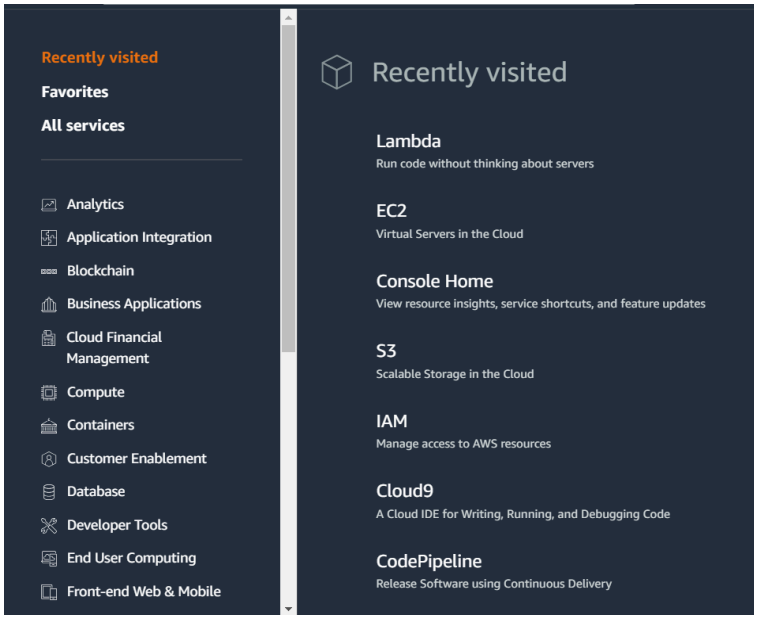
Name : Shivam.R.Prajapati Div: D15C Roll No: 41 Academic Year: 2024-25

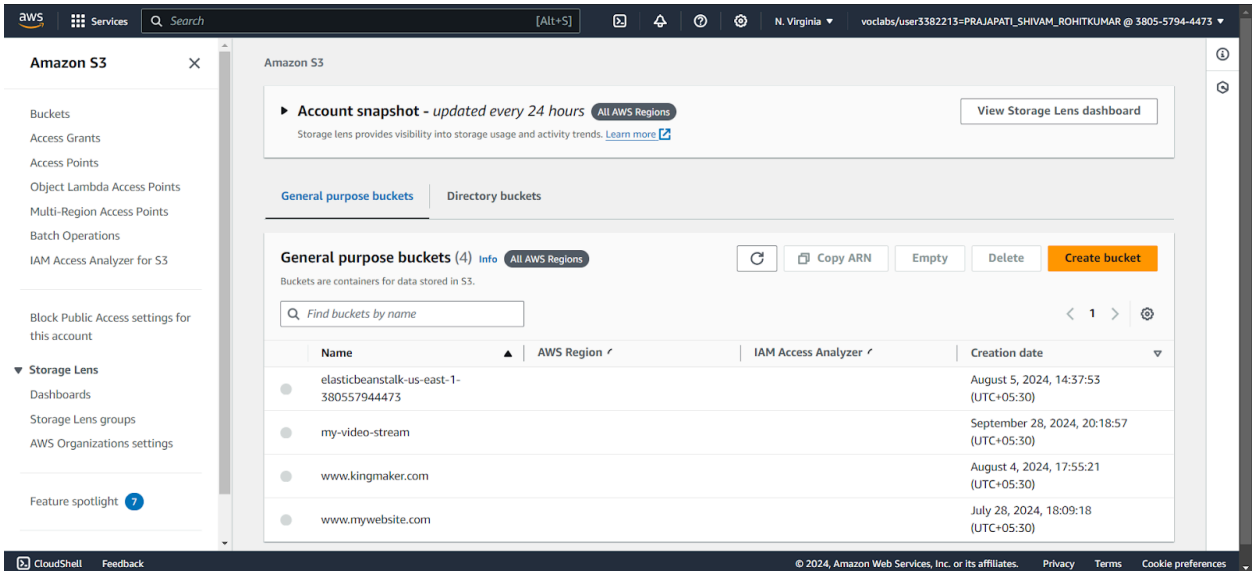
Experiment No :12

AIM : To create a Lambda function which will log “An Image has been added” once you add an object to a specific bucket in S3

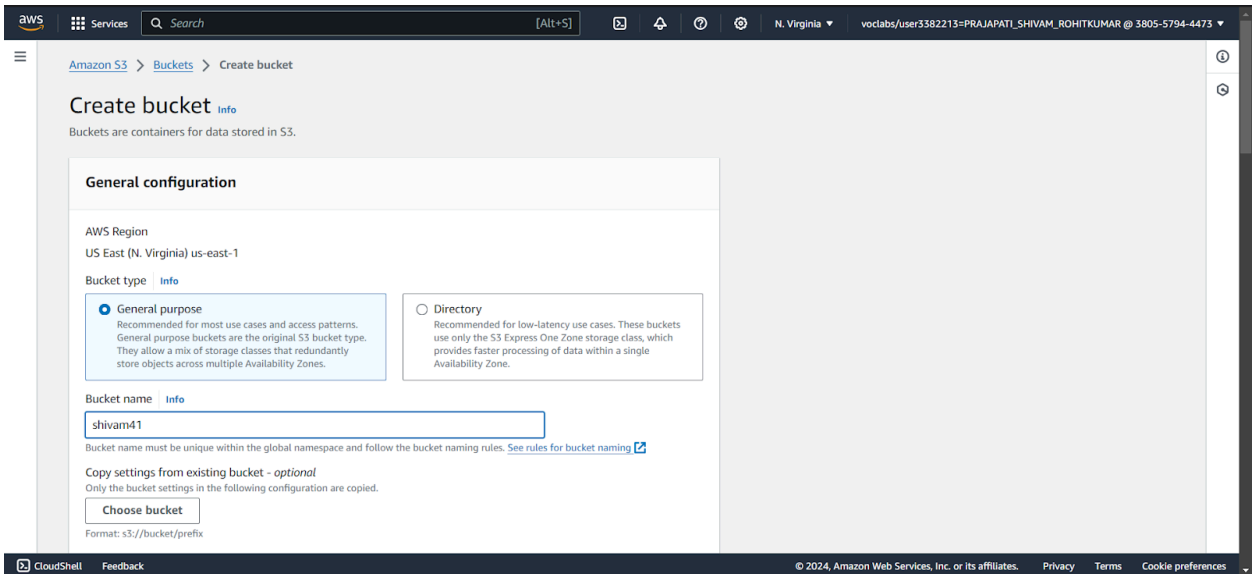
CREATING LAMBDA FUNCTION :

Step 1: Log in to your AWS Personal account. Then go to S3 in the services menu and click on "Create S3 Bucket."

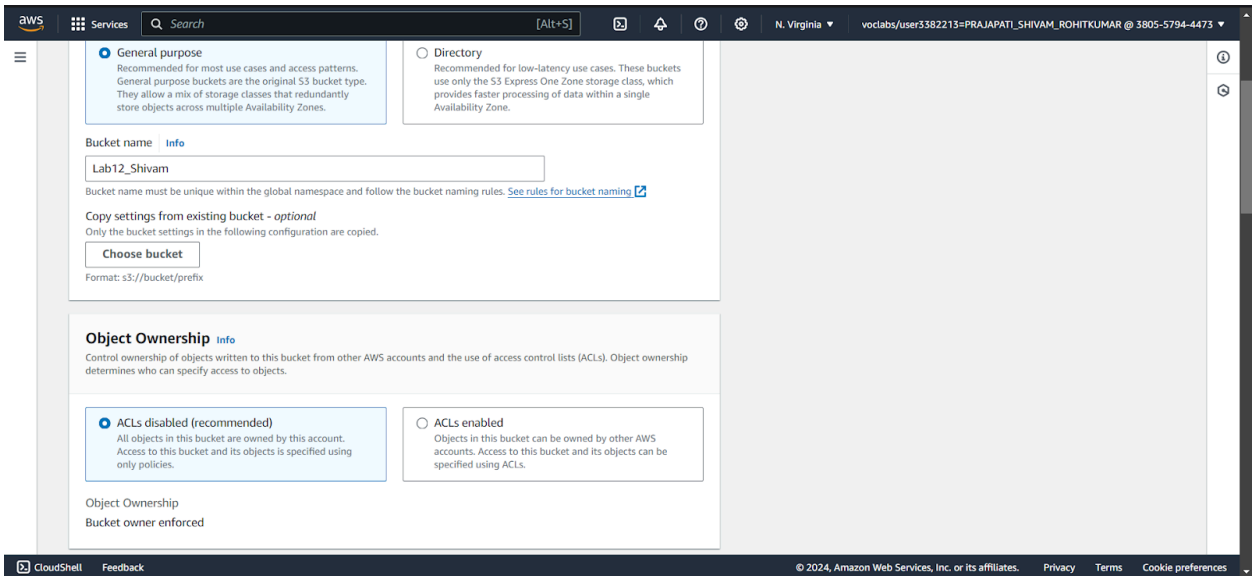




Step 2: Give your bucket a name, select "General purpose project," then uncheck "Block public access." Keep the other settings as they are.

