Adv DevOps Exp-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

Theory: Exp12

AWS Lambda and S3 Integration:

AWS Lambda allows you to execute code in response to various events, including those triggered by Amazon S3. When an object is added to an S3 bucket, it can trigger a Lambda function to execute, allowing for event-driven processing without managing servers.

Workflow:

1. Create an S3 Bucket:

○ First, create an S3 bucket that will store the objects. This bucket will act as the trigger source for the Lambda function.

2. Create the Lambda Function:

○ Set up a new Lambda function using AWS Lambda’s console. You can choose a runtime environment like Python, Node.js, or Java.
○ Write code that logs a message like “An Image has been added” when triggered.

3. Set Up Permissions:

○ Ensure that the Lambda function has the necessary permissions to access S3.
You can do this by attaching an IAM role with policies that allow reading from the bucket and writing logs to CloudWatch.

4. Configure S3 Trigger:

○ Link the S3 bucket to the Lambda function by setting up a trigger. Specify that the
function should be triggered when an object is created in the bucket (e.g., when
an image is uploaded).

5. Test the Setup:
○ Upload an object (e.g., an image) to the S3 bucket to test the trigger. The Lambda function should execute and log the message "An Image has been added" in AWS CloudWatch Logs. Prerequisites: AWS Personal Account

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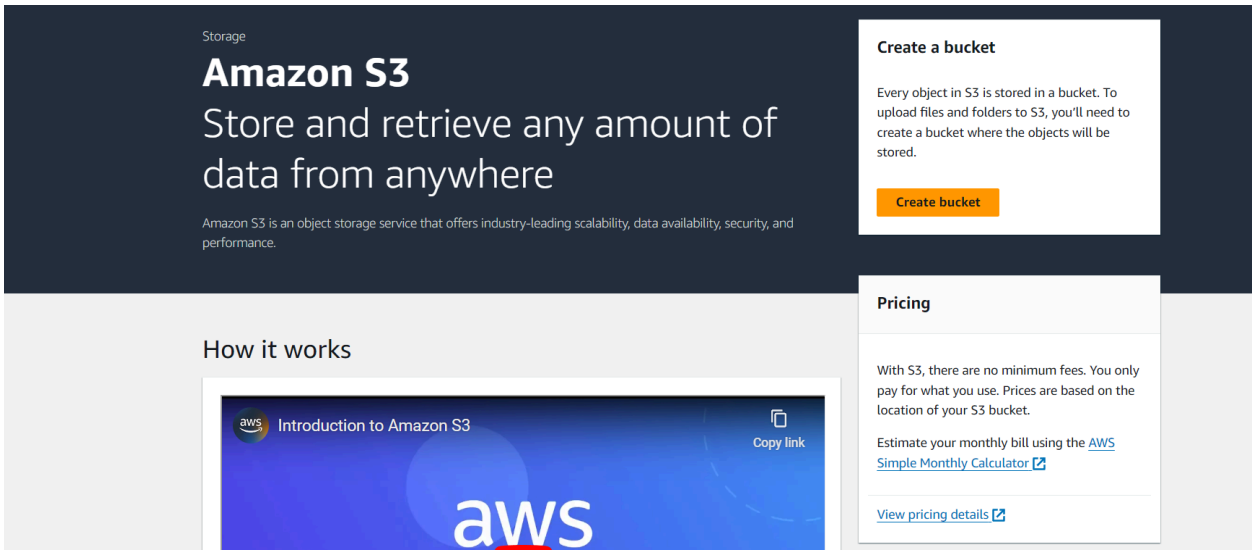
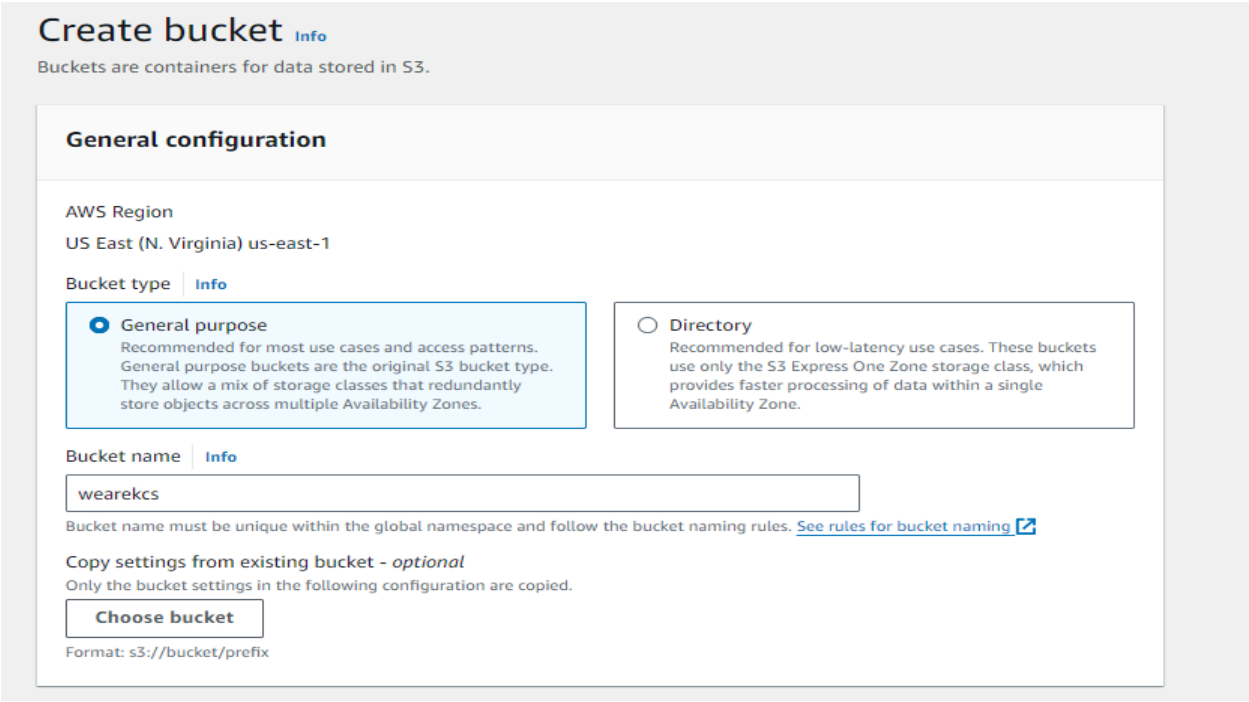
Steps To create the lambda function:

Step 1: Login to your AWS Personal account. Now open S3 from services and click on create S3 bucket.



Step 2: Now Give a name to the Bucket, select general purpose project and deselect the Block public access and keep other this to default.



