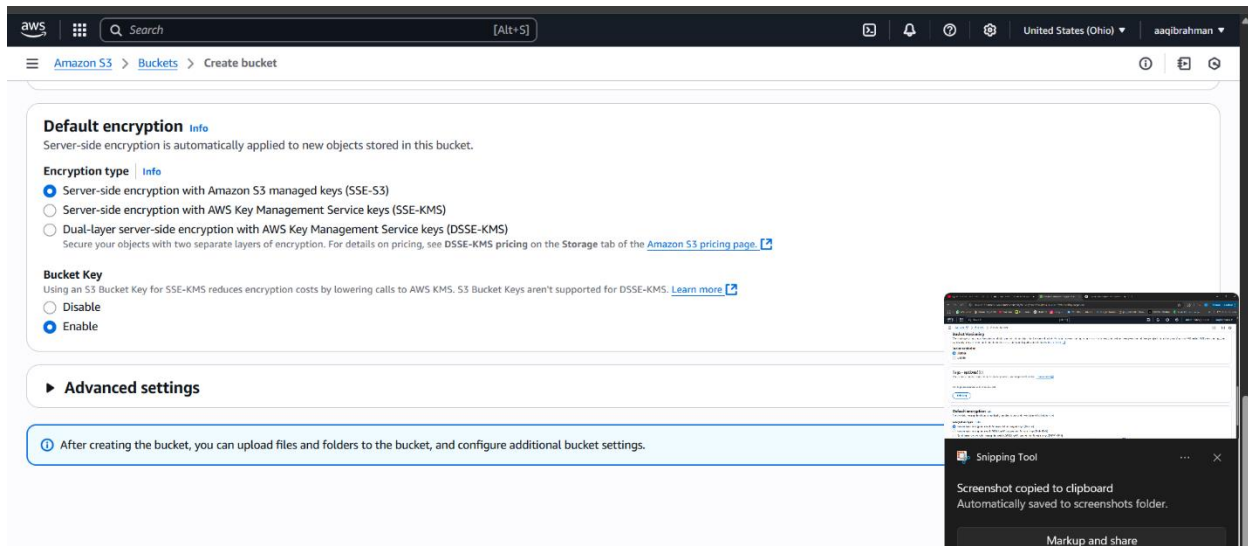
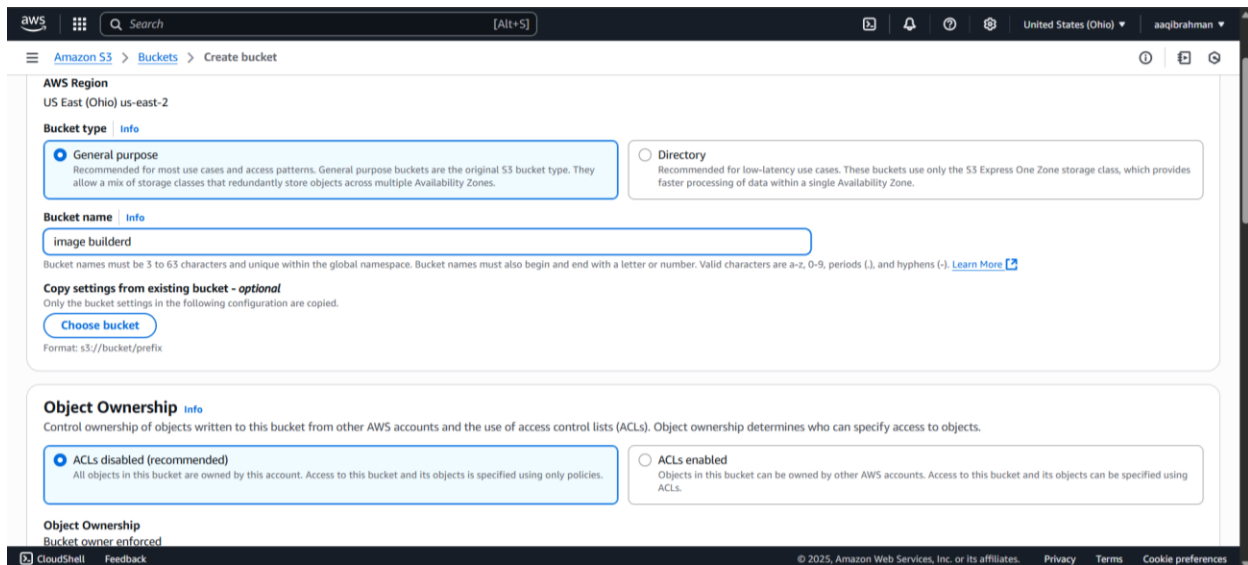
