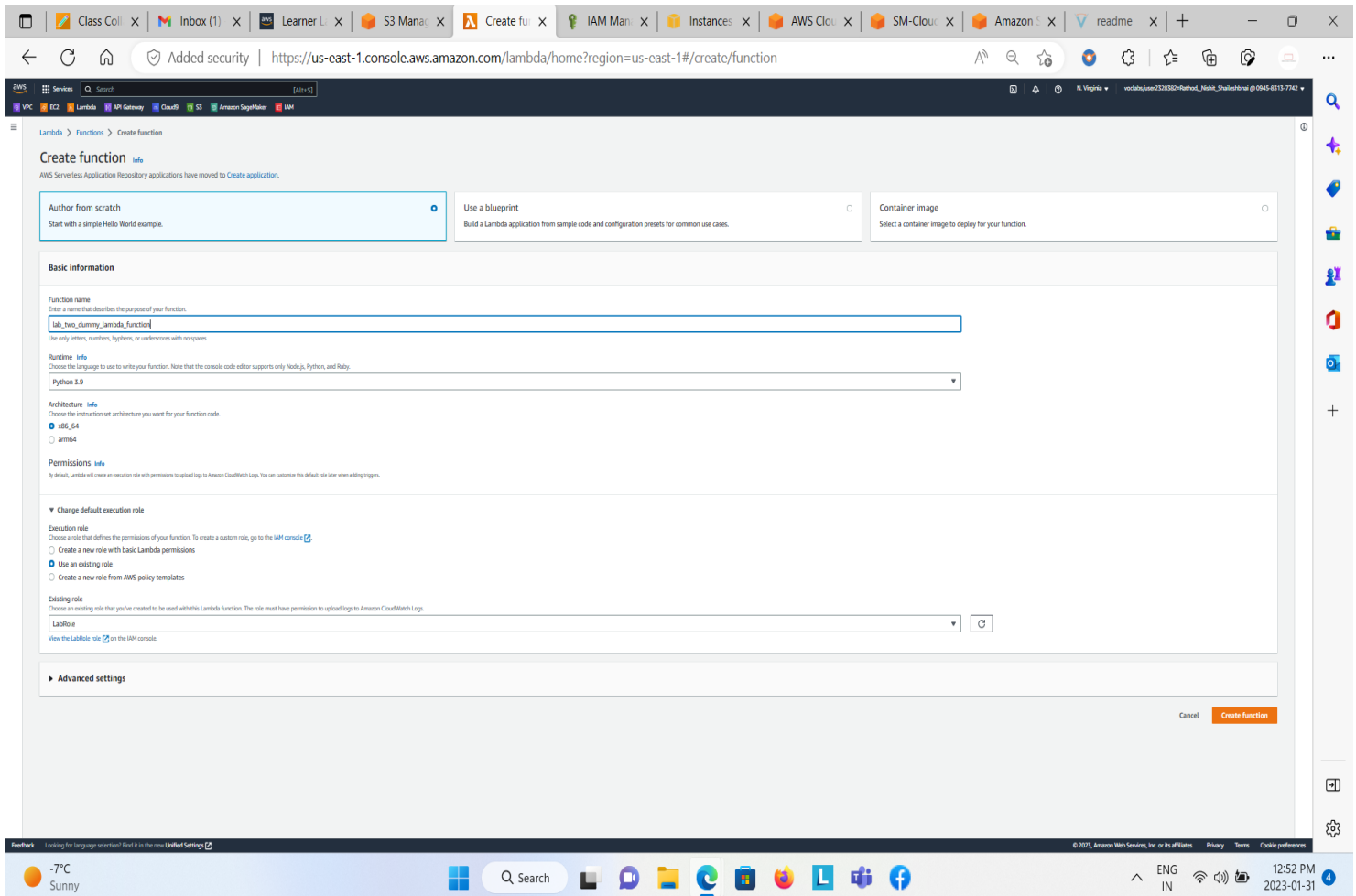


## Assignment Mandatory

- Create a dummy lambda function with Python 3.9 runtime. After creation click on test and select Configure test event, from template option, select S3Put. It shows you the JSON event that is passed from S3 to Lambda service when a put event happens on S3.
- Review the JSON file and as you see, there are entries like bucket name and object key.
- The assignment is you write a Lambda function in Python that it prints the bucket name and object name when you upload an object in S3.
- In S3, learn how to create an event to call a lambda function.