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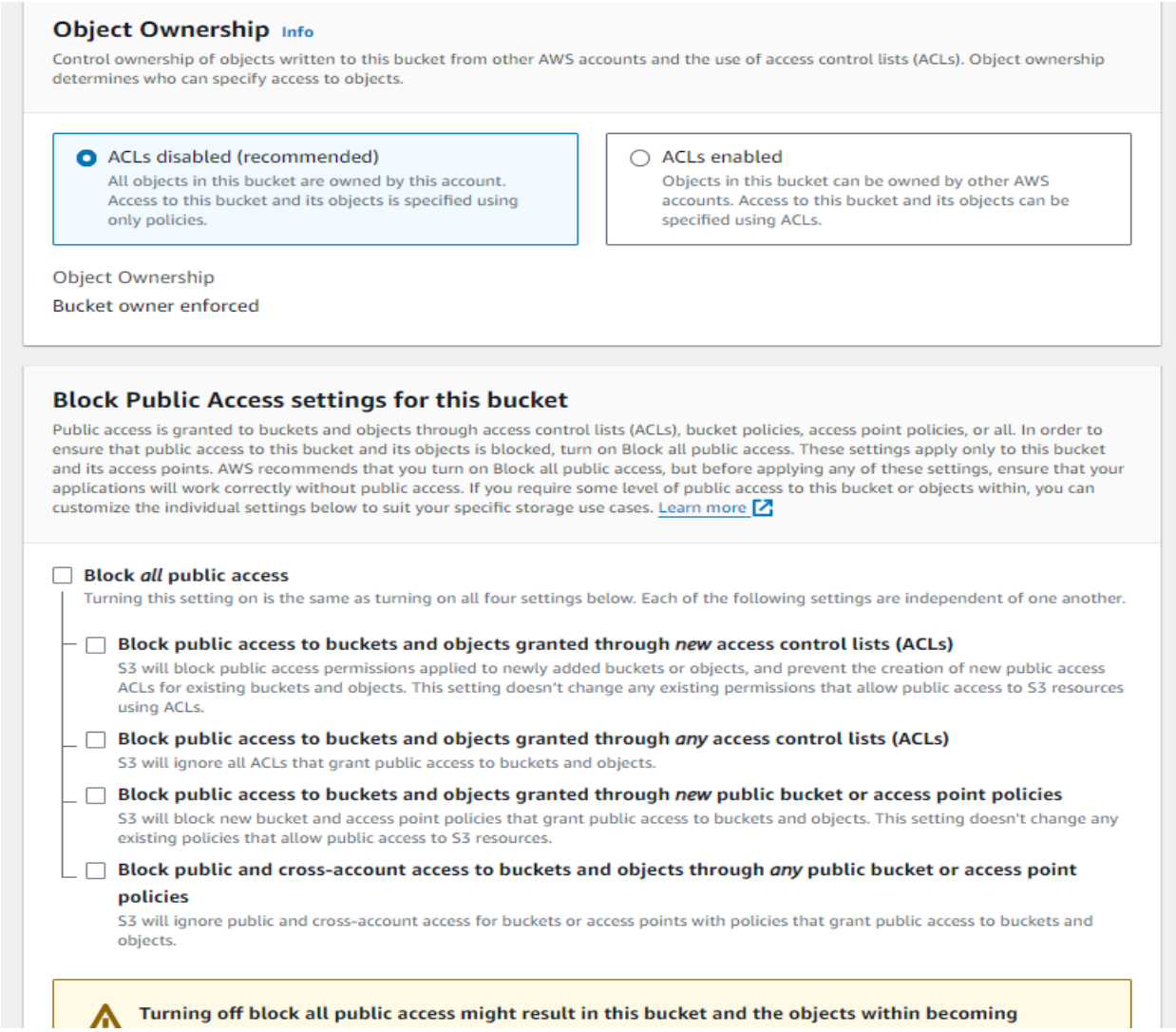
