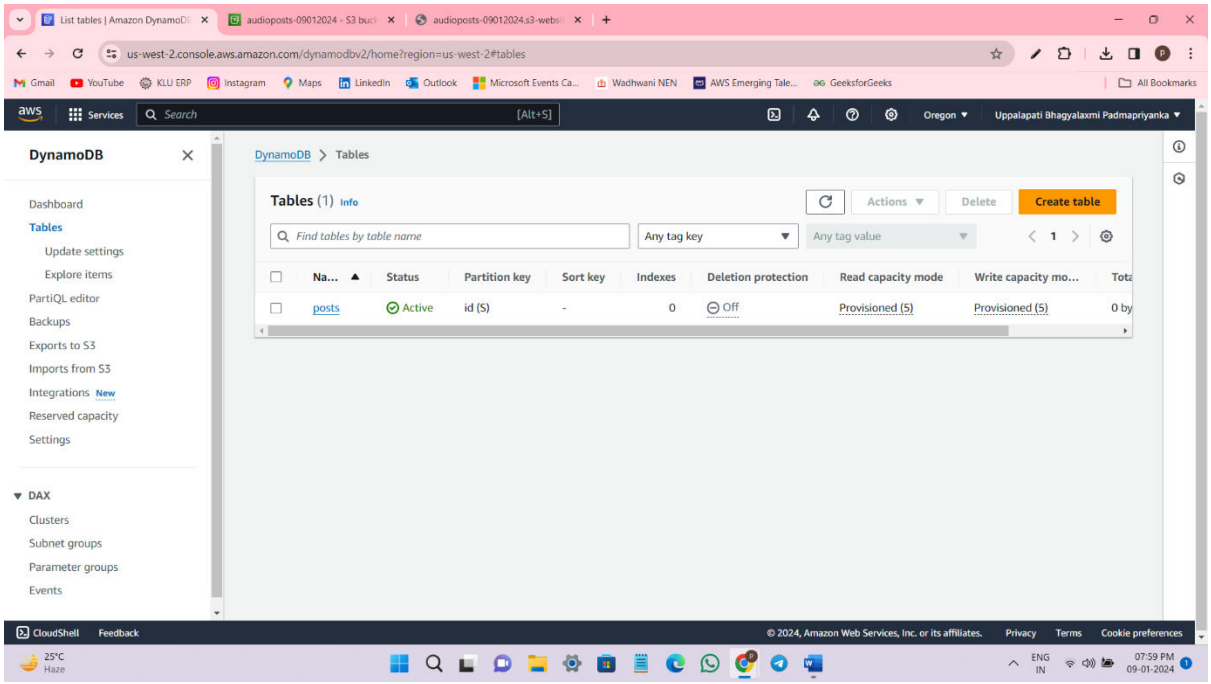
Text to Speech Conversion with Amazon Polly

→ Construct a project to convert a text to speech(audio) using Amazon Polly.