Screenshot of the AWS Lambda console showing a list of functions. The function `lab_two_dummy_lambda_function` is selected.

Function name	Description	Package type	Runtime	Last modified
<code>RoleCreationFunction</code>	Create SLR if absent	Zip	Python 3.8	19 days ago
<code>MainMonitoringFunction</code>	-	Zip	Python 3.8	19 days ago
<code>lablistbuckets</code>	-	Zip	Python 3.9	14 days ago
<code>RedshiftOverwatch</code>	Deletes Redshift Cluster if the count is more than 2.	Zip	Python 3.8	19 days ago
<code>lablistinstances</code>	-	Zip	Python 3.9	14 days ago
<code>listinstances</code>	-	Zip	Python 3.9	14 days ago
<code>RedshiftEventSubscription</code>	Create Redshift event subscription to SNS Topic.	Zip	Python 3.8	19 days ago
<code>lab_two_dummy_lambda_function</code>	-	Zip	Python 3.9	5 minutes ago

Screenshot of the Amazon S3 console showing a list of buckets. The bucket `labtwo-s3bucket` is selected.

Name	AWS Region	Access	Creation date
<code>awslabonebucket</code>	US East (N. Virginia) us-east-1	Bucket and objects not public	January 17, 2023, 16:17:34 (UTC-05:00)
<code>labtwo-s3bucket</code>	US East (N. Virginia) us-east-1	Bucket and objects not public	January 31, 2023, 13:11:46 (UTC-05:00)
<code>moduletwosession</code>	US East (N. Virginia) us-east-1	Bucket and objects not public	January 31, 2023, 11:30:36 (UTC-05:00)
<code>my-bucket-labnr</code>	US East (N. Virginia) us-east-1	Objects can be public	January 17, 2023, 09:23:25 (UTC-05:00)
<code>my-nrs3bucket</code>	US East (N. Virginia) us-east-1	Objects can be public	January 14, 2023, 16:38:08 (UTC-05:00)
<code>sm-nr-s3bucket</code>	US East (N. Virginia) us-east-1	Bucket and objects not public	January 14, 2023, 16:32:39 (UTC-05:00)

Go to the lambda function that was initially created and click on Test.

Create a new event under Test Event, Set the event name and Select S3 PUT from the template and save it.

Browser tabs: Inbox (1) - nishitsrathod@gmail.com, File, Learner Lab, lab\_two\_dummy\_lambda\_function, readme

URL: https://us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/lab\_two\_dummy\_lambda\_function?tab=...

Services: VPC, EC2, Lambda, API Gateway, Cloud9, S3, Amazon SageMaker, IAM

Test event info

To invoke your function without saving an event, configure the JSON event, then choose Test.

Test event action

☒ Create new event ☐ Edit saved event

Event name

labtwo3putevent

Maximum of 25 characters consisting of letters, numbers, dots, hyphens and underscores.

Event sharing settings

☒ Private  
This event is only available in the Lambda console and to the event creator. You can configure a total of 10. [Learn more](#)

☐ Shareable  
This event is available to IAM users within the same account who have permissions to access and use shareable events. [Learn more](#)

Template - optional

s3-put

Event JSON

Format JSON

```
1- {
2-   "Records": [
3-     {
4-       "eventVersion": "2.0",
5-       "eventSource": "aws:s3",
6-       "awsRegion": "us-east-1",
7-       "eventTime": "1970-01-01T00:00:00.000Z",
8-       "eventName": "ObjectCreated:Put",
9-       "userIdentity": {
10-        "principalId": "EXAMPLE"
11-      },
12-       "requestParameters": {
13-        "sourceIPAddress": "127.0.0.1"
14-      },
15-       "responseElements": {
16-        "x-amz-request-id": "EXAMPLE123456789",
17-        "x-amz-id-2": "EXAMPLE123/5678abcde9ghi1jklmbdasawesomemnopqrstuvwxyzABCDEFGH"
18-      },
19-       "s3": {
20-        "s3SchemaVersion": "1.0",
```

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## Add the S3 Trigger to the Lambda Function

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URL: https://us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/add/relation?focus=aws%2FLambda&target=arn...