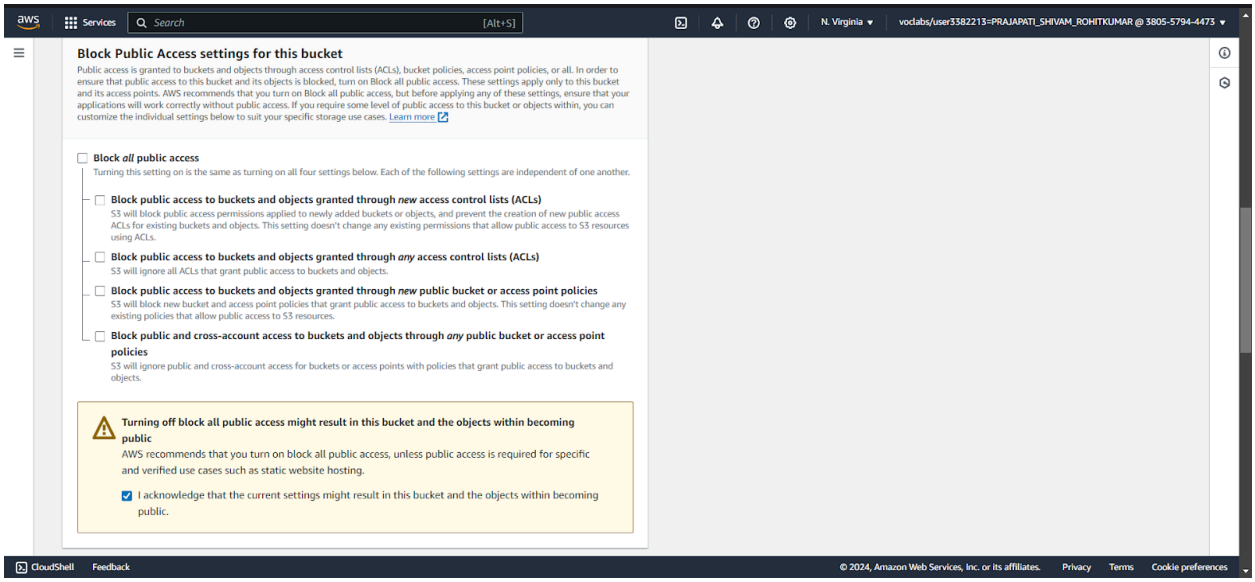


Given proper bucket Name

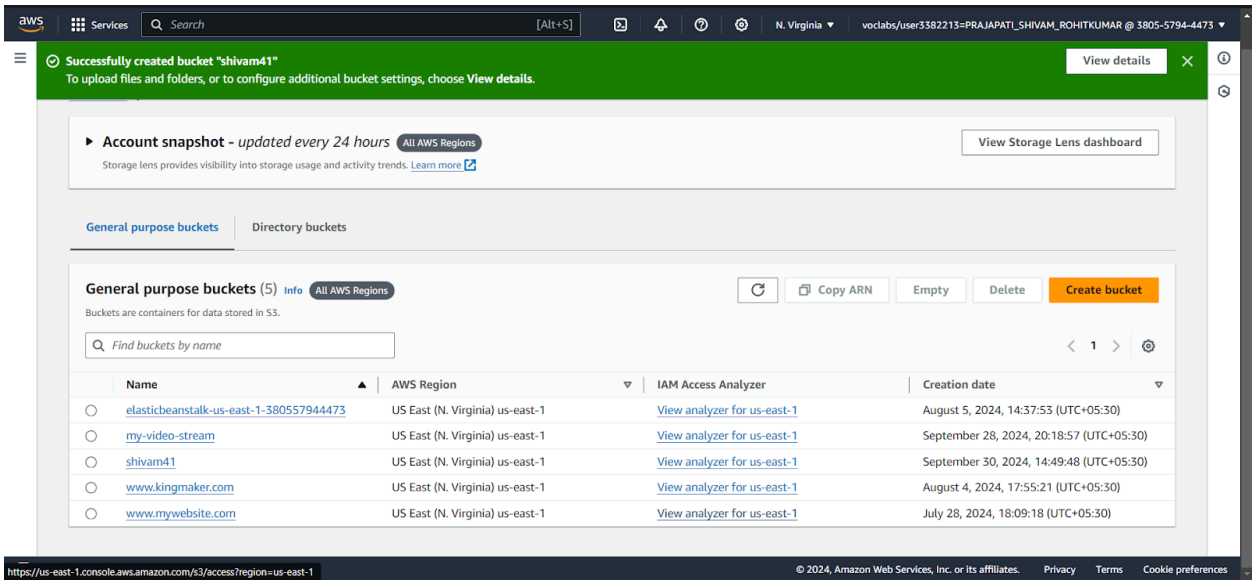


Selected Appropriate object Ownership

Name : Shivam.R.Prajapati Div: D15C Roll No: 41 Academic Year: 2024-25

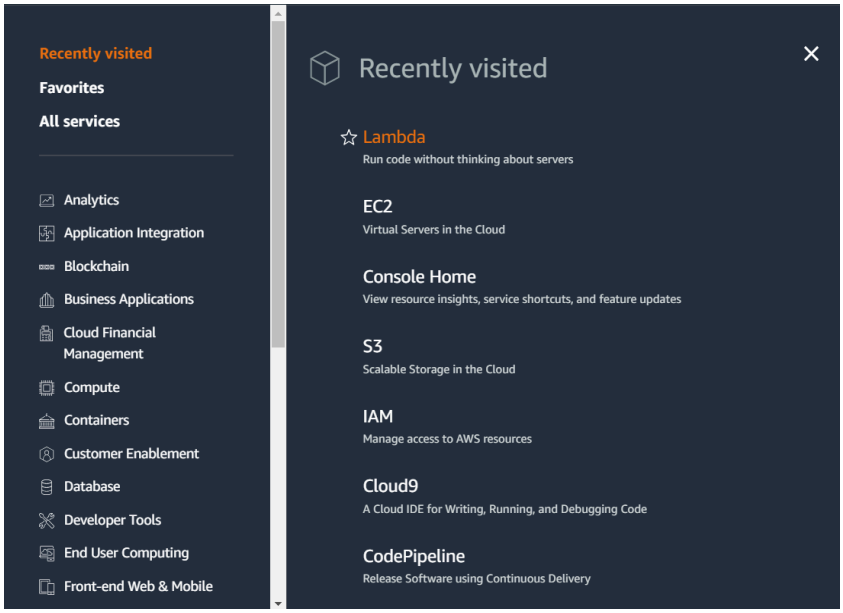


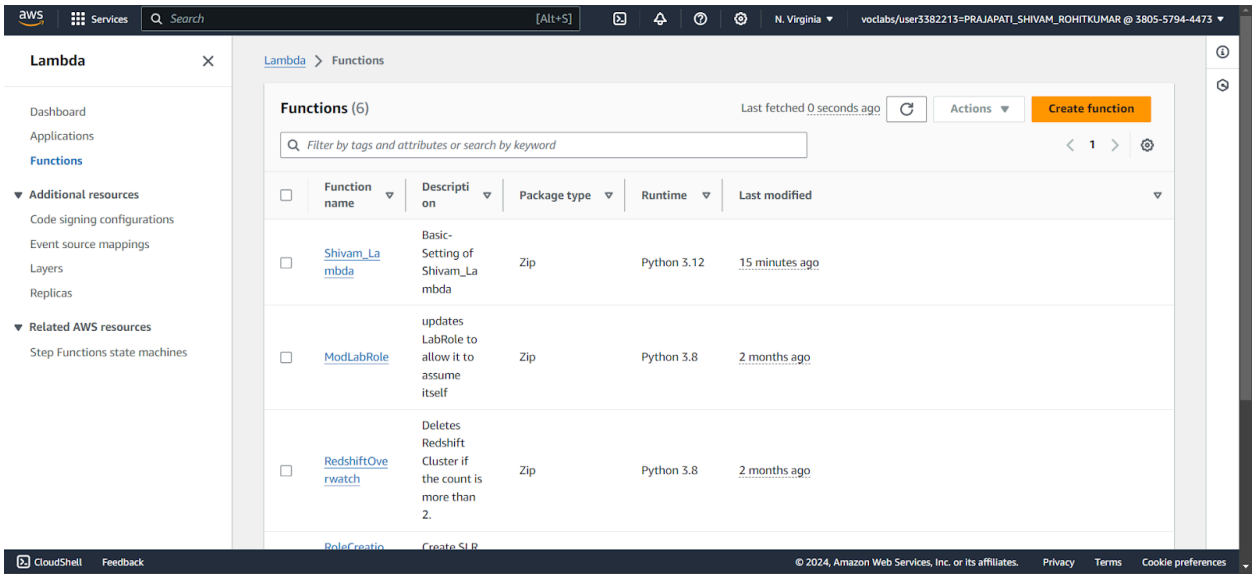
Unchecked the block all public access checkbox and checked the lower checkbox.



Successfully created the bucket

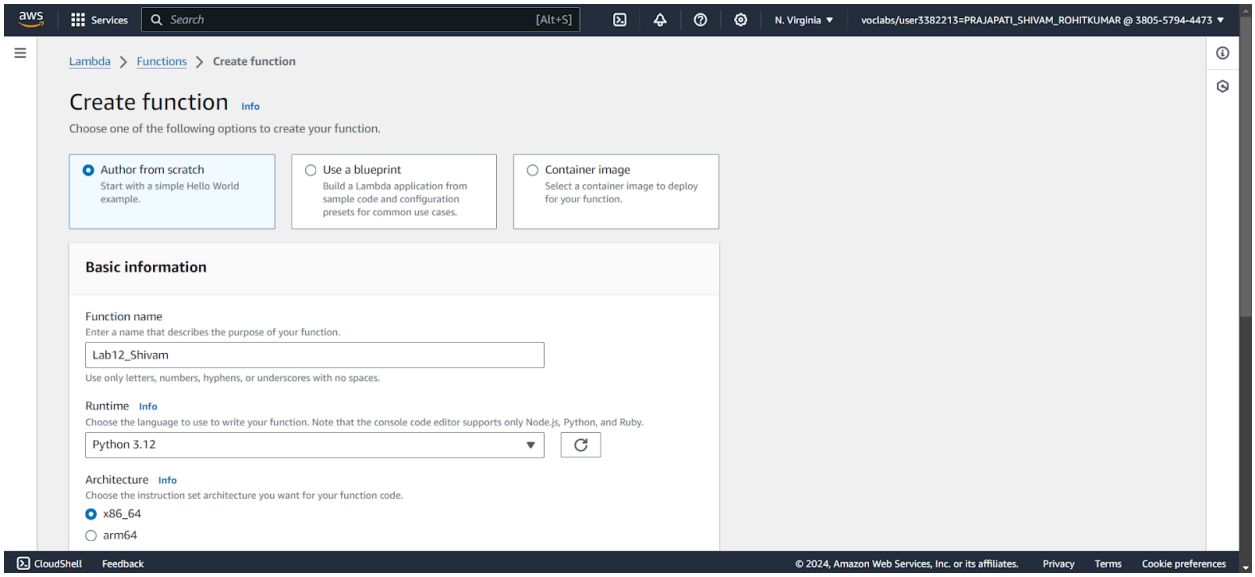
Step 3: Open lambda console and click on create function button.