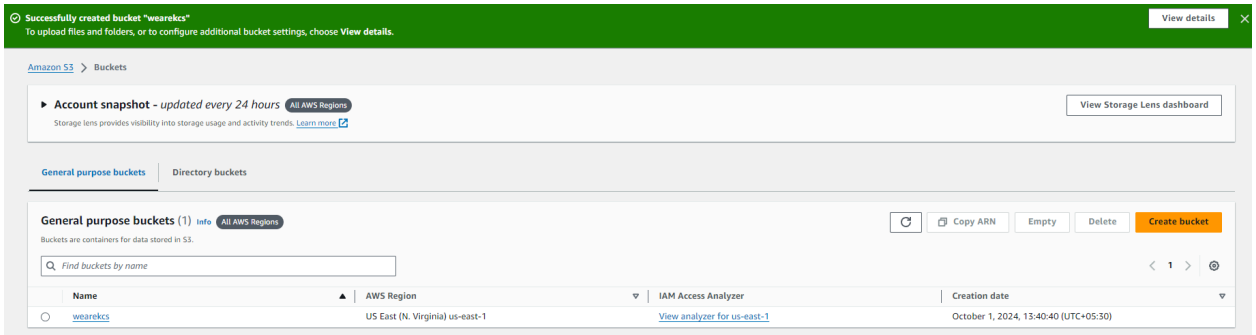
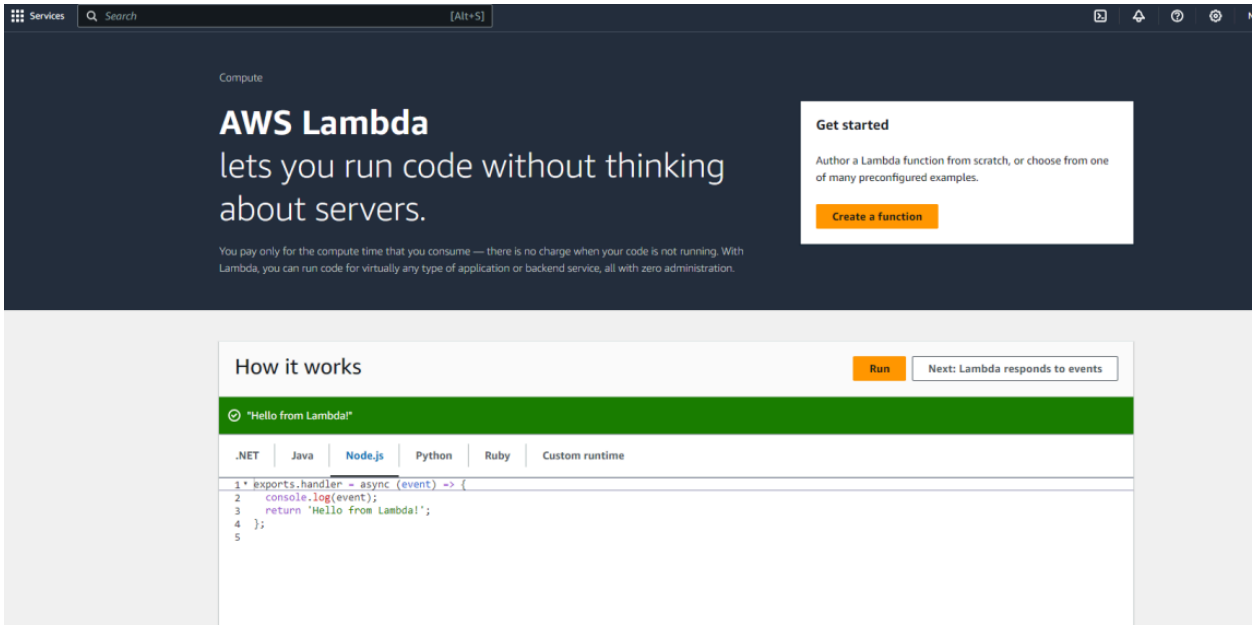
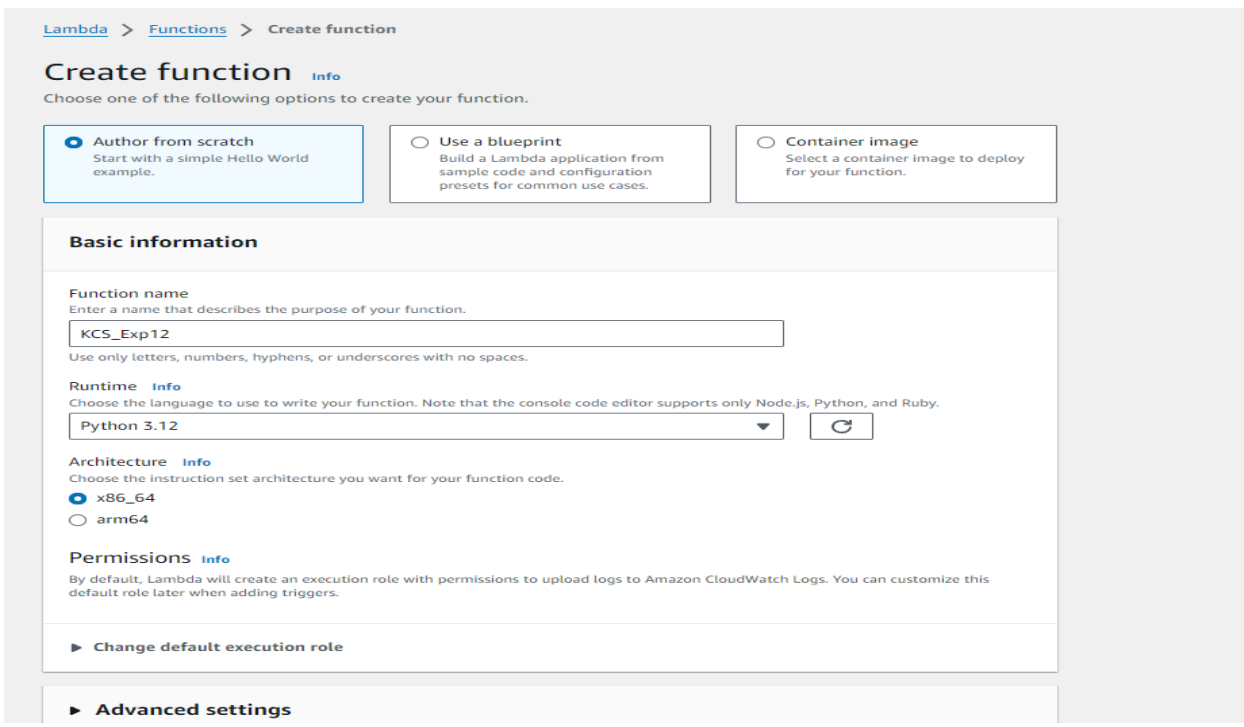