Services: VPC, EC2, Lambda, API Gateway, Cloud9, S3, Amazon SageMaker, IAM

Lambda > Add trigger

Add trigger

Trigger configuration info

S3 storage

Bucket

Please select the S3 bucket that serves as the event source. The bucket must be in the same region as the function.

Q s3/labtwo-s3bucket

Bucket region: us-east-1

Event type

Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.

PUT

Prefix - optional

Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.

e.g. images/

Suffix - optional

Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.

e.g. .jpg

Recursive Invocation

If your function writes objects to an S3 bucket, ensure that you are using different S3 buckets for input and output. Writing to the same bucket increases the risk of creating a recursive invocation, which can result in increased Lambda usage and increased costs. [Learn more](#)

☒ I acknowledge that using the same S3 bucket for both input and output is not recommended and that this configuration can cause recursive invocations, increased Lambda usage, and increased costs.

Lambda will add the necessary permissions for AWS S3 to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.

Cancel Add

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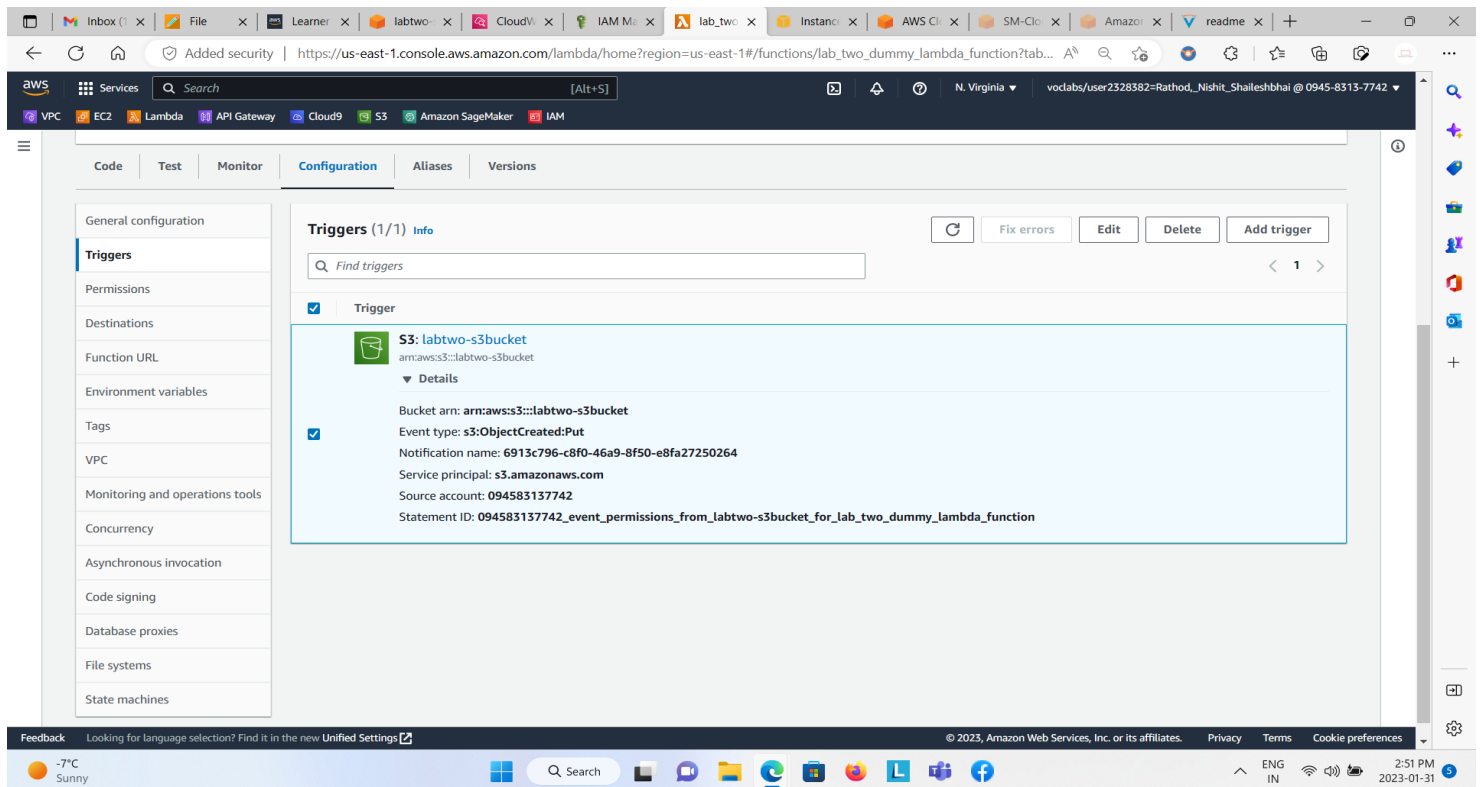
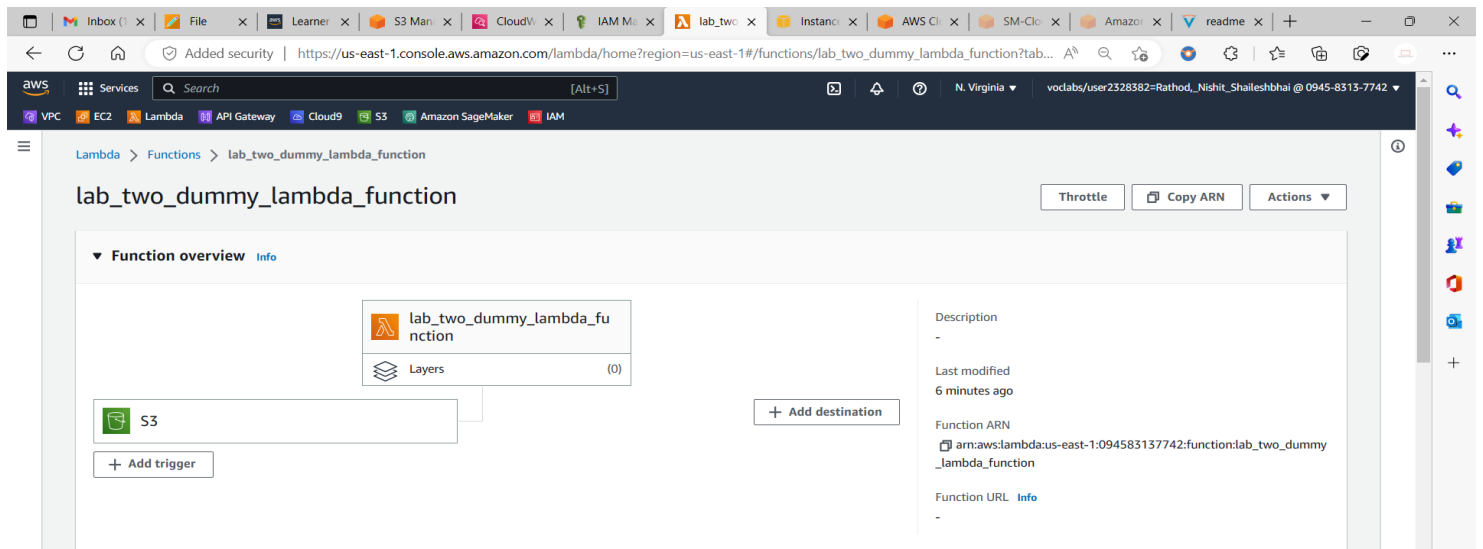
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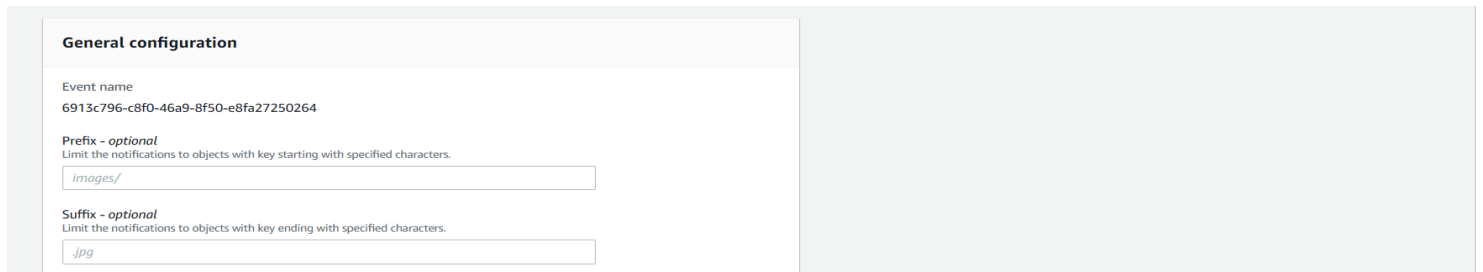
Search

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Or you can go into your S3 bucket, select properties tab and navigate towards the event notification and create it.