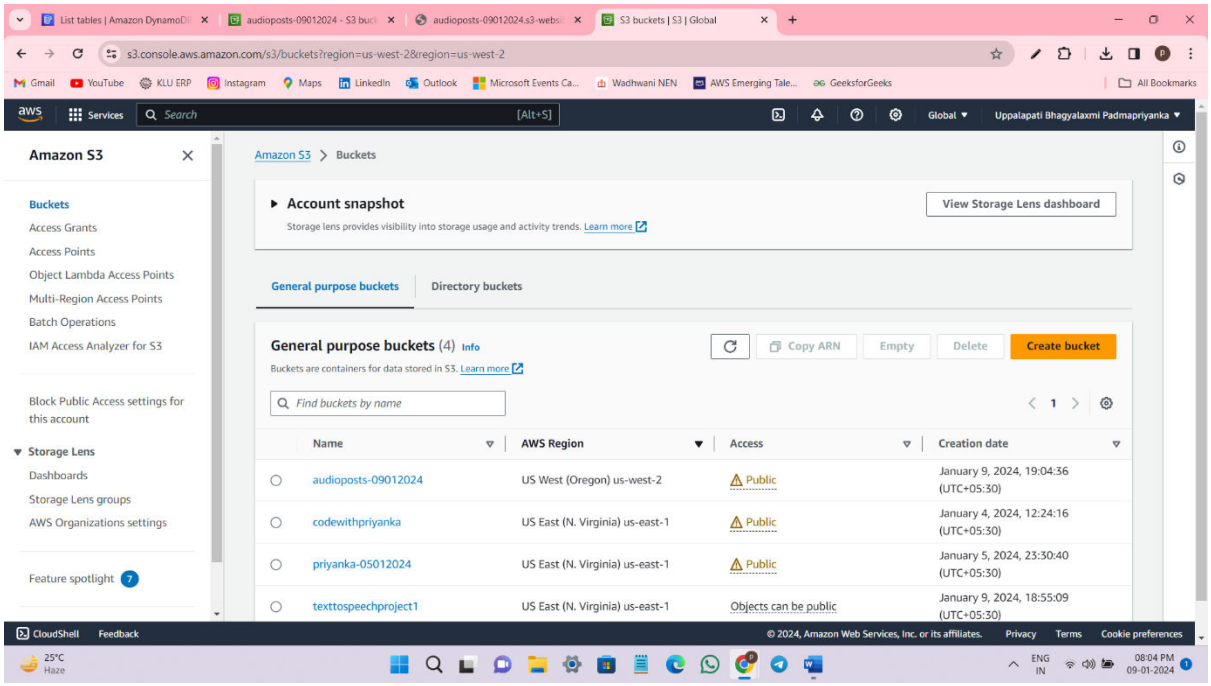
1.Create DynamoDB table

→ Table Name:posts
Primary Key:id
Click on Create Table