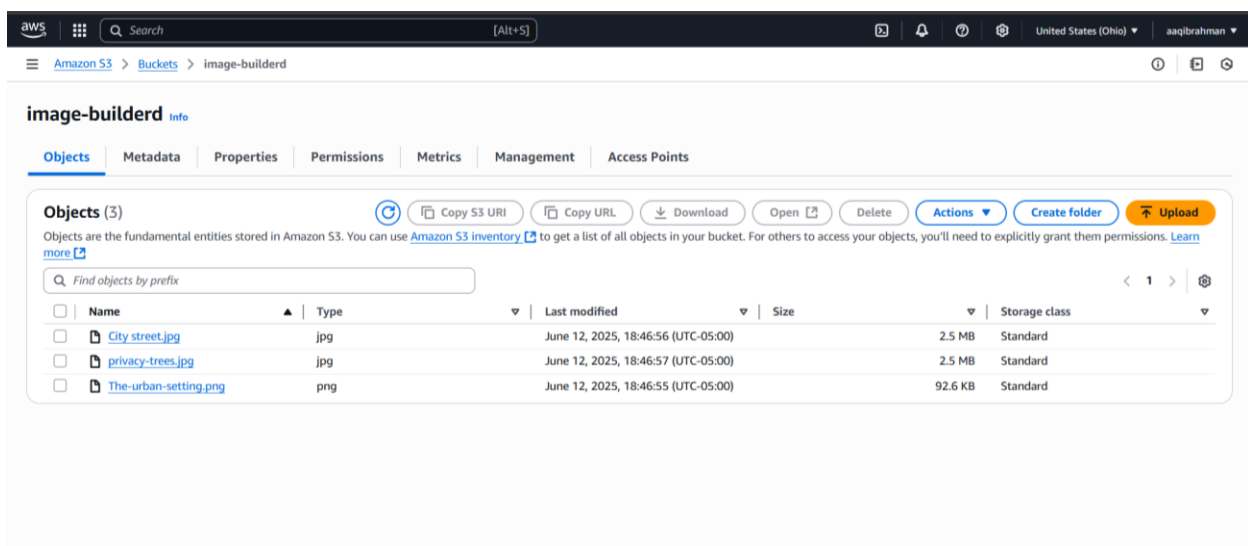