The screenshot shows the AWS IAM console interface. The top navigation bar includes the AWS logo, a search bar, and a list of services (VPC, EC2, Lambda, API Gateway, Cloud9, S3, Amazon SageMaker, IAM). The main content area is titled 'Event types' and contains a description: 'Specify at least one event for which you want to receive notifications. For each group, you can choose an event type for all events, or you can choose one or more individual events.'

Under the 'Object creation' section, there are three event types listed with checkboxes:

- ☒ **Put**  
s3:ObjectCreated:Put
- ☐ **Post**  
s3:ObjectCreated:Post
- ☐ **Copy**  
s3:ObjectCreated:Copy
- ☐ **Multipart upload completed**  
s3:ObjectCreated:CompleteMultipartUpload

Under the 'Object removal' section, there are two event types listed with checkboxes:

- ☐ **Permanently deleted**  
s3:ObjectRemoved:Delete
- ☐ **Delete marker created**  
s3:ObjectRemoved:DeleteMarkerCreated

Under the 'Object restore' section, there are three event types listed with checkboxes:

- ☐ **Restore initiated**  
s3:ObjectRestore:Post
- ☐ **Restore completed**  
s3:ObjectRestore:Completed
- ☐ **Restored object expired**  
s3:ObjectRestore:Delete

The bottom of the screen shows the Windows taskbar with various application icons and the system clock indicating 2:52 PM on 2023-01-31.

The screenshot shows the AWS IAM console interface for configuring an S3 Intelligent-Tiering archive event. The 'Destination' section is highlighted, indicating the event's target. A note states: 'Before Amazon S3 can publish messages to a destination, you must grant the Amazon S3 principal the necessary permissions to call the relevant API to publish messages to an SNS topic, an SQS queue, or a Lambda function. Learn more'. The 'Destination' is set to 'Lambda function', and the 'Specify Lambda function' section shows the function name 'arn:aws:lambda:us-east-1:094583137742:function:lab\_two\_dummy\_lambda\_function'.

From Lambda Function, go to the Test Event, click on edit saved event. Choose the created event name and you will be able to see the JSON code. Edit the entries like S3 bucket name, arn and object key [Note: Once the object is been uploaded in that S3 bucket you can edit the entries].

Test event **Info** Delete Save Test

To invoke your function without saving an event, modify the event, then choose Test. Lambda uses the modified event to invoke your function, but does not overwrite the original event until you choose Save changes.

Test event action

☐ Create new event ☒ Edit saved event

Event name

LabTwo\_S3PutEvent

Event JSON Format JSON

```
1 {
2   "Records": [
3     {
4       "eventVersion": "2.0",
5       "eventSource": "aws:s3",
6       "awsRegion": "us-east-1",
7       "eventTime": "1970-01-01T00:00:00.000Z",
8       "eventName": "ObjectCreated:Put",
9       "userIdentity": {
10        "principalId": "EXAMPLE"
11      },
12      "requestParameters": {
13        "sourceIPAddress": "127.0.0.1"
14      },
15      "responseElements": {
16        "x-amz-request-id": "EXAMPLE123456789",
17        "x-amz-id-2": "EXAMPLE123/5678abcdefgijklambdaisawesome/mnopqrstuvwxyzABCDEFGH"
18      },
19      "s3": {
20        "s3SchemaVersion": "1.0",
21      }
22    }
23  ]
24 }
```