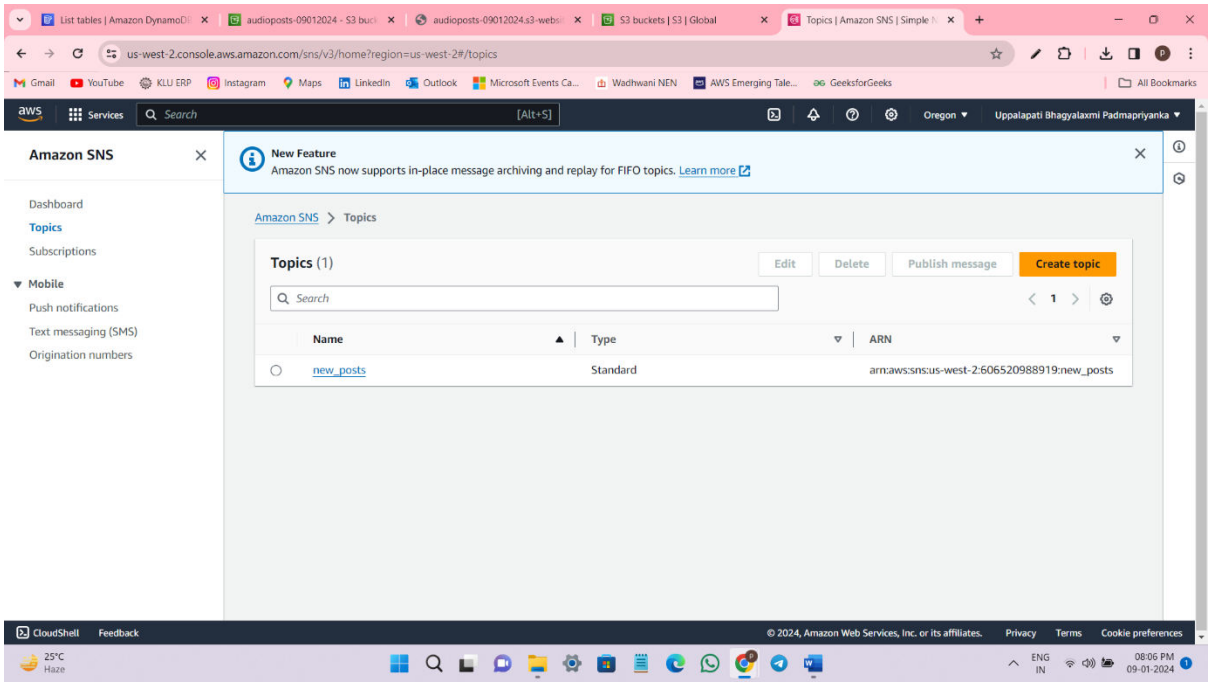
Creating an S3 bucket

Bucket Name:audioposts-09012024
Region:us west-2(Oregon)
Click on Create Bucket