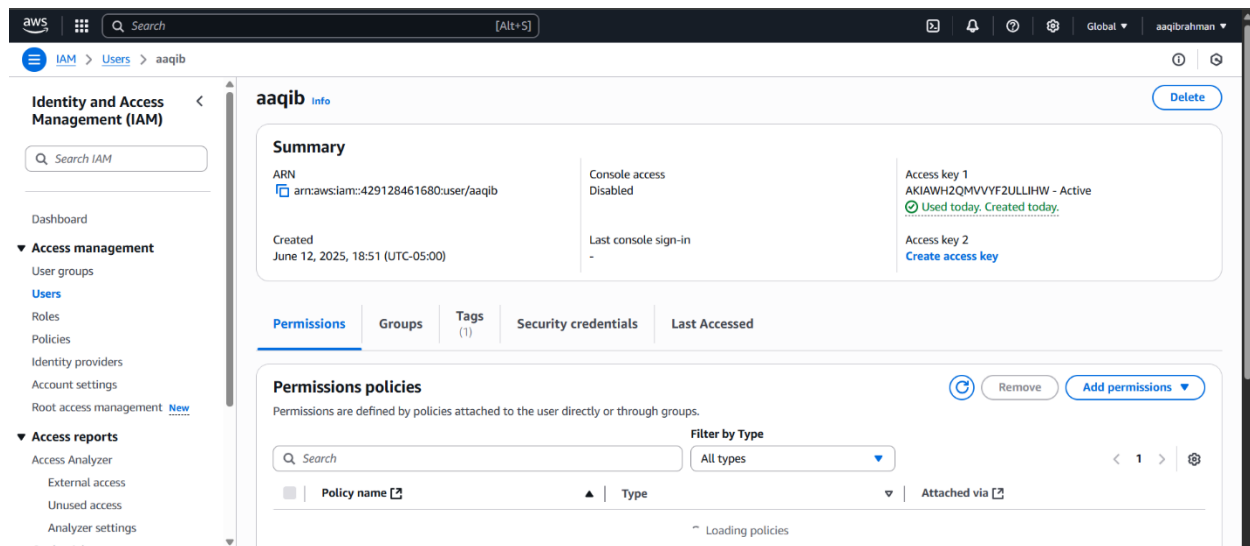
image label generator

In this project, i will be building an image labels generator, using Amazon Rekognition. Once built, it will be able to recognize and label images. For example, if you have a photo of a cat, Amazon Rekognition will be able to identify what it is, and label the image as a cat.

I have created bucket in S3 and uploaded some images as you can see the screenshots below.



[illegible]



Then opened my cmd and installed AWS CLI using “**msiexec.exe /i** <https://awscli.amazonaws.com/AWSCLIV2.msi>”

To configure your AWS CLI, I’ve run the following command in the terminal: “**aws configure**”

Running this command will ask for an access key and secret access key. I’ve entered access key and secret access key

1. The general flow of the command line would look like:

```
PS H:\AWS-beginner-friendly-projects\Image label> aws configure
```

```
AWS Access Key ID [*****L4TV]: *****
```

```
AWS Secret Access Key [*****mtjR]: *****
```

```
Default region name [us-east-1]: us-east-1
```

```
Default output format [None]: None
```

I have configured our AWS CLI.

I’ve VSCode to create a .py file for writing my coding.

imported the necessary libraries:

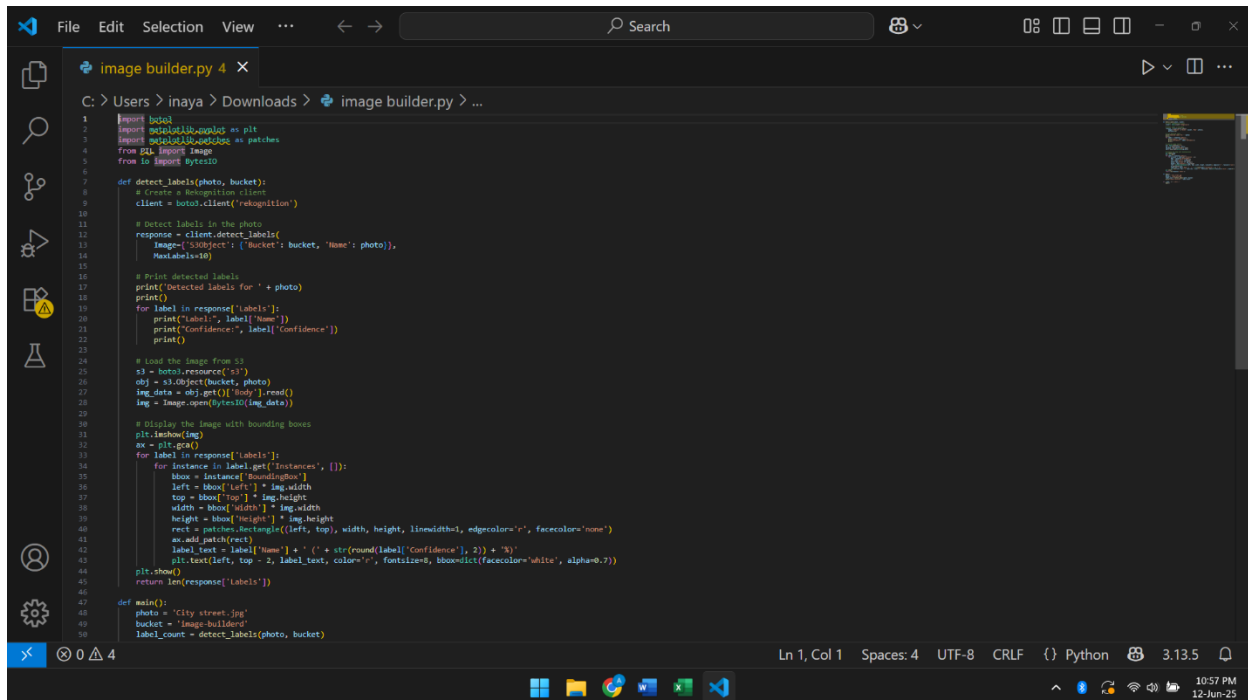
- **boto3** for interacting with AWS services.
- **matplotlib** for visualization.
- **PIL (Python Imaging Library)** for handling image data.