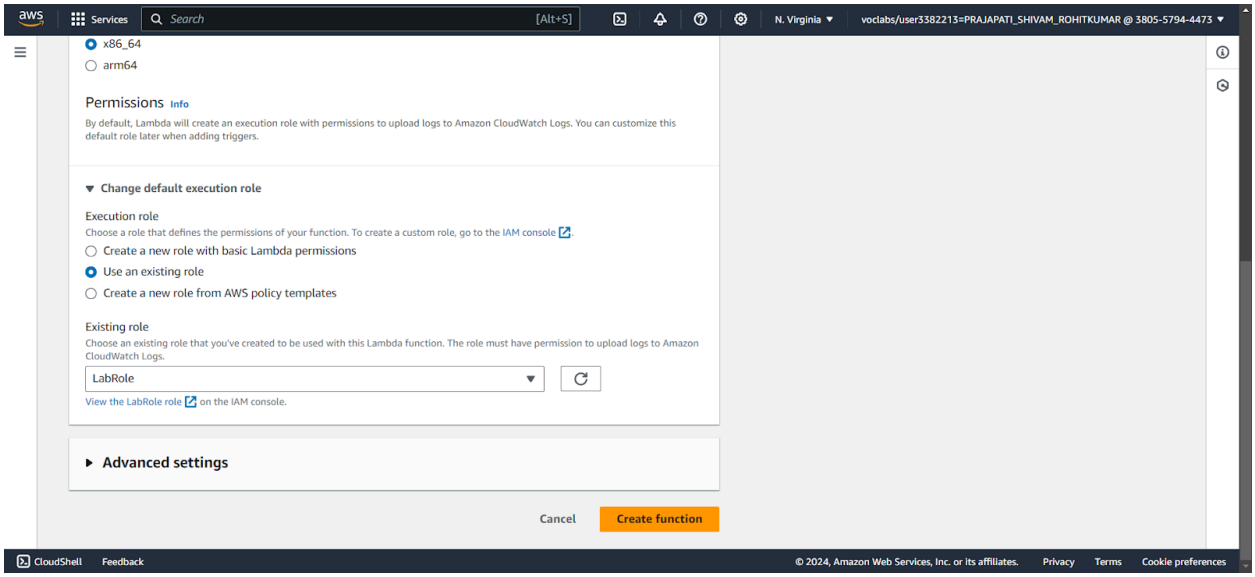


Step 4: Give your Lambda function a name and choose a programming language. The code editor only supports Node.js, Python, and Ruby, so in my case I have chosen **Python 3.12**. Set the **architecture to x86**. For the execution role, select '**Use an existing role**,' then pick '**Lab role**' from the dropdown menu under existing roles .

(This is because the Lab role already has the permissions needed for Lambda to run properly, so you don't need to create a new role from scratch. It's a quicker and more convenient option)

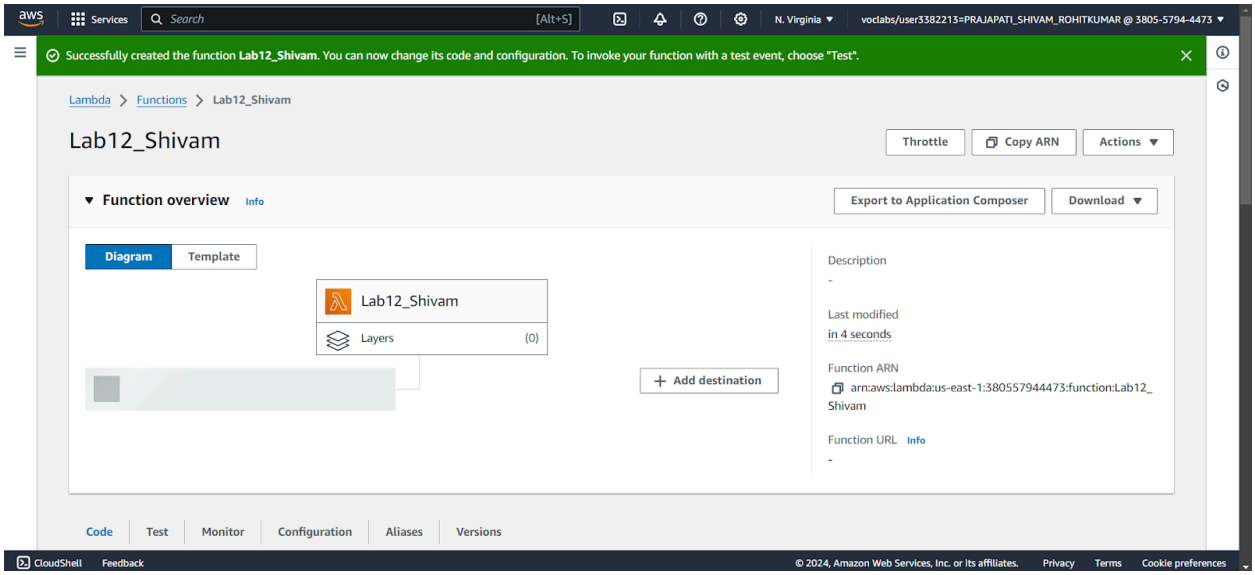


Given proper function name and selected language for Lambda function



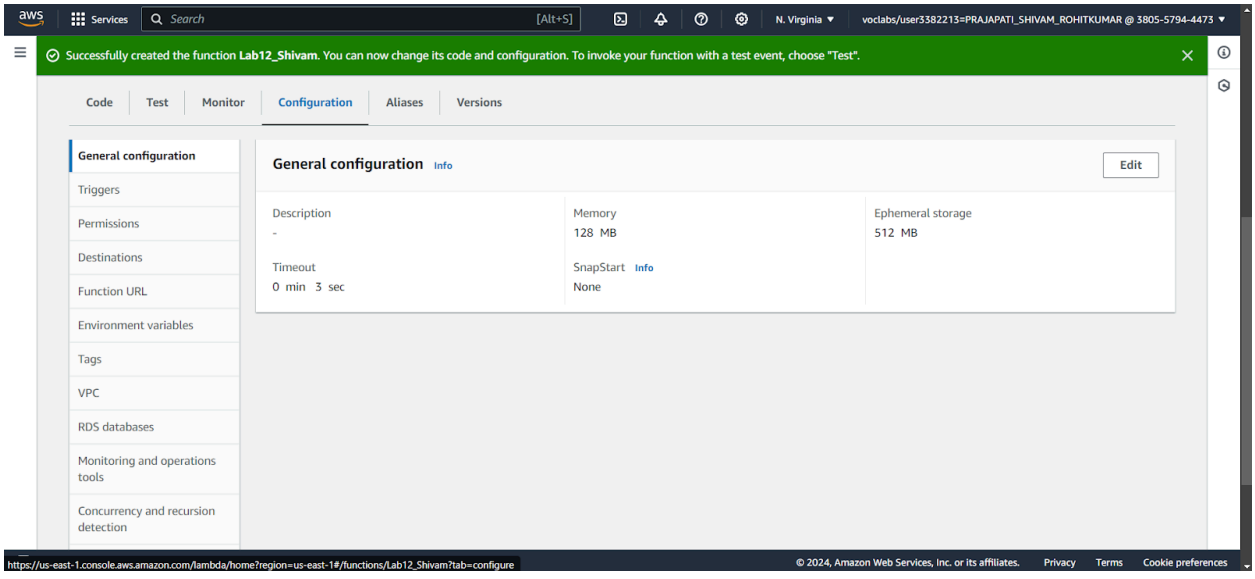
Selected Appropriate Execution role

Name : Shivam.R.Prajapati Div: D15C Roll No: 41 Academic Year: 2024-25

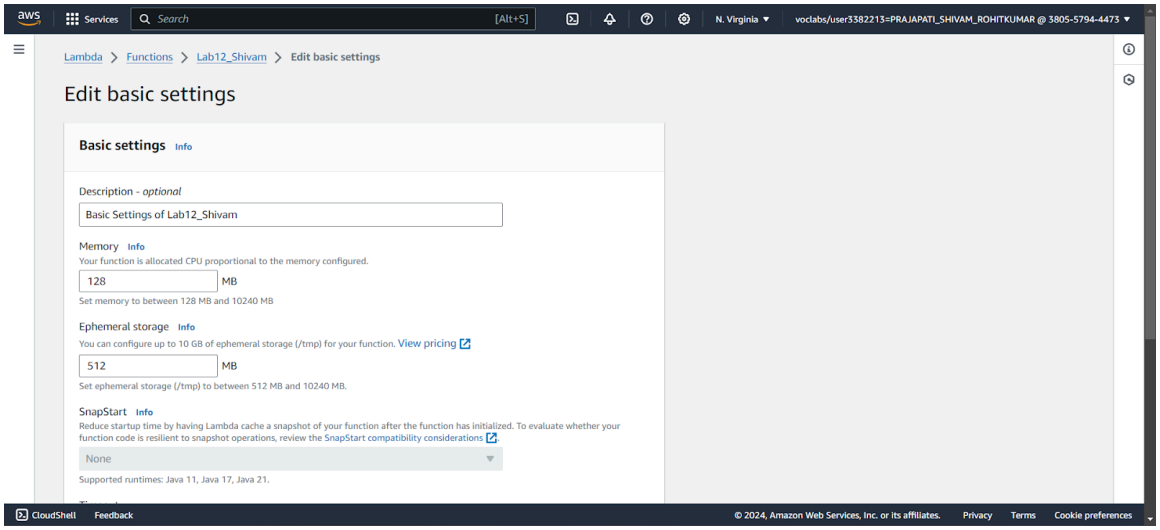


Successfully created the Lambda function.