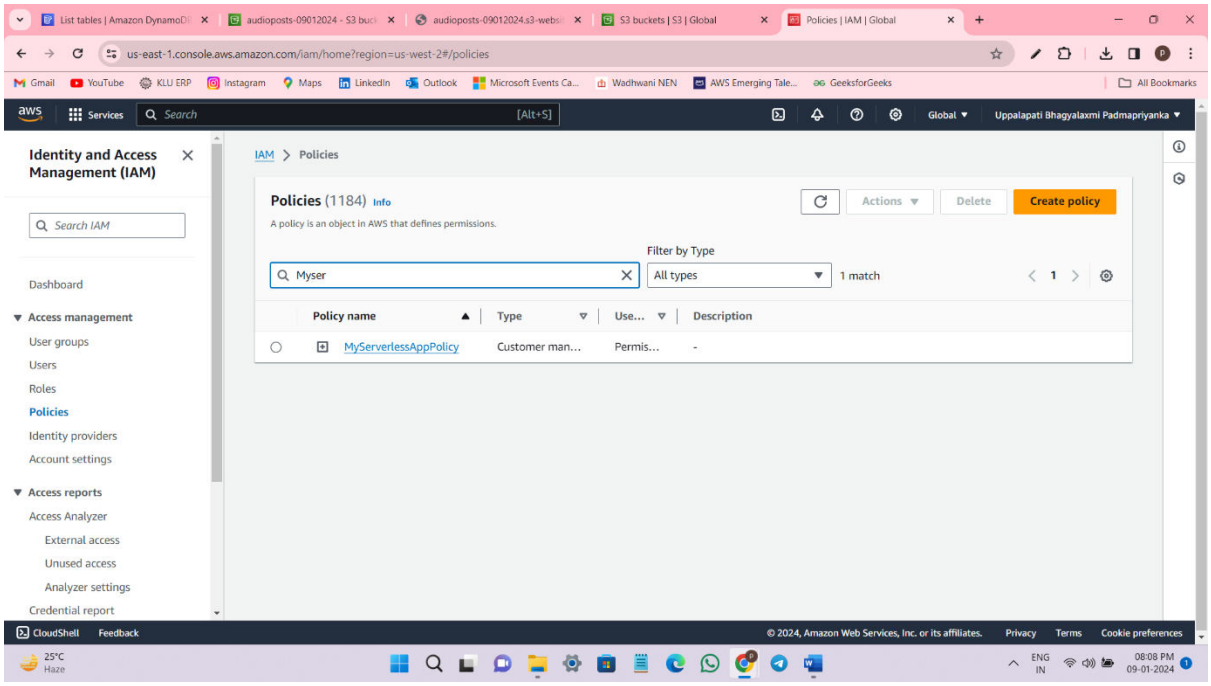


Creating an SNS topic

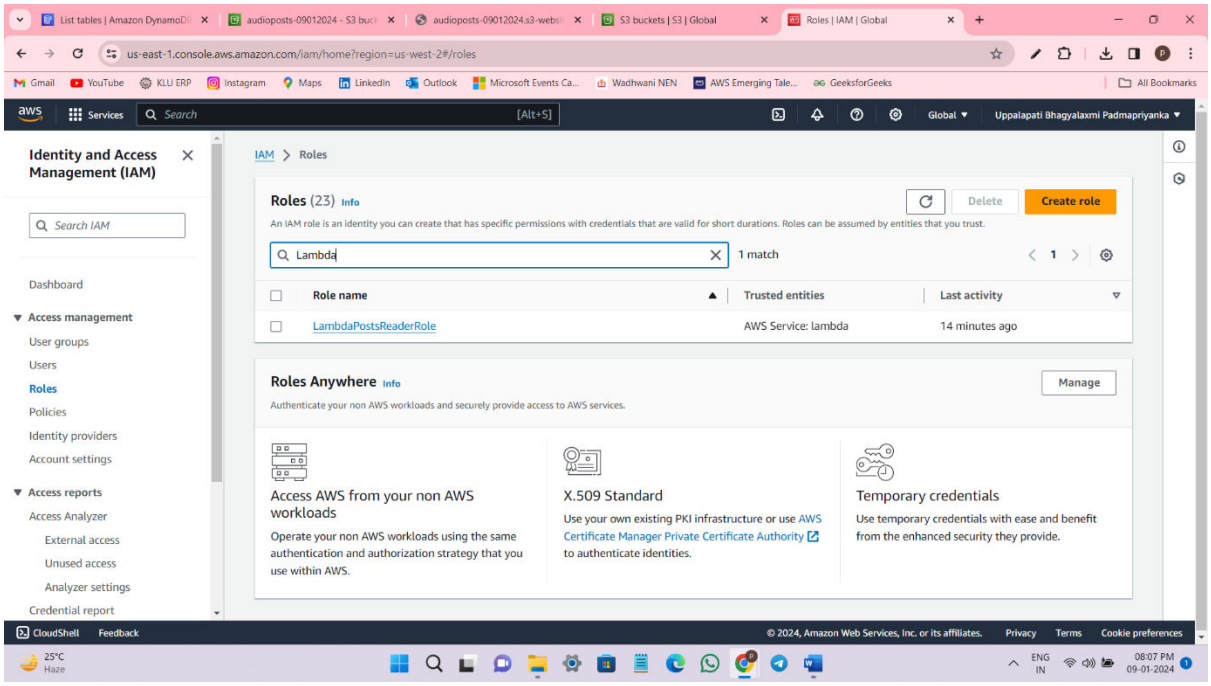
Topic Name:new_posts
Click on Create Topic