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Event name

LabTwo\_S3PutEvent

Event JSON Format JSON

```
8   "eventName": "ObjectCreated:Put",
9   "userIdentity": {
10    "principalId": "EXAMPLE"
11  },
12  "requestParameters": {
13    "sourceIPAddress": "127.0.0.1"
14  },
15  "responseElements": {
16    "x-amz-request-id": "EXAMPLE123456789",
17    "x-amz-id-2": "EXAMPLE123/5678abcdefgijklambdaisawesome/mnopqrstuvwxyzABCDEFGH"
18  },
19  "s3": {
20    "s3SchemaVersion": "1.0",
21    "configurationId": "testConfigRule",
22    "bucket": {
23      "name": "labtwo-s3bucket",
24      "ownerIdentity": {
25        "principalId": "EXAMPLE"
26      },
27      "arn": "arn:aws:s3:::labtwo-s3bucket"
28    },
29    "object": {
30      "key": "s3putobjectImage.png",
31      "size": 1024,
32      "eTag": "0123456789abcdef0123456789abcdef",
33      "sequencer": "0A1B2C3D4E5F678901"
34    }
35  }
36 }
37 }
38 }
```

Feedback Looking for language selection? Find it in the new Unified Settings [↗](#)

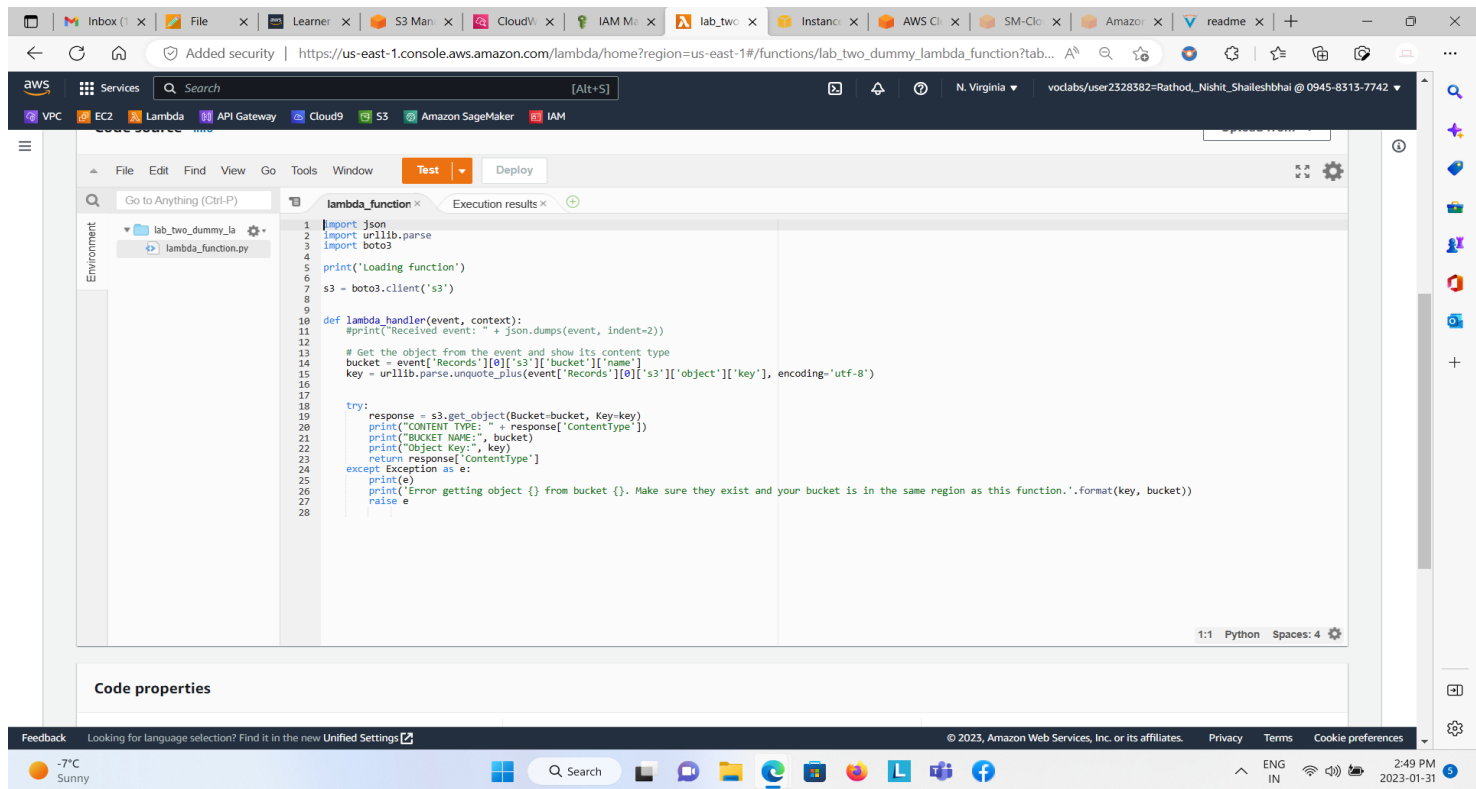
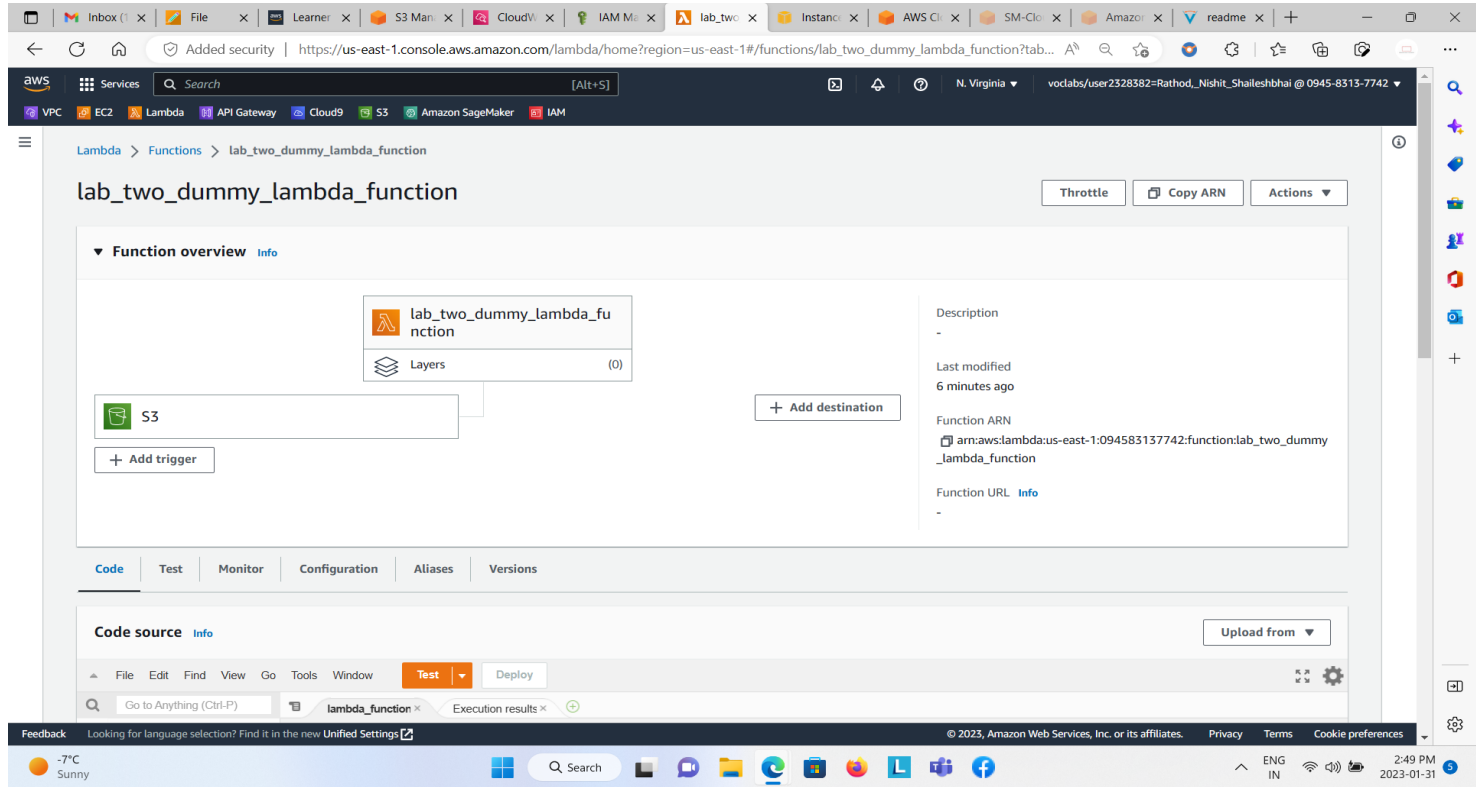
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Before that, write the lambda function code as I have writttern below to get the Bucket Name and Object Key of that uploaded object in the S3 Bucket.