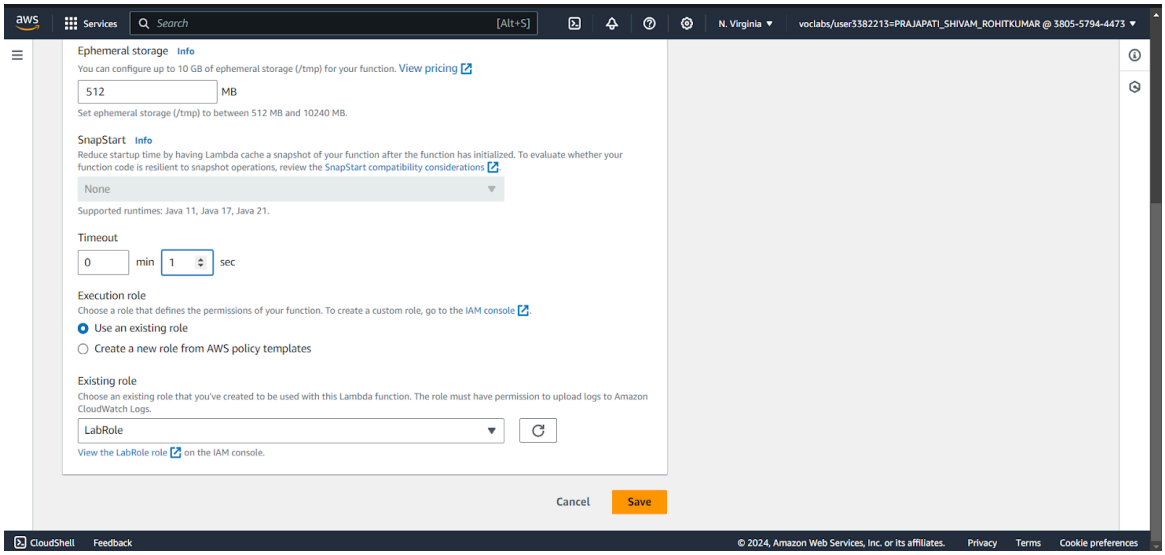
Step 5: To view or change the basic settings, go to the 'Configuration' tab and click 'Edit' under 'General settings.' (THIS STEP IS OPTIONAL)



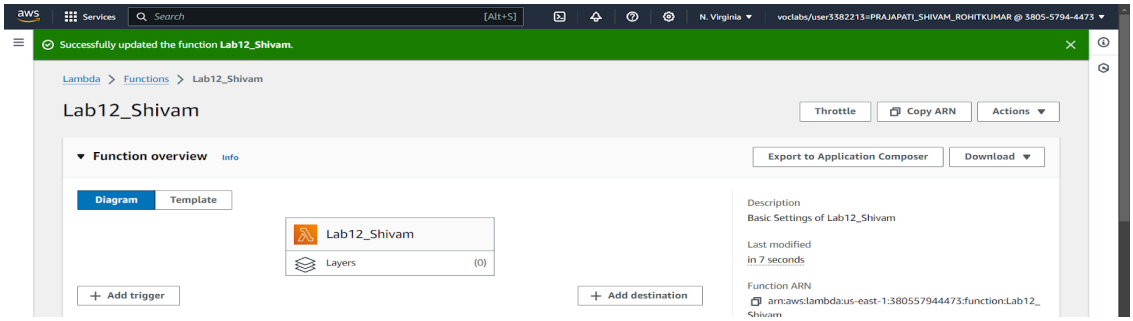
You can add a description and adjust the memory and timeout settings. I've changed the timeout to 1 second, as that's enough for now.



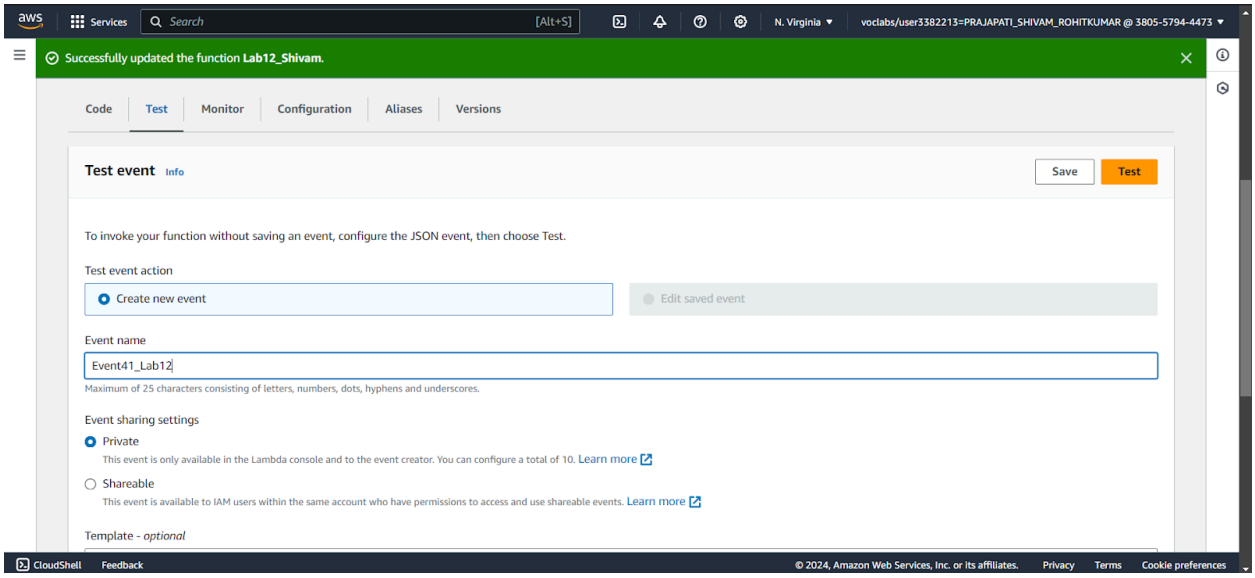
Given some description for your settings

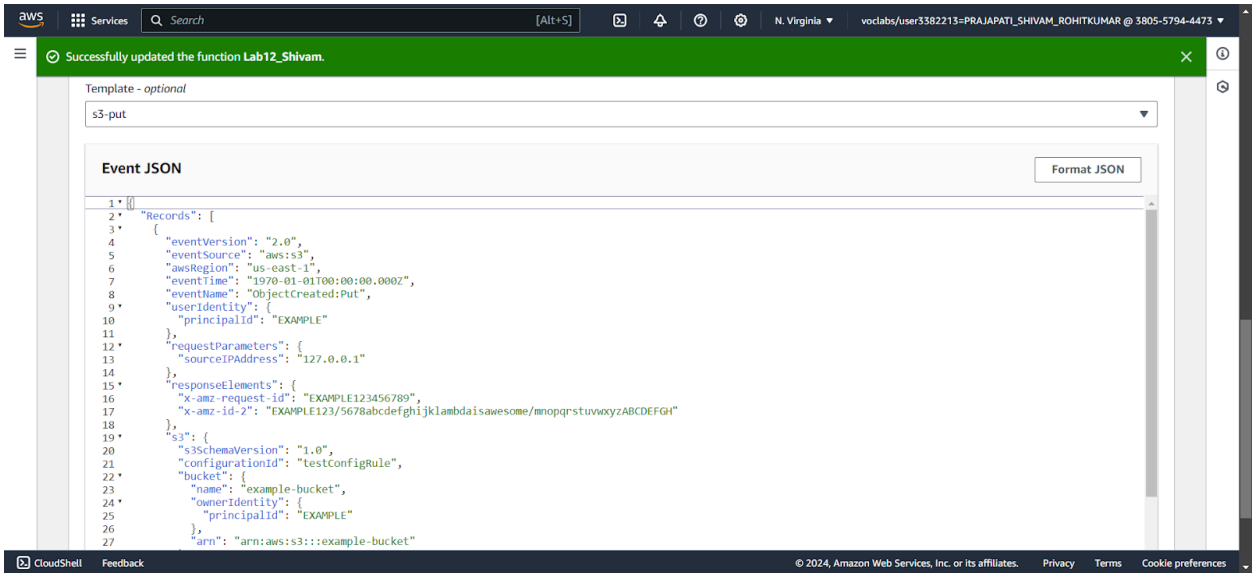


Click on Save.



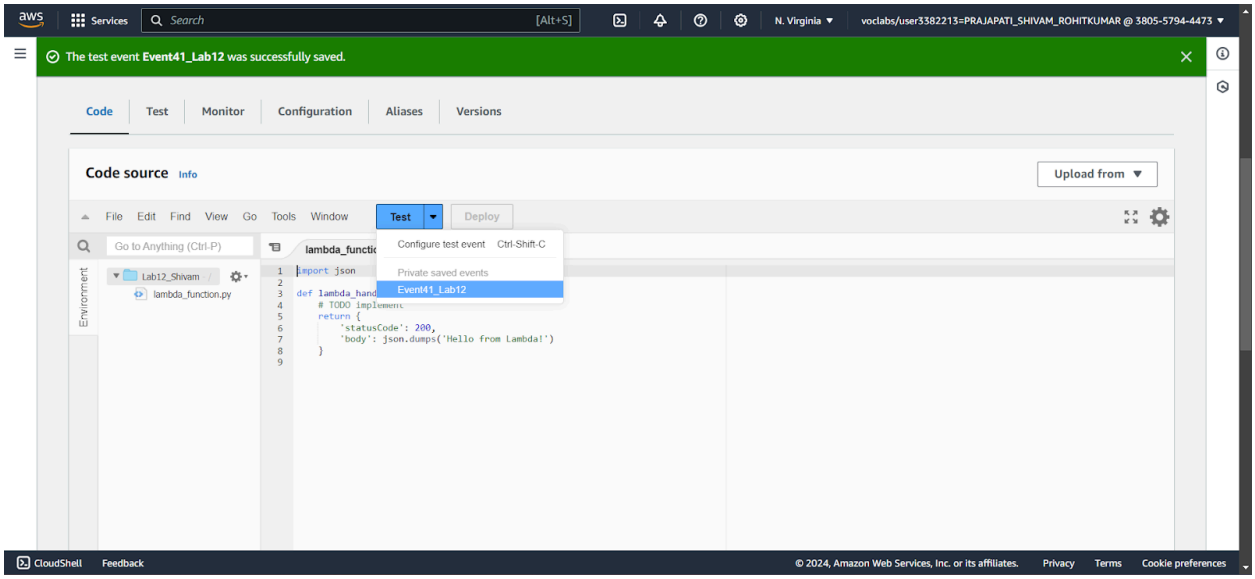
Step 6: Click on the "Test" tab, then select "Create a new event." Give the event a name, set "Event Sharing" to private, and choose the "S3 Put" template.S3 (Simple Storage Service) template allows you to test your Lambda function specifically for events related to uploading files to an S3 bucket.