Step 3: Open lambda console and click on create function button



Step 4: Now Give a name to your Lambda function, Select the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby. So will select Python 3.12 , Architecture as x86, and Execution role to Create a new role with basic Lambda permissions.



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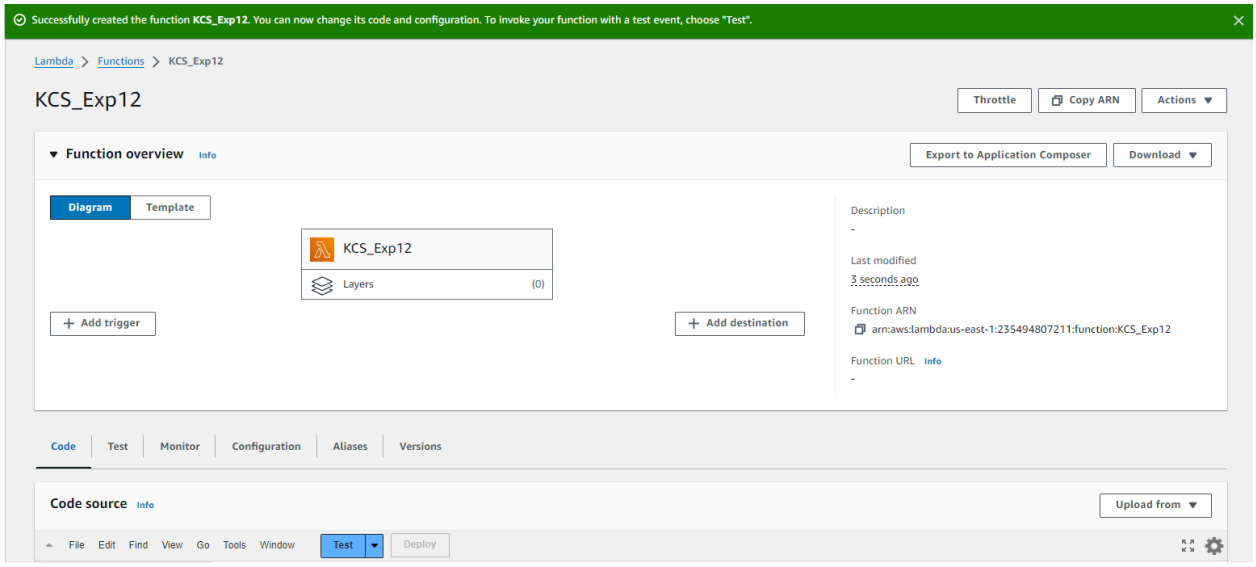
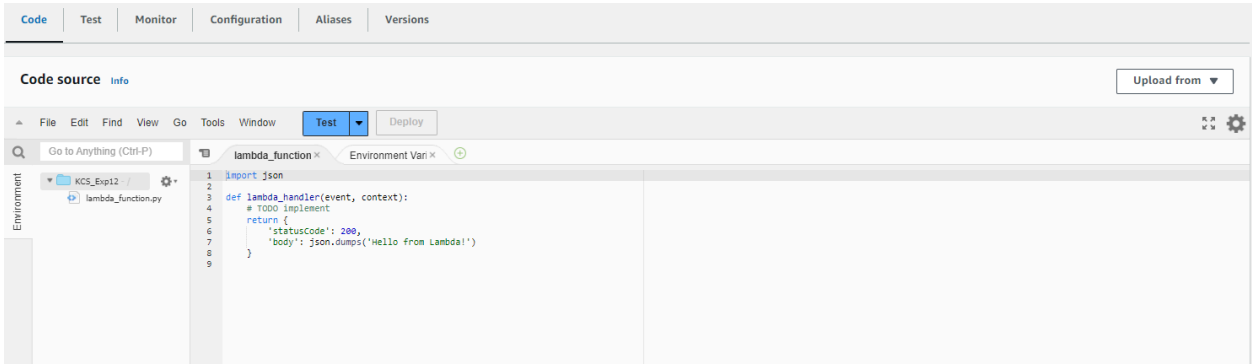
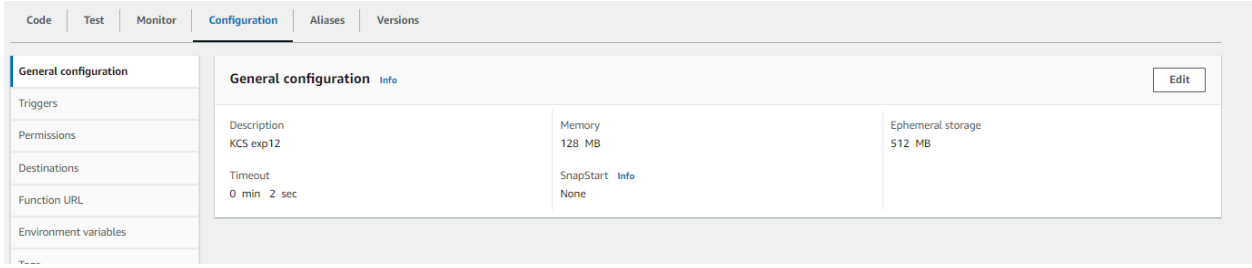
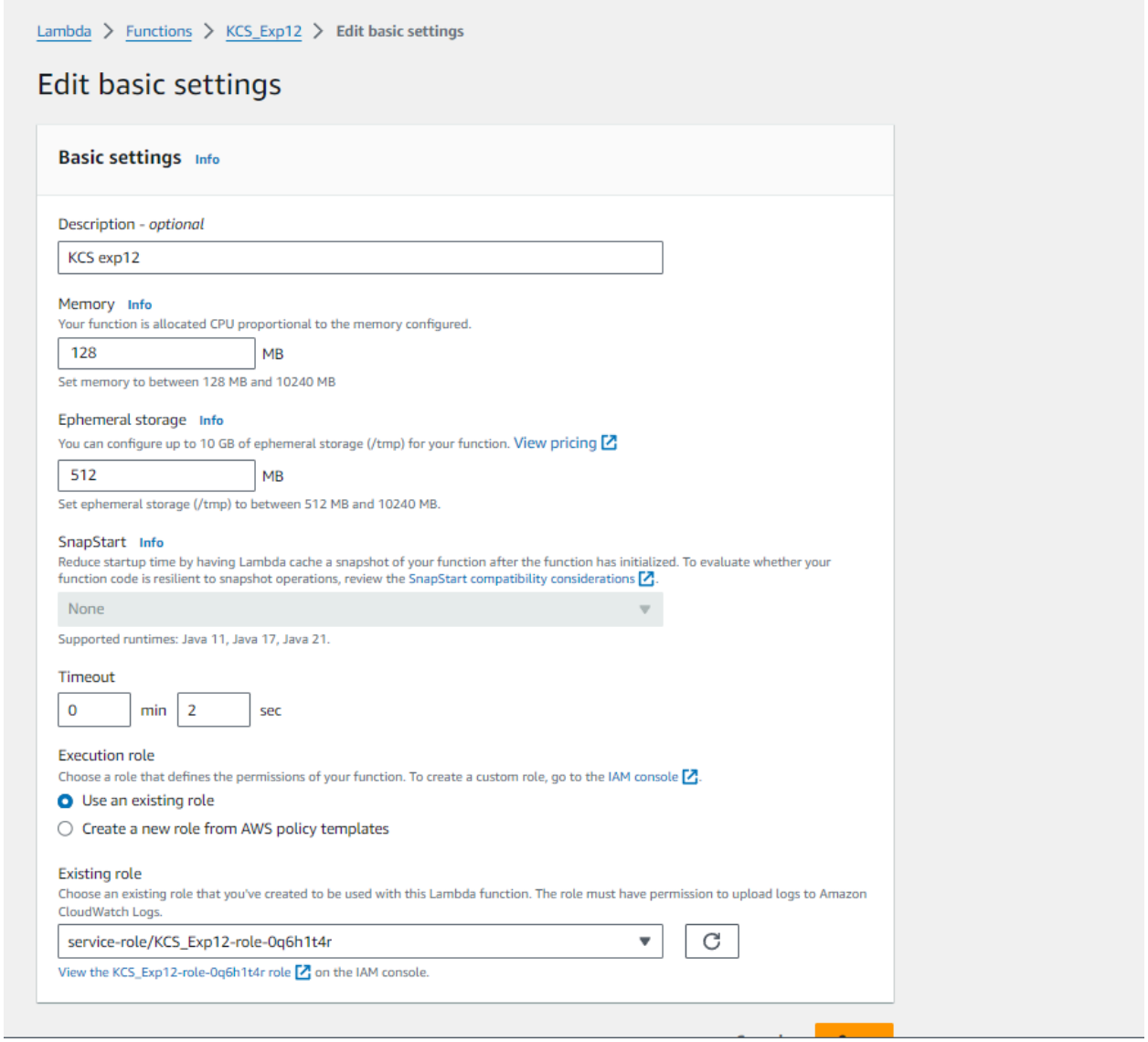




To See or Edit the basic settings go to configuration then click on edit general setting