Before testing this code we have to upload the the file in S3 bucket which will act as our object.

The screenshot shows the Amazon S3 console interface. The left sidebar contains navigation options like Buckets, Access Points, and Storage Lens. The main content area displays the 'labtwo-s3bucket' with tabs for Objects, Properties, Permissions, Metrics, Management, and Access Points. Under the 'Objects' tab, there is a list of objects. One object is visible: 's3putobjectImage.png', which is a PNG file, 14.9 KB in size, and stored in the 'Standard' storage class. It was last modified on January 31, 2023, at 13:26:23 (UTC-05:00). Above the list, there are buttons for 'Copy S3 URI', 'Copy URL', 'Download', 'Open', 'Delete', 'Actions', and 'Create folder'. There is also an 'Upload' button and a search bar for finding objects by prefix.

Now we have to execute the code from the lambda function which will output the Bucket Name and Object Key.

The screenshot shows the AWS Lambda console interface. The left sidebar contains navigation options like Functions, Layers, and Triggers. The main content area displays the 'lab\_two\_dummy\_lambda\_function' with tabs for Code, Configuration, and Execution. Under the 'Execution' tab, there is a list of execution results. One execution is visible: 'lab\_two\_dummy\_lambda\_function', which is a Python function, 14.9 KB in size, and stored in the 'Standard' storage class. It was last modified on January 31, 2023, at 13:26:23 (UTC-05:00). The execution status is 'Succeeded'. Below the list, there is a section for 'Code properties'.



Just to rectify the things we were doing is correctly functioning or not we can navigate to the CloudWatch and see the log files.

CloudWatch > Log groups > /aws/lambda/lab\_two\_dummy\_lambda\_function

### /aws/lambda/lab\_two\_dummy\_lambda\_function

Actions View in Logs Insights Search log group

#### Log group details

ARN arn:aws:logs:us-east-1:094583137742:log-group:/aws/lambda/lab_two_dummy_lambda_function:*	Metric filters 0 Subscription filters 0 Contributor Insights rules -	Data protection - new Inactive Sensitive data found - new - KMS key ID -
Creation time 2 hours ago		
Retention Never expire		
Stored bytes -		

Log streams Metric filters Subscription filters Contributor Insights Tags Data protection - new

#### Log streams (1)

Filter log streams or try prefix search

Exact match Show expired Info

Log stream	Last event time
2023/01/31/[\$LATEST]698dde7a23f94c52a0a16ebe3554e701	2023-01-31 14:47:20 (UTC-05:00)

CloudWatch > Log groups > /aws/lambda/lab\_two\_dummy\_lambda\_function > 2023/01/31/[\$LATEST]698dde7a23f94c52a0a16ebe3554e701

### Log events

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 Clear 1m 30m 1h 12h Custom Display

Timestamp	Message
No older events at this moment. <a href="#">Retry</a>	
2023-01-31T14:47:20.502-05:00	START RequestId: 6f9a8536-6f67-4cff-b063-4b437ff692c2 Version: \$LATEST
2023-01-31T14:47:20.690-05:00	CONTENT TYPE: image/png
2023-01-31T14:47:20.690-05:00	BUCKET NAME: labtwo-s3bucket
2023-01-31T14:47:20.690-05:00	Object Key: s3putobjectImage.png
2023-01-31T14:47:20.711-05:00	END RequestId: 6f9a8536-6f67-4cff-b063-4b437ff692c2
2023-01-31T14:47:20.711-05:00	REPORT RequestId: 6f9a8536-6f67-4cff-b063-4b437ff692c2 Duration: 208.58 ms Billed Duration: 209 ms Memory Size: 128 MB Max Memory Used: 70 MB
No newer events at this moment. <a href="#">Auto retry paused</a> . <a href="#">Resume</a>	