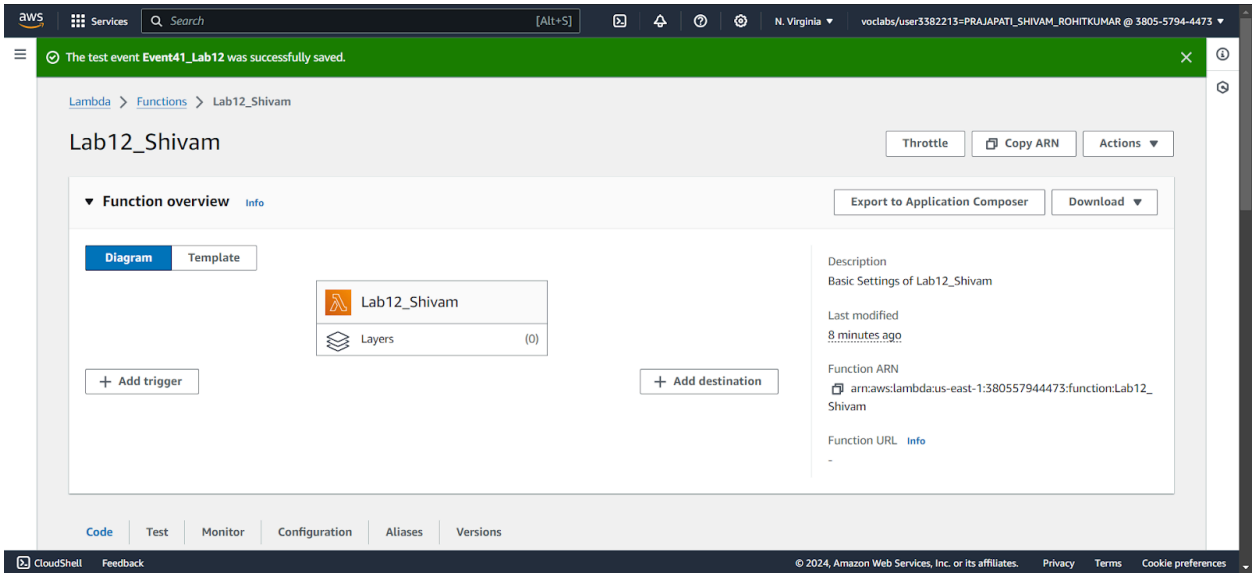


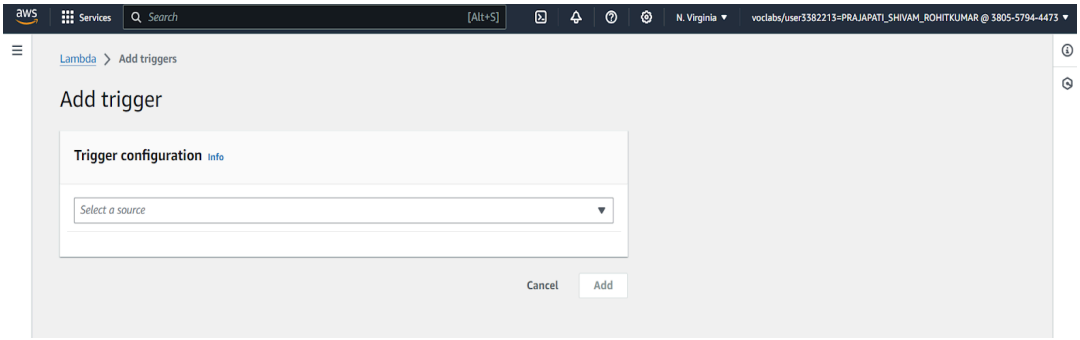
Event Jason code will be automatically generated once S3 -put is selected.

Step 7: Now In the Code section select the created event from the dropdown .

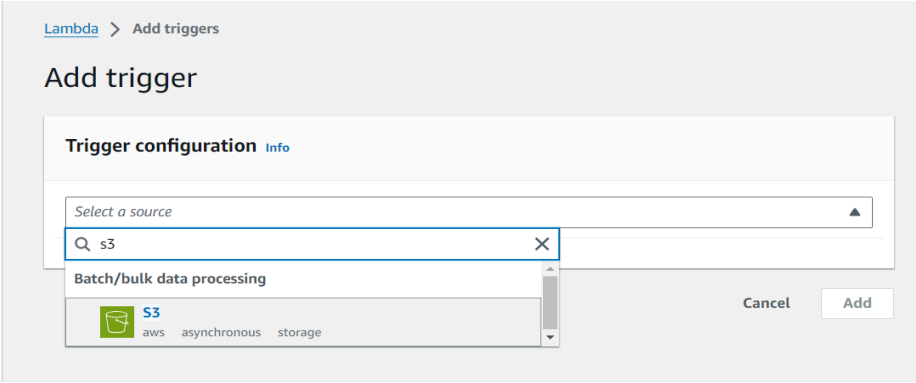


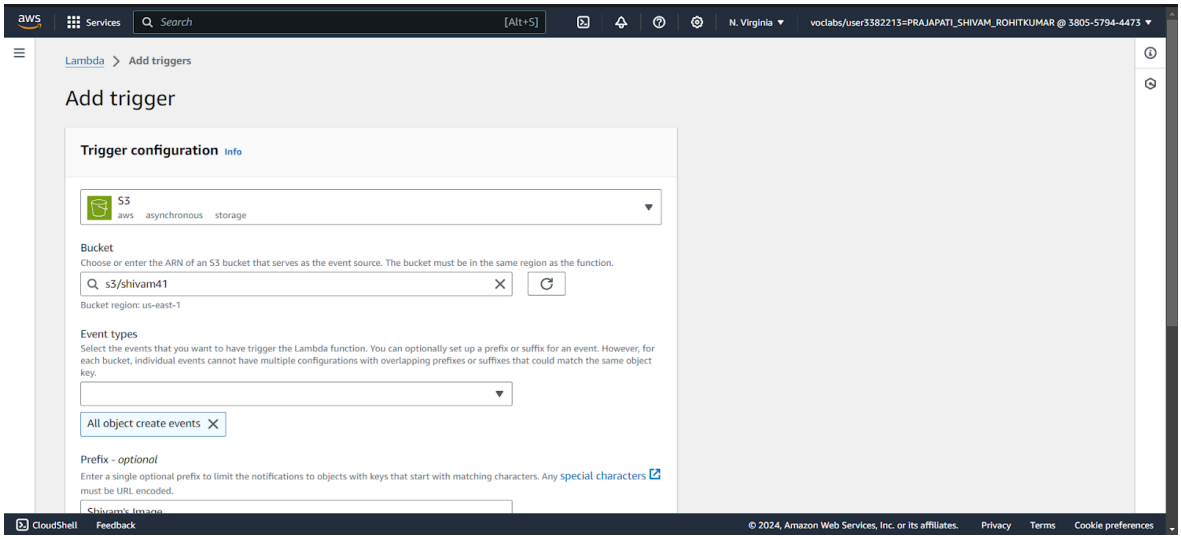
Step 8: In the Lambda function, click on "**Add Trigger.**" Adding a trigger allows your Lambda function to automatically run in response to specific events such as uploads to an S3 bucket



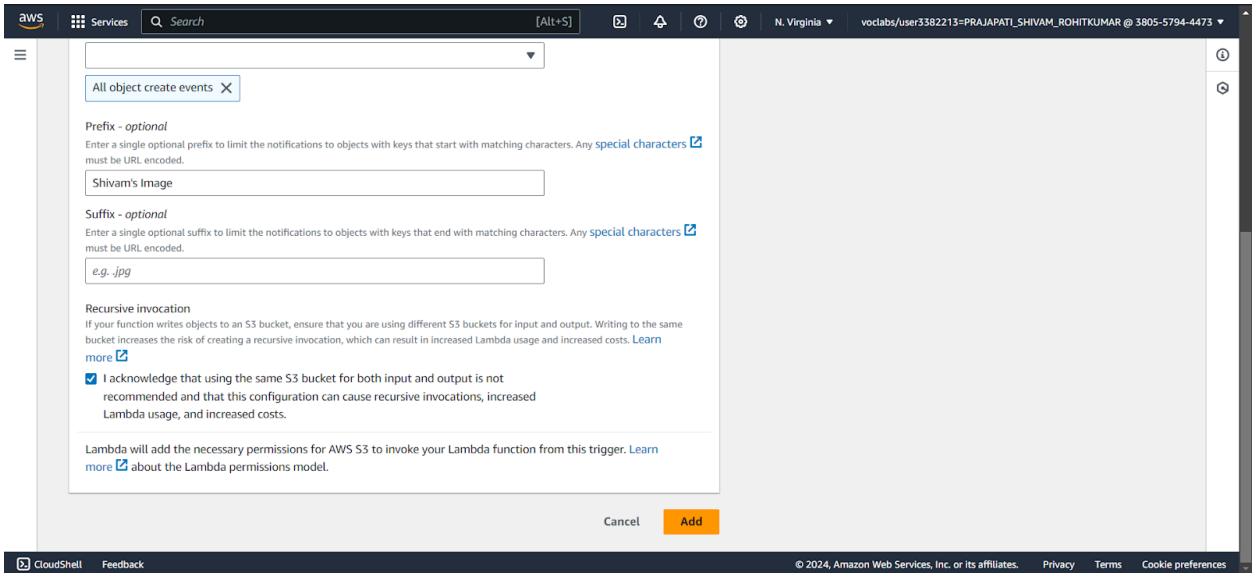


Now select the source as S3, then choose the bucket name from the dropdown menu. Keep the other settings as default, and you can also add a prefix for the image if you want.A prefix for an image (or any file) in S3 is a string that you can use to organize or filter files within a bucket. It acts like a folder name, helping to categorize your files.