Creating an IAM Policy



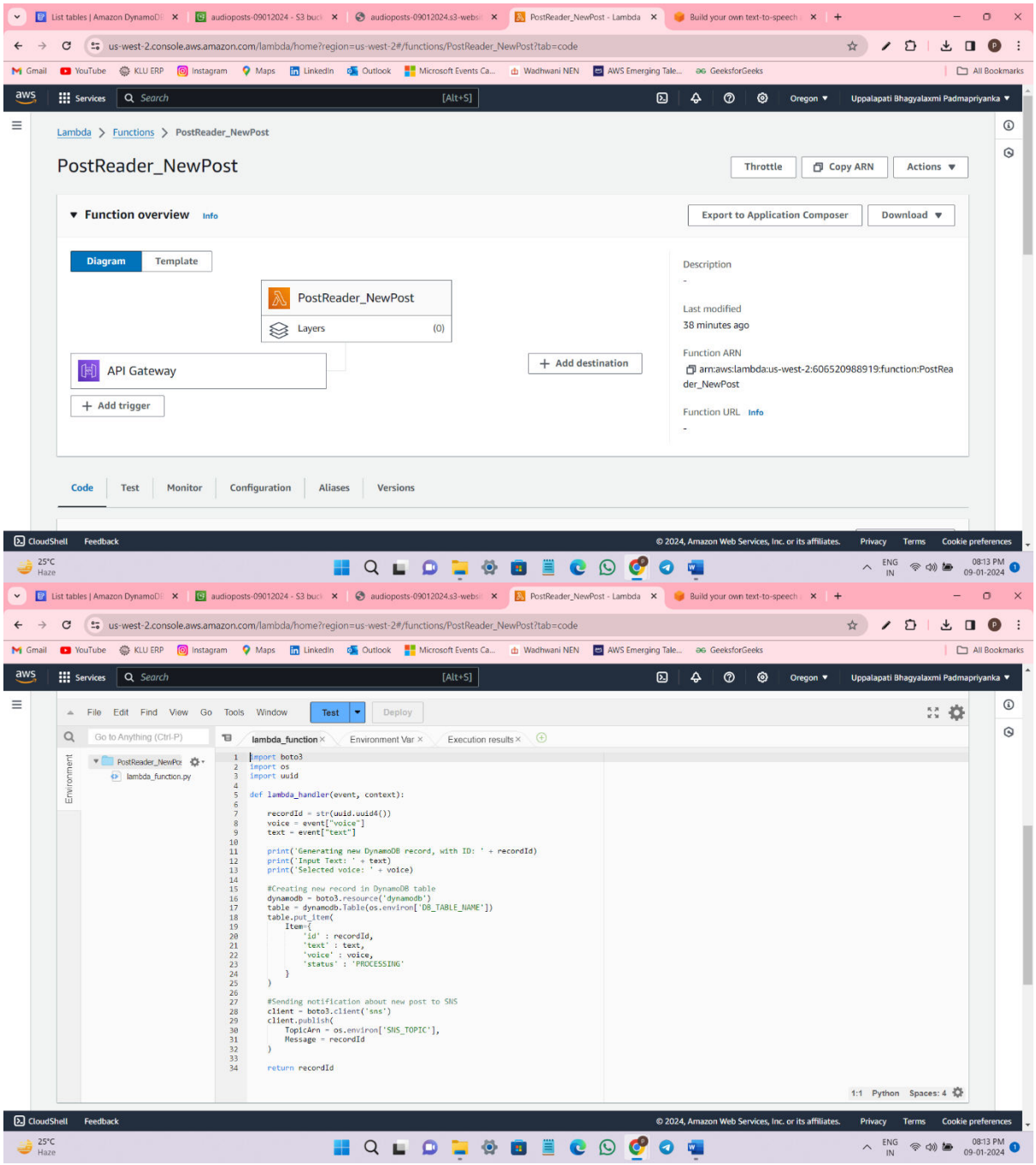
Creating an IAM role



Write the name of the IAM policy you defined in the previous step, MyServerlessAppPolicy, on the Permissions tab after the role has been created. One policy ought to be visible in the list; pick it, then press the Next: Tags button.

Developing the Lambda function for "New Post"

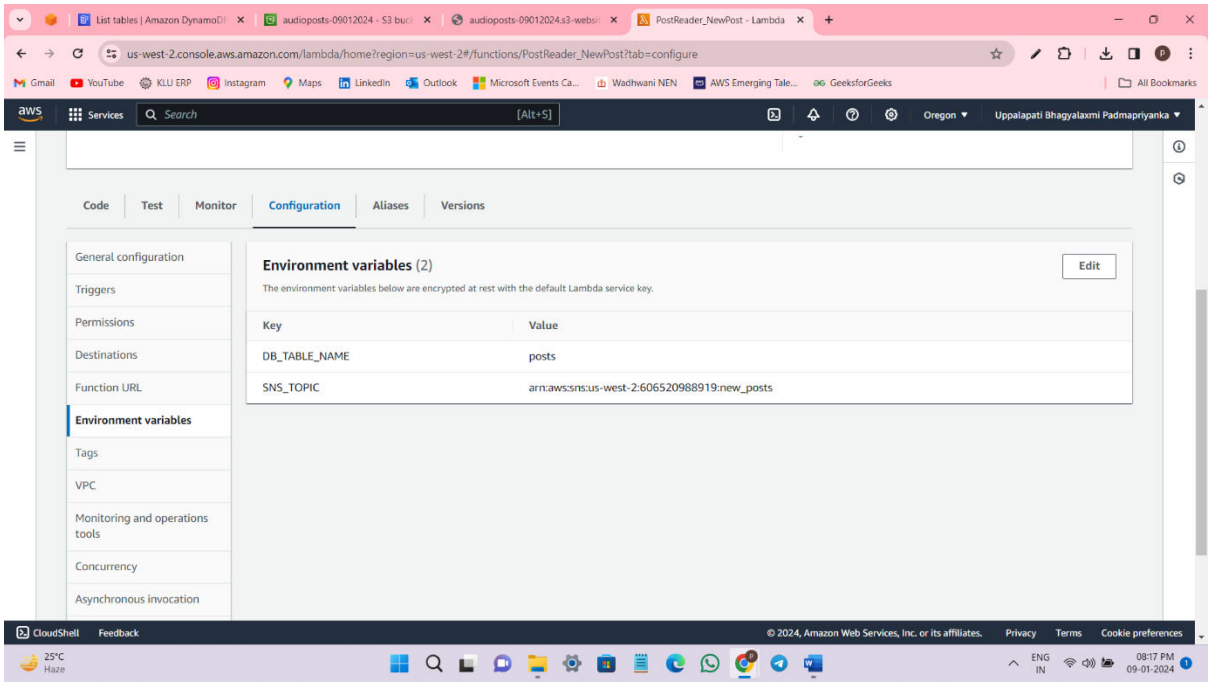
There is a button to create a new Lambda function on the Lambda console. We'll refer to it as PostReader_NewPost. Python 3.7 is our choice for the runtime. We don't currently have any triggers configured.



