyze.');
        return;
    }

    const formData = new FormData();
    formData.append('images_file', image);

    // Call the Visual Recognition API
    analyzeImage(formData);
});

async function analyzeImage(imageData) {
    // Replace with your Visual Recognition API key
    const apiKey = 'YOUR_API_KEY';

    const url =
`https://api.us-south.visual-recognition.watson.cloud.ibm.com/instances/YOUR_INSTANCE
_ID/v3/classify?version=2018-03-19`;

    try {
        const response = await fetch(url, {
            method: 'POST',
            headers: {
                'Authorization': `Basic ${btoa(`apikey:${apiKey}`)}`,
            },
            body: imageData,
        });

        if (response.ok) {
            const result = await response.json();
            displayCaption(result);
        } else {
            alert('Error analyzing the image. Please try again.');
        }
    } catch (error) {
        console.error('An error occurred:', error);
    }
}

function displayCaption(result) {
    const caption = result.images[0].classifiers[0].classes[0].class;
    const captionElement = document.getElementById('caption');
    captionElement.textContent = caption;
```

```
}
// Replace with your Visual Recognition API key
const apiKey = 'YOUR_API_KEY';

// Event listener for the "Analyze Image" button
document.getElementById('analyzeButton').addEventListener('click', () => {
    const fileInput = document.getElementById('imageInput');
    const image = fileInput.files[0];

    const formData = new FormData();
    formData.append('images_file', image);

    // Use the IBM Watson Visual Recognition SDK to analyze the image
    // Include code here to send the image to the Visual Recognition service
    // and display the AI-generated caption in the 'caption' span.
});
```



Conclusion :

With IBM Cloud Visual Recognition, we have successfully developed an image recognition system. Through our online interface, users may upload images, and that you'll send them AI-generated captions that explain what's in the photos. This system can serve as the basis for more sophisticated applications, like information organization, image search, and assistive technologies for the blind. Do not forget to protect your API keys and handle user data with care. For scalability and accessibility, you might also think about launching your application on a cloud platform.