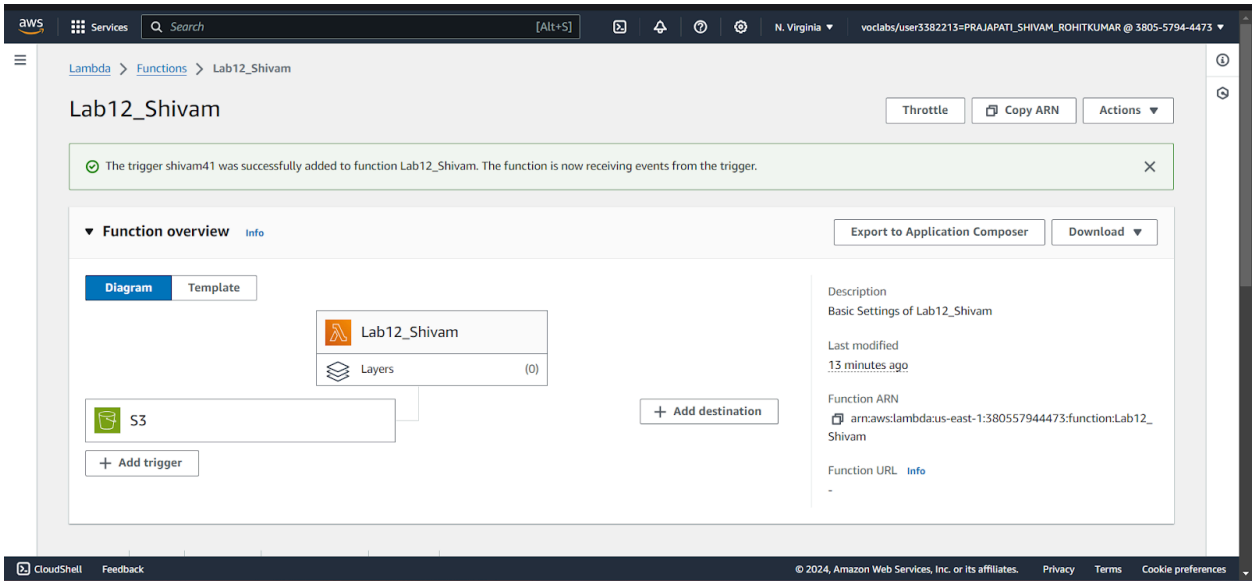




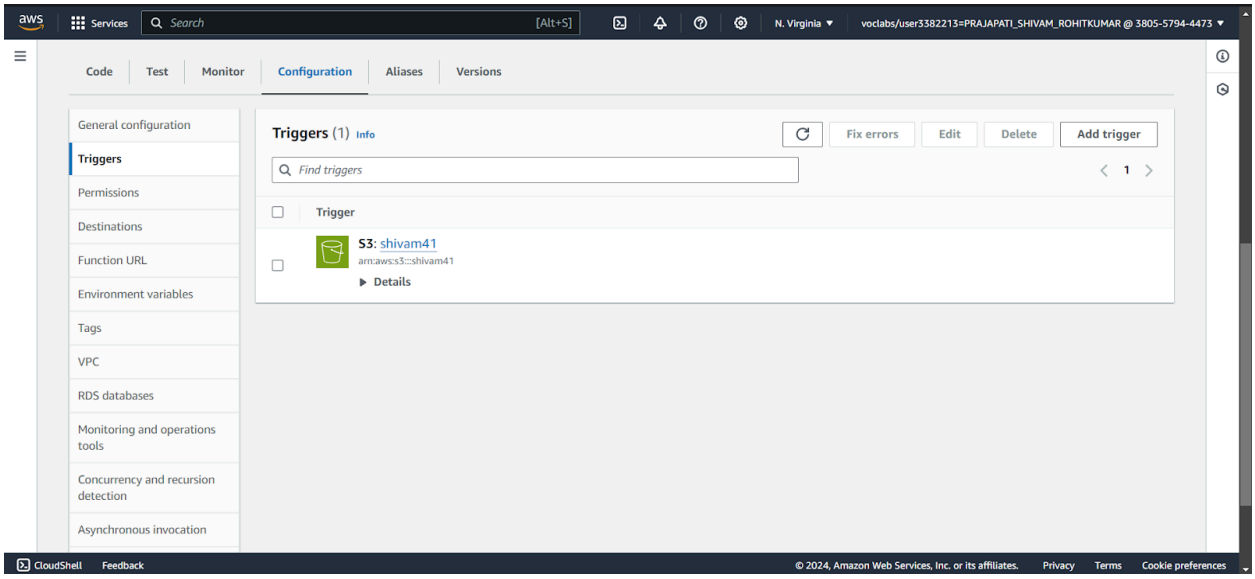
Name : Shivam.R.Prajapati Div: D15C Roll No: 41 Academic Year: 2024-25



Click on save

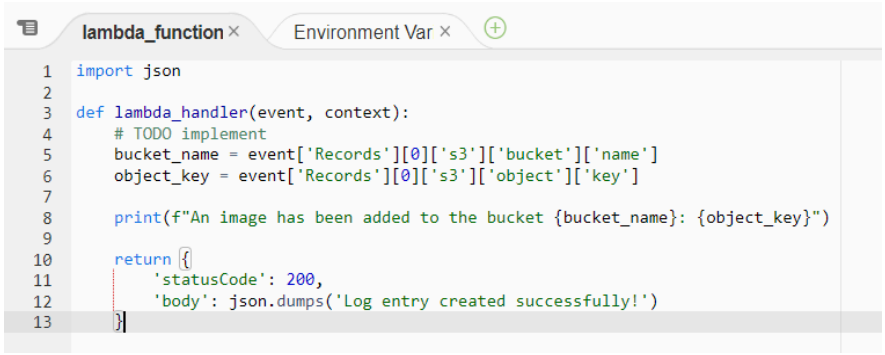


Successfully triggered the event

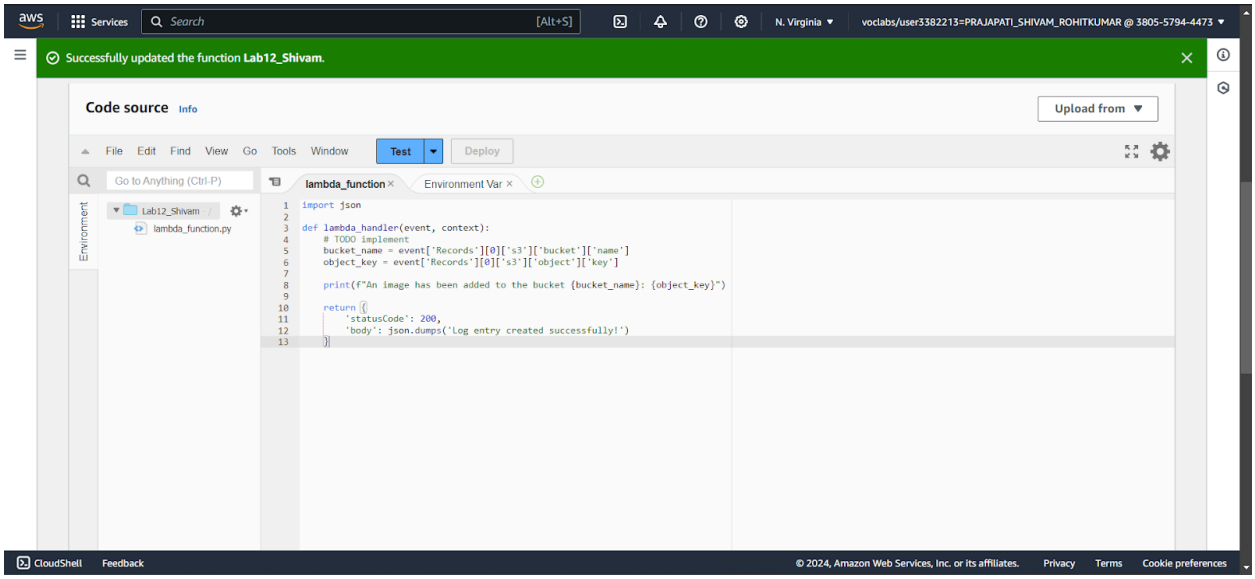


Step 9: Now Write code that logs a message like "An Image has been added" when triggered. Save the file and click on deploy.

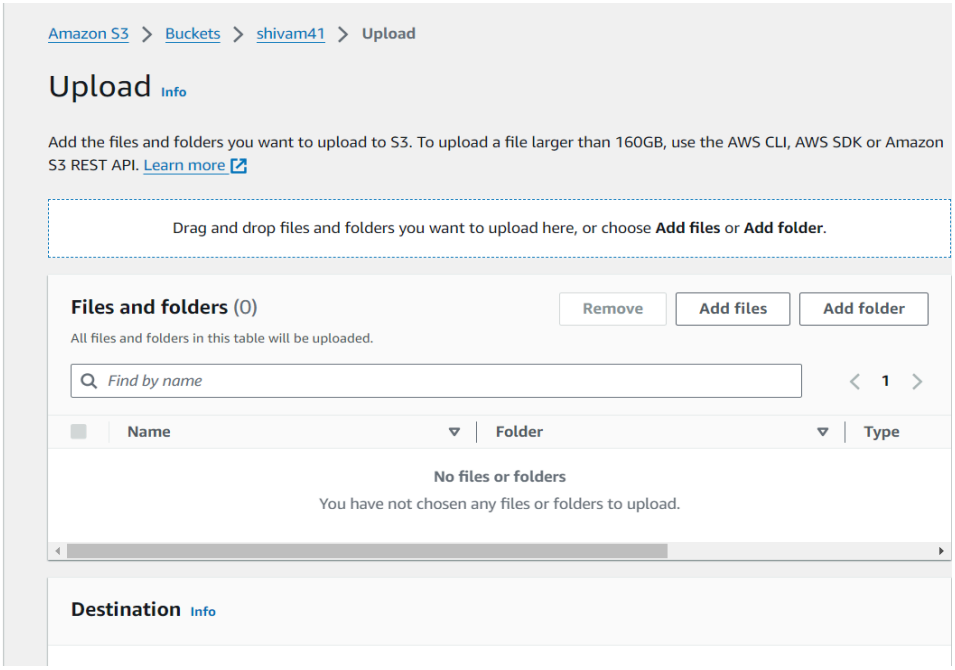
```
import json
def lambda_handler(event, context):
    # TODO implement
    bucket_name = event['Records'][0]['s3']['bucket']['name']
    object_key = event['Records'][0]['s3']['object']['key']

    print(f"An image has been added to the bucket {bucket_name}: {object_key}")

    return {
        'statusCode': 200,
        'body': json.dumps('Log entry created successfully!')
    }
```