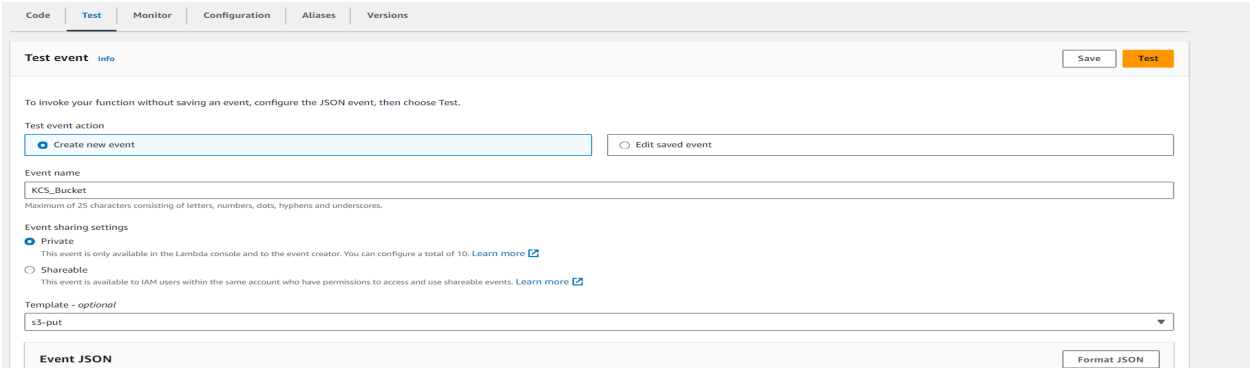


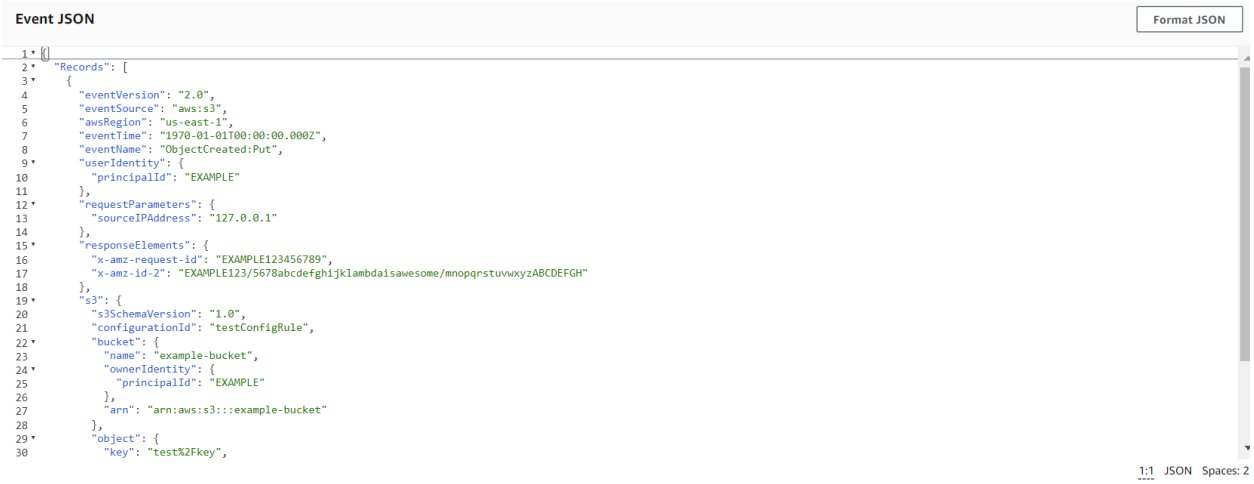
Change any setting of your choice. Here I have set a timeout of 2 secs.Then save changes



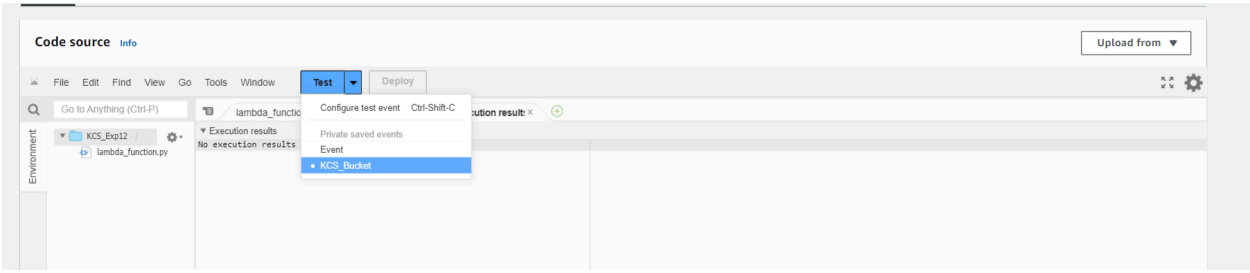
Step 5: Now Click on the Test tab then select Create a new event, give a name to the event and select Event Sharing to private, and select s3 put template.

Name: Shubham Jha Div:D15C Roll No:19





Step 6: Now In the Code section select the created event from the dropdown .