- **BytesIO** from the **io** module to work with image data.

Then,

- I've created a **Rekognition** client using **boto3**.
- I've used the **detect_labels** method of the Rekognition client to detect labels in the given photo.
- I've printed the detected labels along with their confidence levels.
- I've uploaded the image from the **S3 bucket** using **boto3** and **PIL**.
- I've used **matplotlib** to display the image and draw bounding boxes around the detected objects.

The final code will look like,



```
1 import boto3
2 import matplotlib.pyplot as plt
3 import matplotlib.image as patches
4 from PIL import Image
5 from io import BytesIO
6
7 def detect_labels(photo, bucket):
8     # Create a Rekognition client
9     client = boto3.client('rekognition')
10
11     # Detect labels in the photo
12     response = client.detect_labels(
13         Image={'S3Object': {'Bucket': bucket, 'Name': photo}},
14         MaxLabels=10)
15
16     # Print detected labels
17     print('Detected labels for ' + photo)
18     print()
19     for label in response['Labels']:
20         print('Label: ', label['Name'])
21         print('Confidence: ', label['Confidence'])
22         print()
23
24     # Load the image from S3
25     s3 = boto3.resource('s3')
26     obj = s3.Object(bucket, photo)
27     img_data = obj.get()['Body'].read()
28     img = Image.open(BytesIO(img_data))
29
30     # Display the image with bounding boxes
31     plt.imshow(img)
32     ax = plt.gca()
33     for label in response['Labels']:
34         for instance in label.get('Instances', []):
35             bbox = instance['BoundingBox']
36             left = bbox['left'] * img.width
37             top = bbox['top'] * img.height
38             width = bbox['width'] * img.width
39             height = bbox['height'] * img.height
40             rect = patches.Rectangle(left, top, width, height, linewidth=1, edgecolor='r', facecolor='none')
41             ax.add_patch(rect)
42             label_text = label['Name'] + ' (' + str(round(label['Confidence'], 2)) + '%)'
43             plt.text(left, top - 2, label_text, color='r', fontsize=8, bboxdict(facecolor='white', alpha=0.7))
44     plt.show()
45     return len(response['Labels'])
46
47 def main():
48     photo = 'city street.jpg'
49     bucket = 'image-builder'
50     label_count = detect_labels(photo, bucket)
```

After running the python file I've got an output with 10 detected labels and their confidence levels and a pop-up screen displaying the image that was uploaded on my S3 bucket with the bounding boxes present on the generated labels as you can see the screenshot I've pasted below.