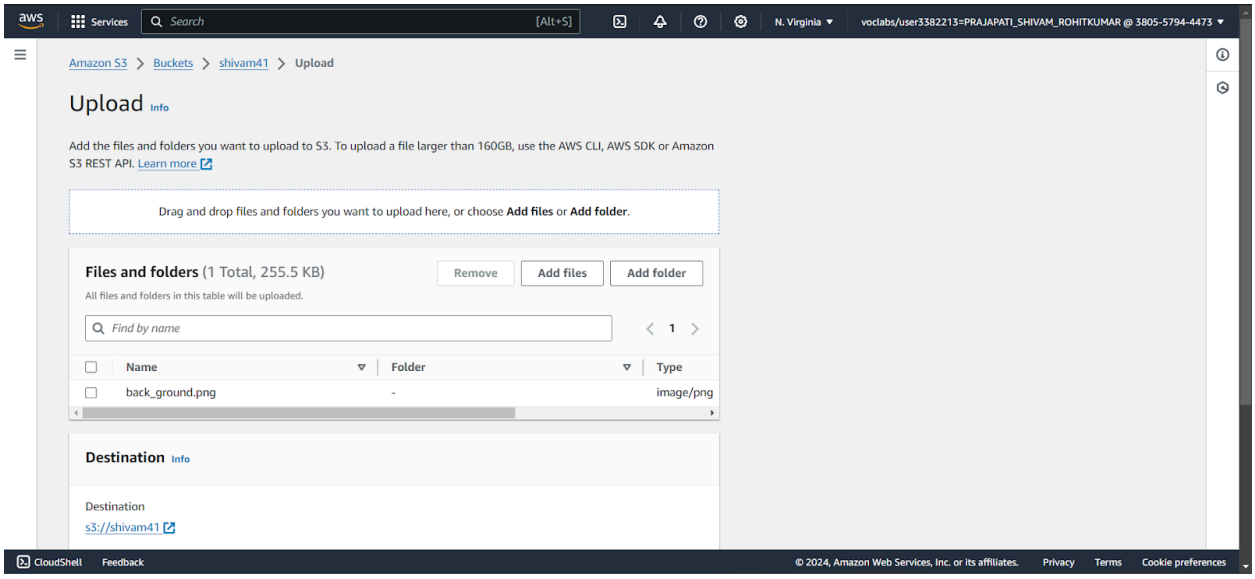
Save it by Control + S and deploy

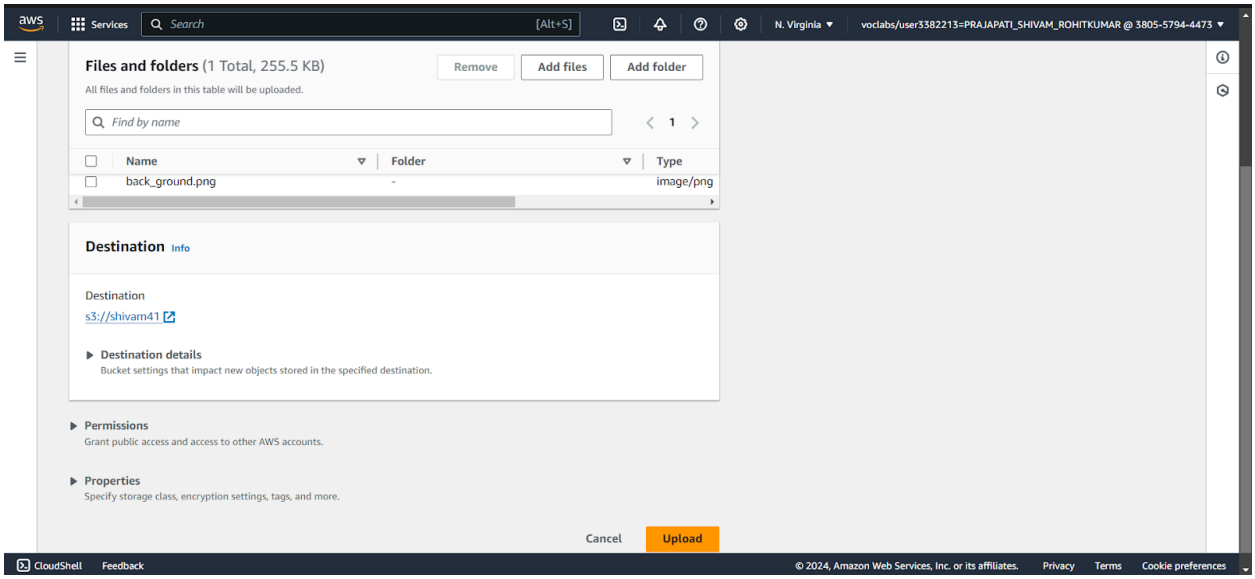


Step 10: Now we will upload any image to the bucket



Click on add file where you can upload any image of your choice in your bucket

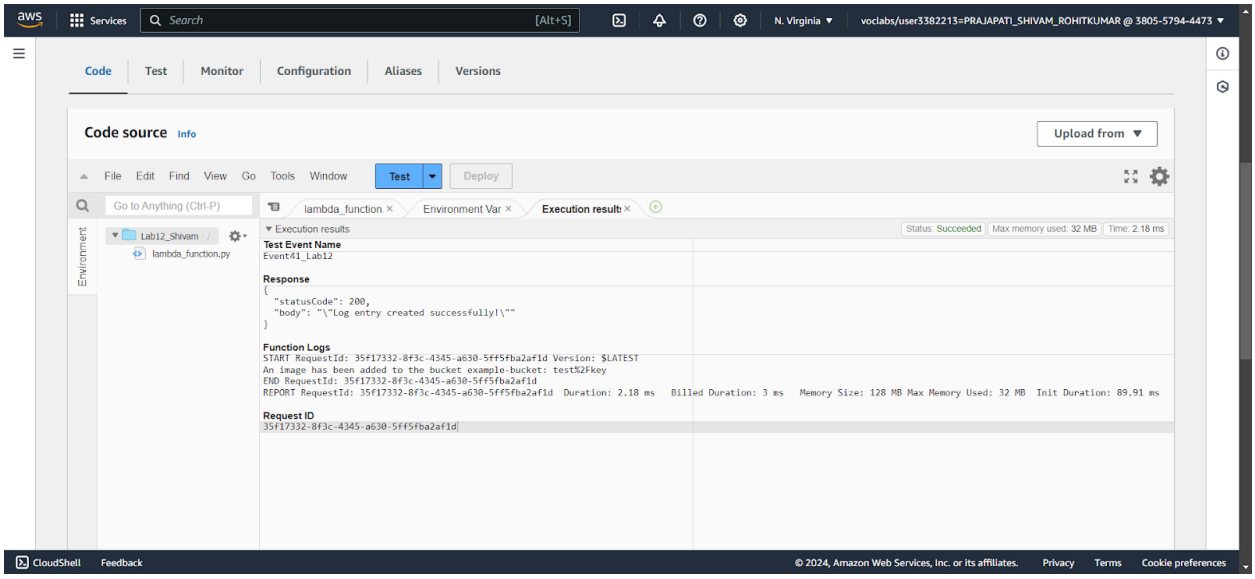


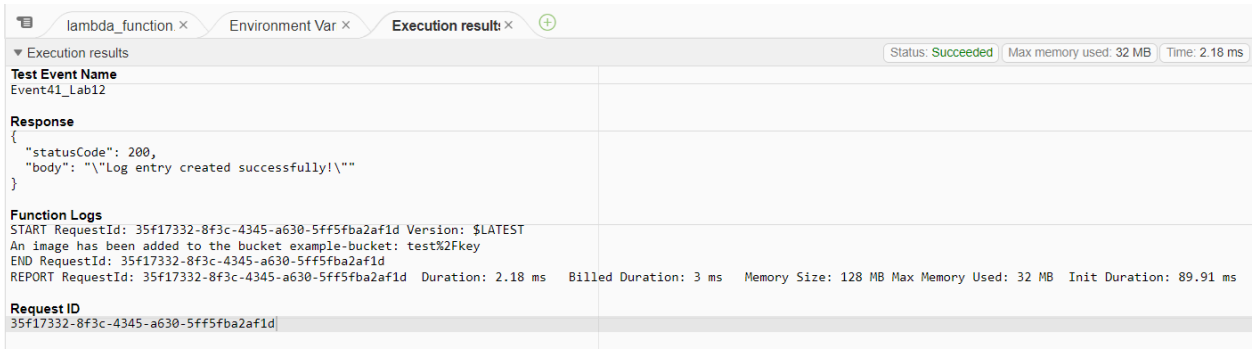


Click on Upload

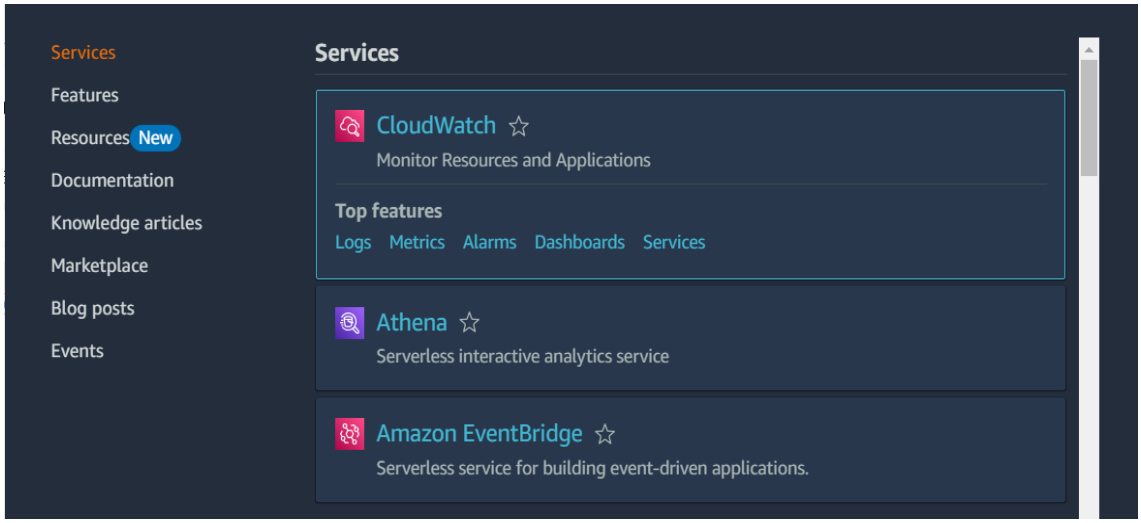
Step 11: Now click on "Test" in Lambda to see if it logs the activity when an image is added to S3.