Step 7: Now In the Lambda function click on add tigger

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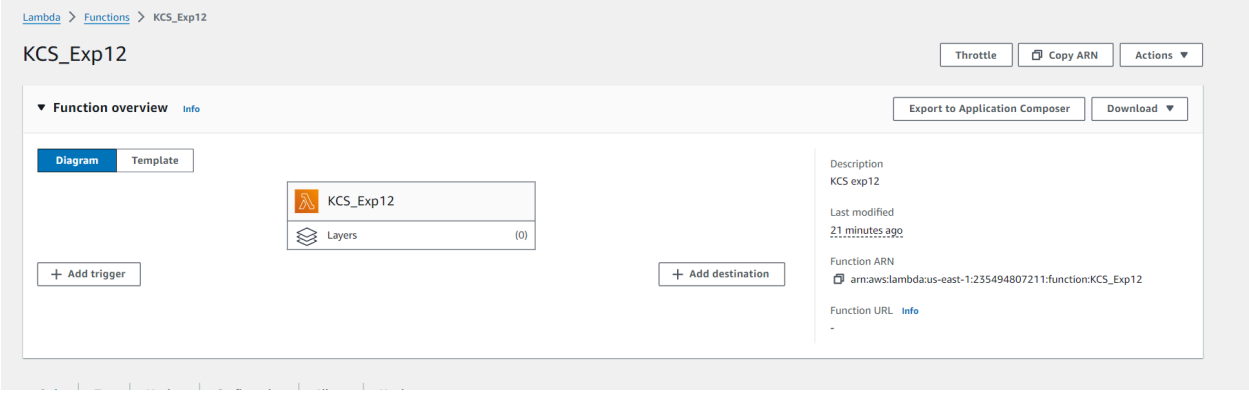
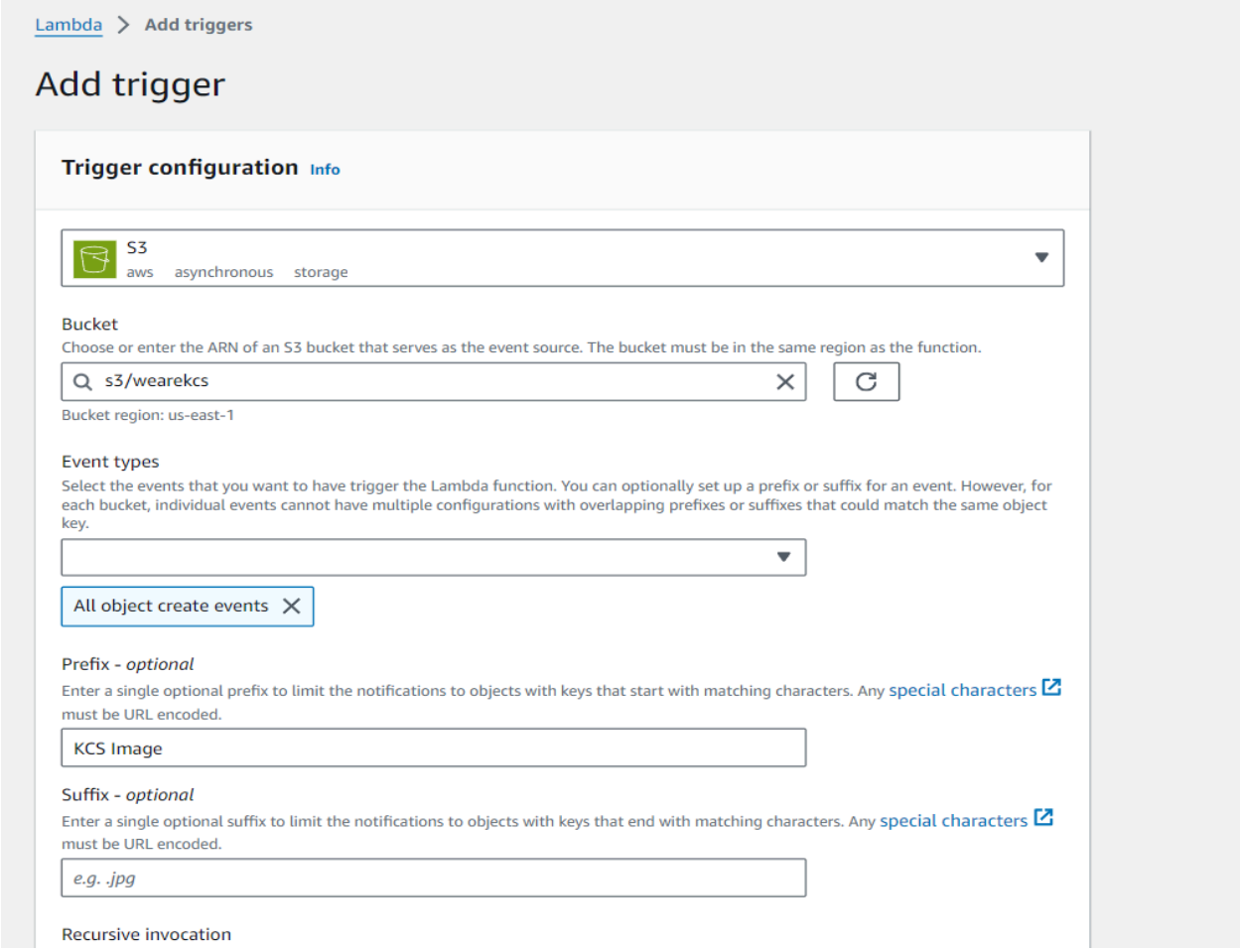


Now select the source as S3 then select the bucket name from the dropdown, keep other things to default and also you can add prefix to image.



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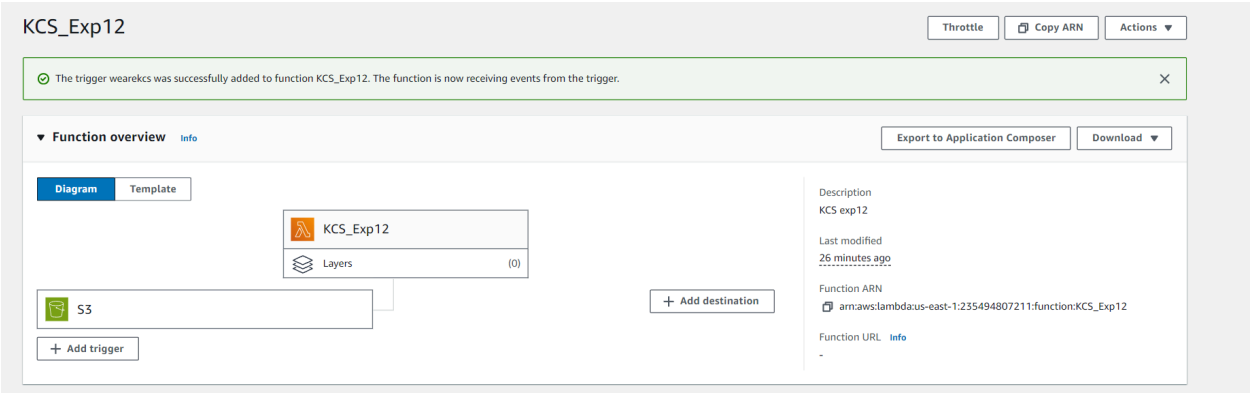

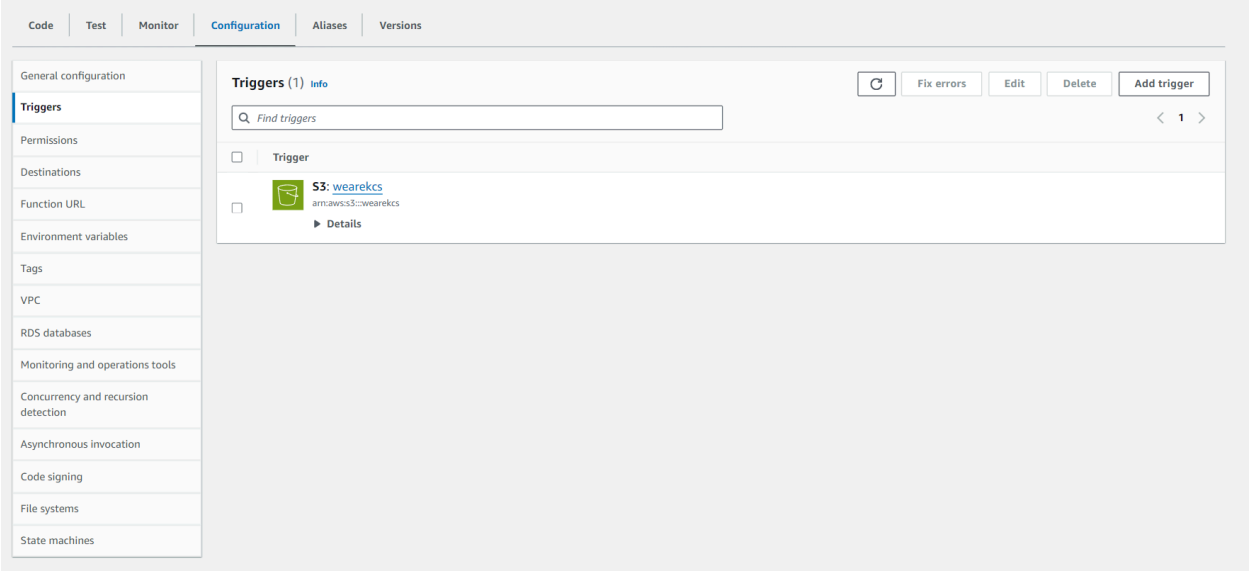

Step 8: Now Write code that logs a message like “An Image has been added” when triggered. Save the file and click on deploy.

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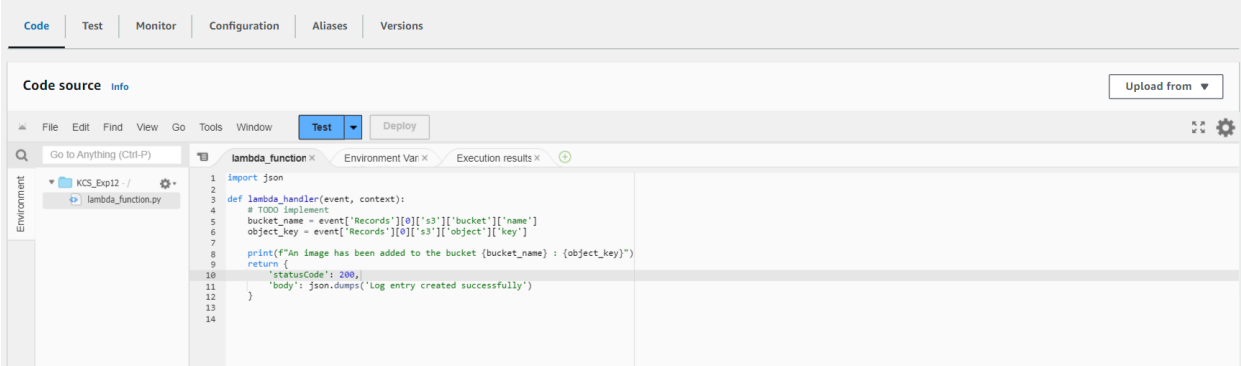

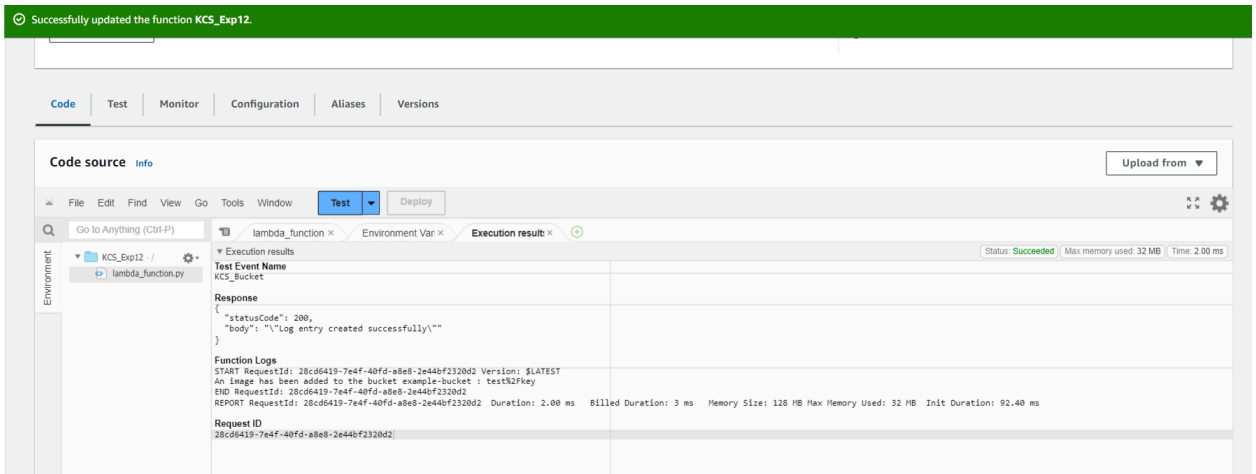

Step 9: Now upload any image to the bucket.

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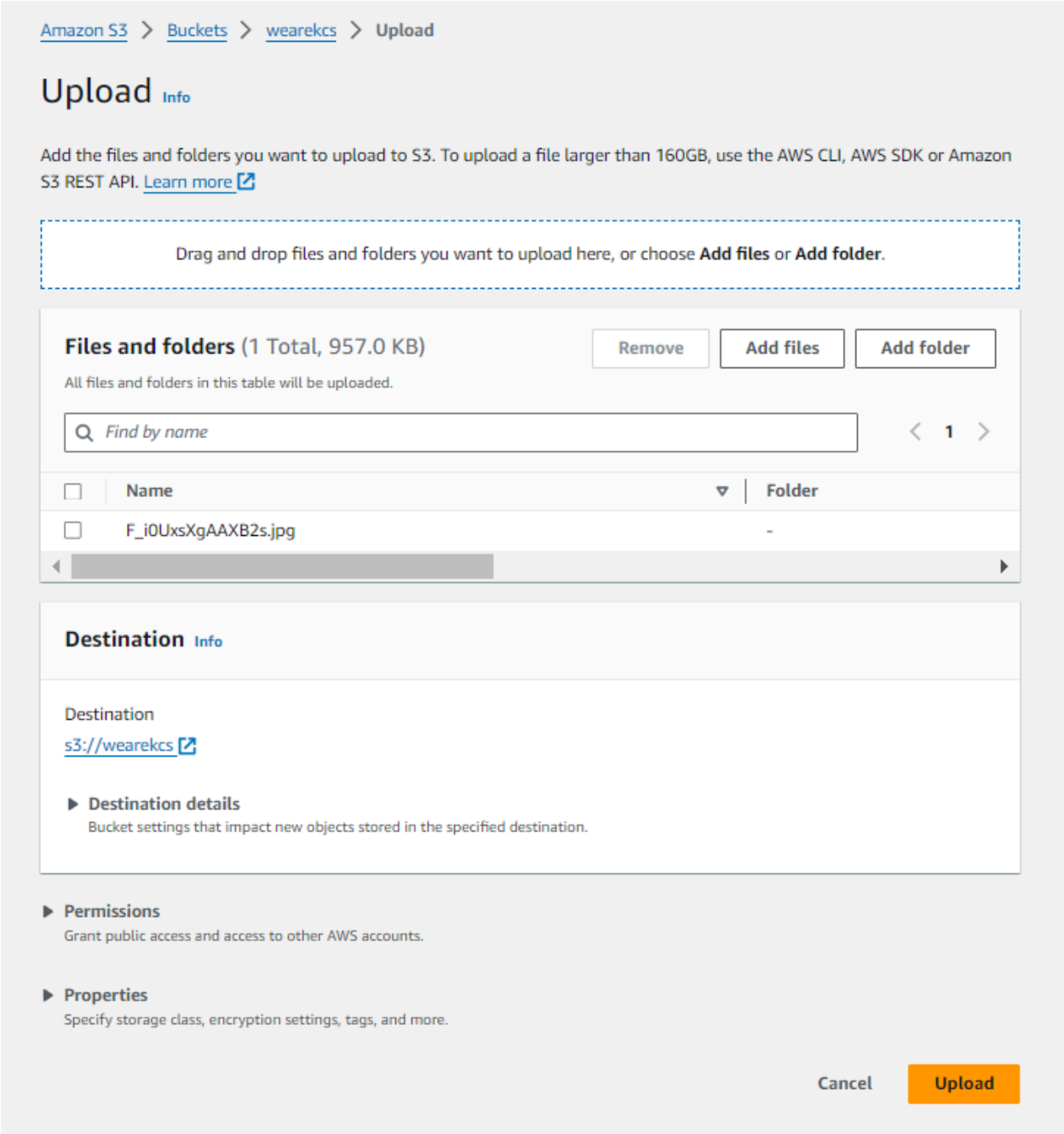