Name : Shivam.R.Prajapati Div: D15C Roll No: 41 Academic Year: 2024-25



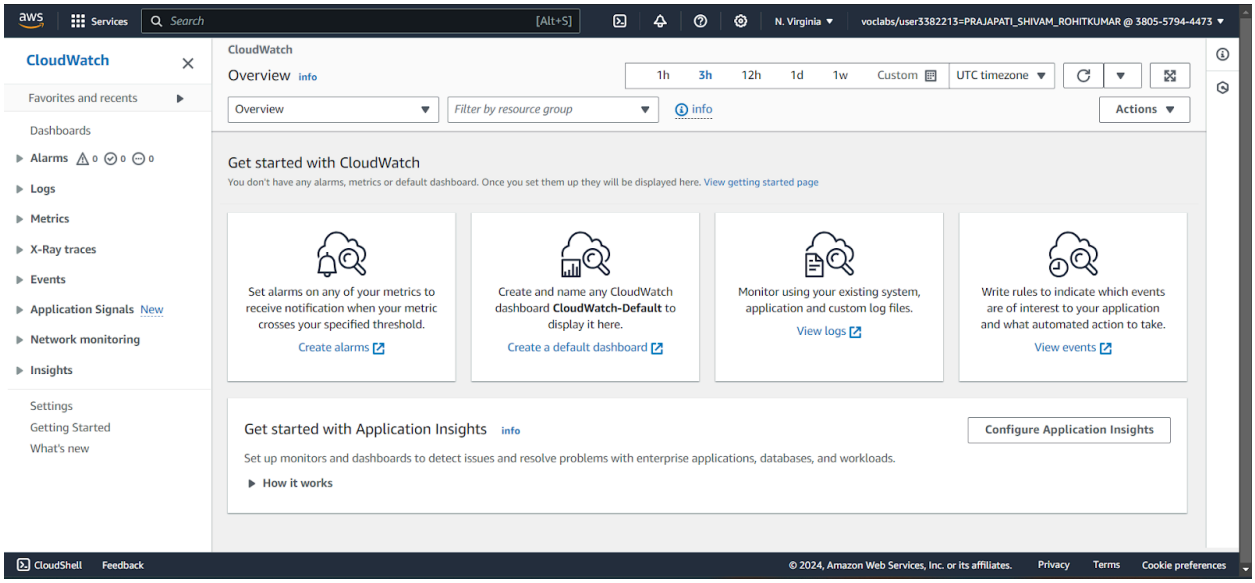


Step 12: Now let's check the logs on CloudWatch. Go to the "Monitor" section and click on "View CloudWatch Logs.

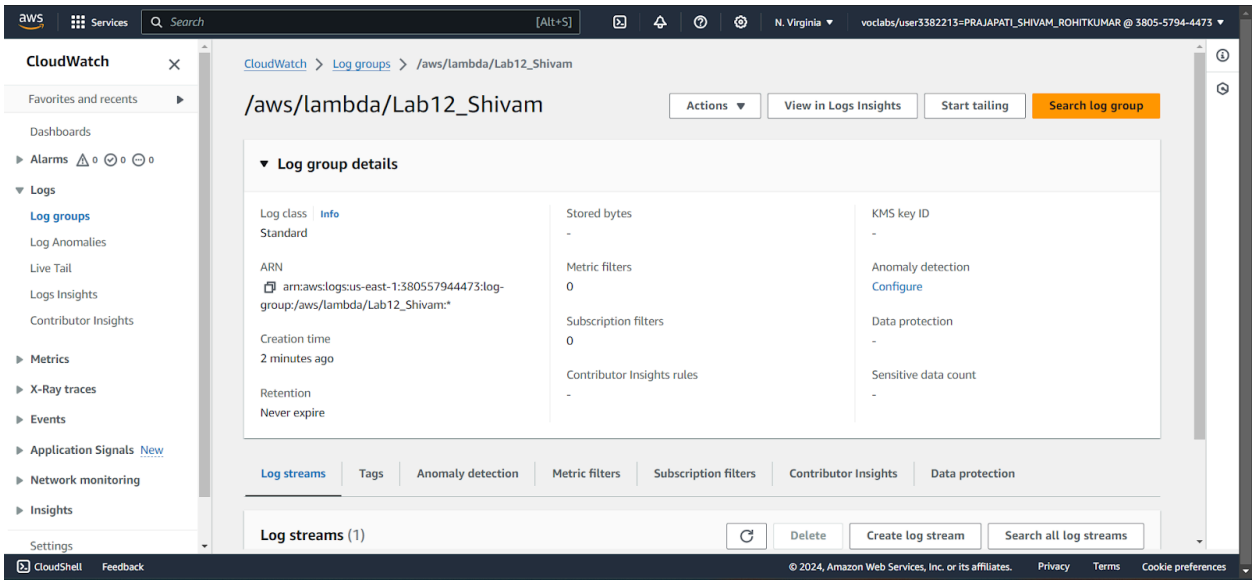


Name : Shivam.R.Prajapati Div: D15C Roll No: 41 Academic Year: 2024-25

Click on the CloudWatch:

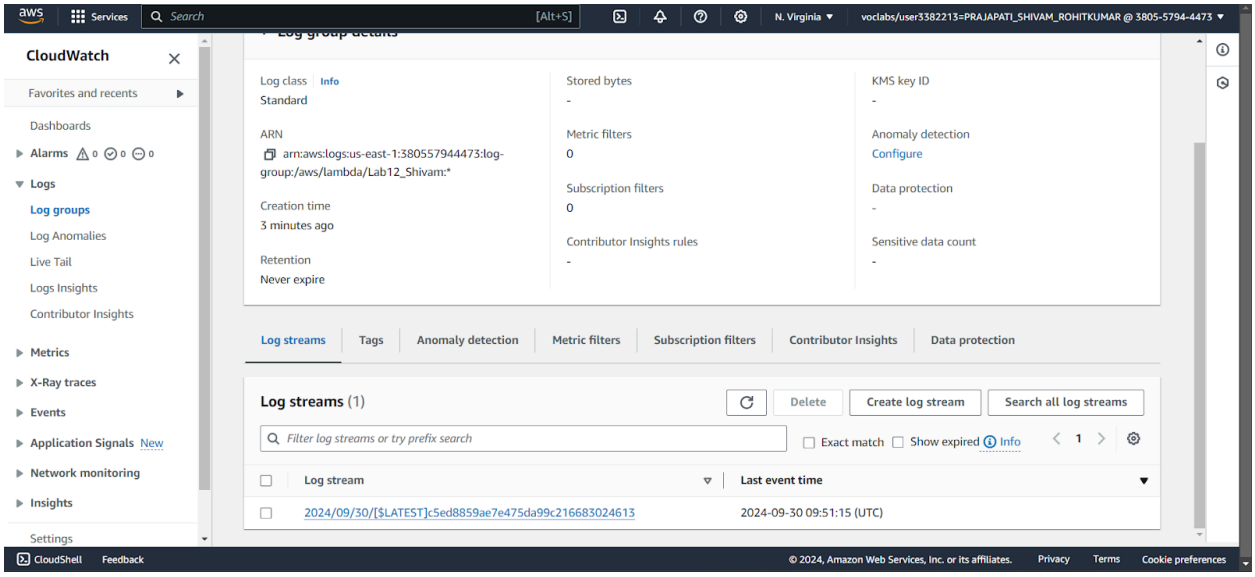


Click on the logs:

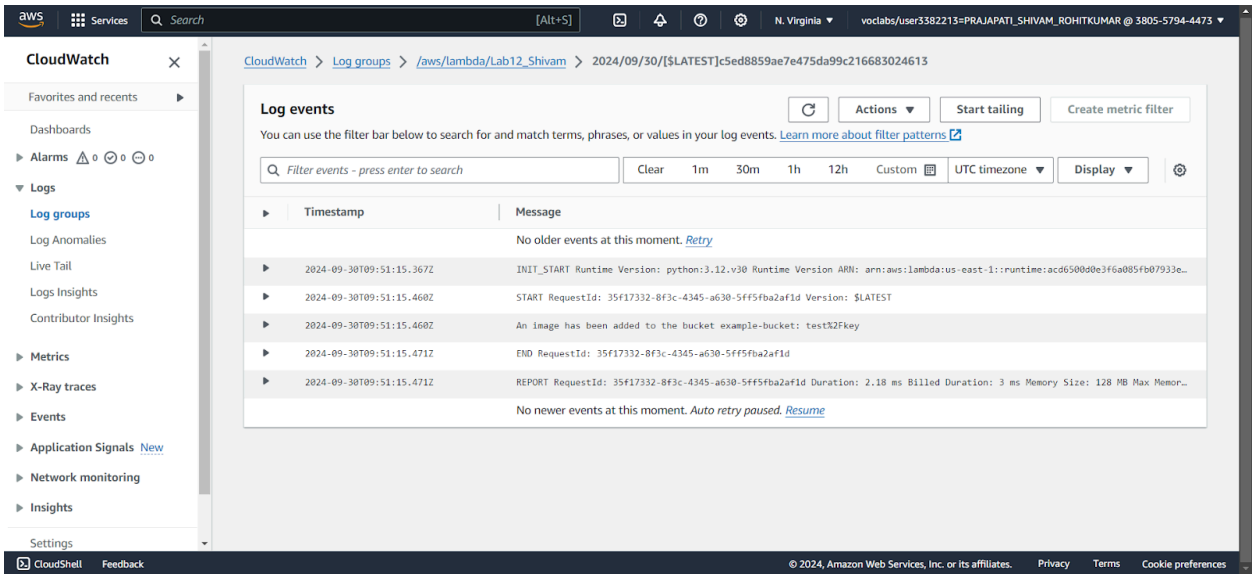


Click on the log group:

Name : Shivam.R.Prajapati Div: D15C Roll No: 41 Academic Year: 2024-25



Scrolled down and click on the log stream:



CONCLUSION:

In this experiment, we successfully created an AWS Lambda function that logs a message when an image is uploaded to an S3 bucket. It's important to choose the S3 Put template for the event; otherwise, the code will give an error. The function was triggered correctly when files were uploaded to S3, showing that Lambda's event-driven design works well. This experiment showed how Lambda can respond to S3 events and how to fix common problems with the event setup.