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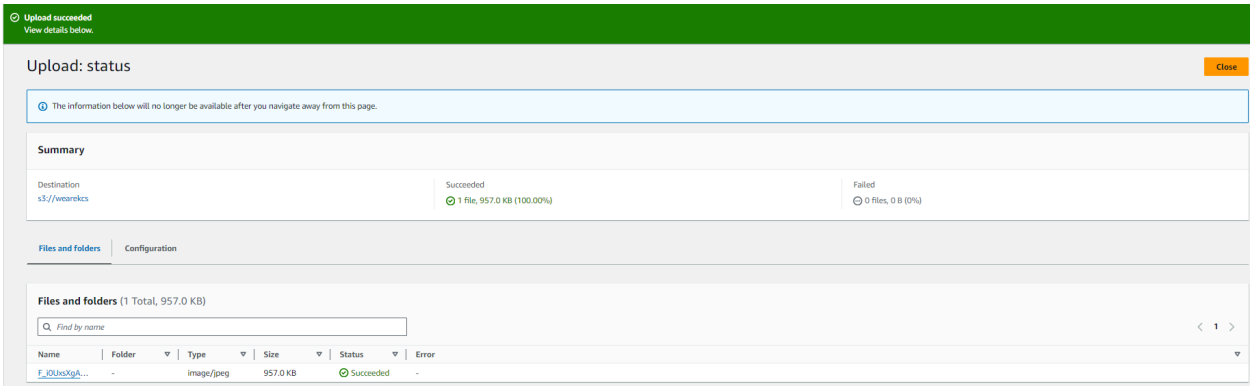
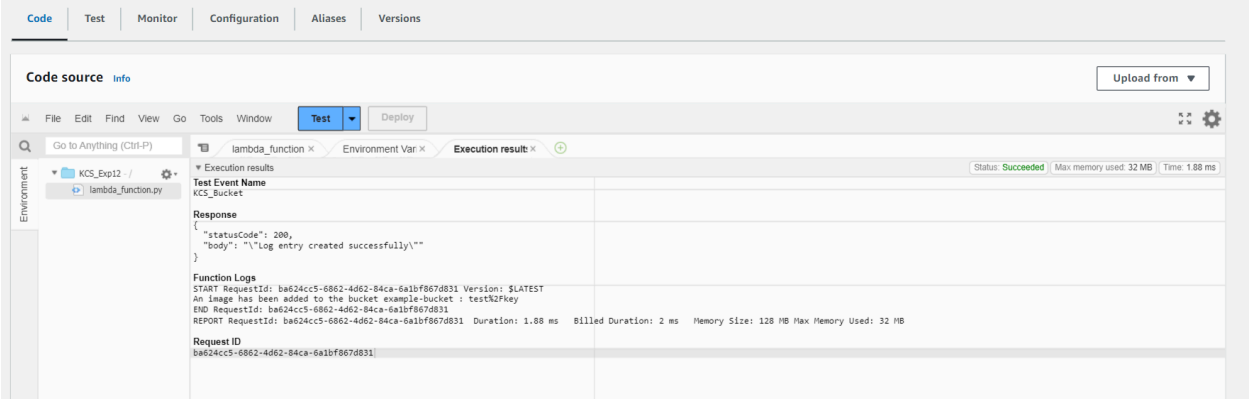


Step 10: Now to click on test in lambda to check whether it is giving log when image is added to S3



Step 11: Now Lets see the log on Cloud watch.To see it go to monitor section and then click on view cloudwatch logs.

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CloudWatch > Log groups > /aws/lambda/KCS_Exp12 > 2024/10/01/[$LATEST]b93d5fc4cf3b4bf8802c5b106ff03bde

Log events

Actions ▼ | Start tailing | Create metric filter

You can use the filter bar below to search for and match terms, phrases, or values in your log events. Learn more about filter patterns

Filter events - press enter to search | Clear | 1m | 30m | 1h | 12h | Custom | UTC timezone ▼ | Display ▼

Timestamp	Message
	No older events at this moment. *Retry*
2024-10-01T08:55:09.068Z	INIT_START Runtime Version: python:3.12.v36 Runtime Version ARN: arn:aws:lambda:us-east-1::runtime:188d9ca2e2714ff5637bd2bbe…
2024-10-01T08:55:09.163Z	START RequestId: 28cd6419-7e4f-40fd-a8e8-2e44bf2320d2 Version: $LATEST
2024-10-01T08:55:09.164Z	An image has been added to the bucket example-bucket : test%2Fkey
2024-10-01T08:55:09.174Z	END RequestId: 28cd6419-7e4f-40fd-a8e8-2e44bf2320d2
2024-10-01T08:55:09.174Z	REPORT RequestId: 28cd6419-7e4f-40fd-a8e8-2e44bf2320d2 Duration: 2.00 ms Billed Duration: 3 ms Memory Size: 128 MB Max Memor…
2024-10-01T08:59:18.675Z	START RequestId: ba624cc5-6862-4d62-84ca-6a1bf867d831 Version: $LATEST
2024-10-01T08:59:18.676Z	An image has been added to the bucket example-bucket : test%2Fkey
2024-10-01T08:59:18.678Z	END RequestId: ba624cc5-6862-4d62-84ca-6a1bf867d831
2024-10-01T08:59:18.678Z	REPORT RequestId: ba624cc5-6862-4d62-84ca-6a1bf867d831 Duration: 1.88 ms Billed Duration: 2 ms Memory Size: 128 MB Max Memor…
	No newer events at this moment. *Auto retry paused.* *Resume*