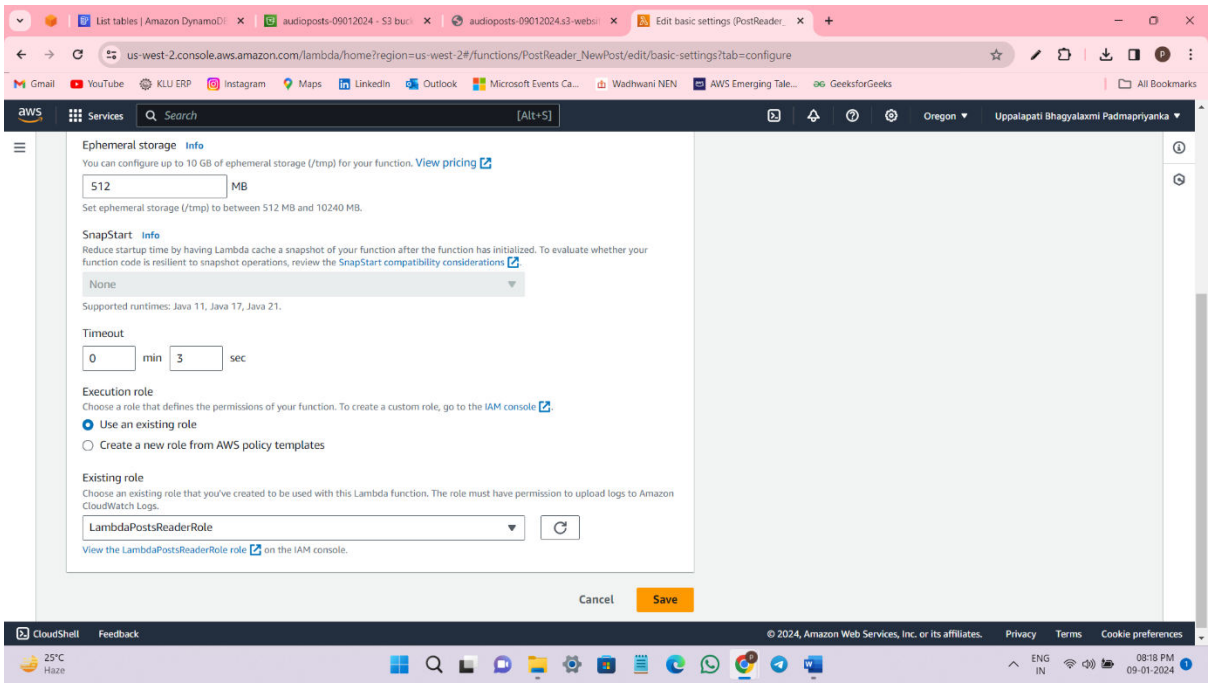
Go to Configuration tab then to go Environment Variables to add

SNS_TOPIC - The Amazon Resource Name (ARN) for the SNS subject we generated is SNS_TOPIC.

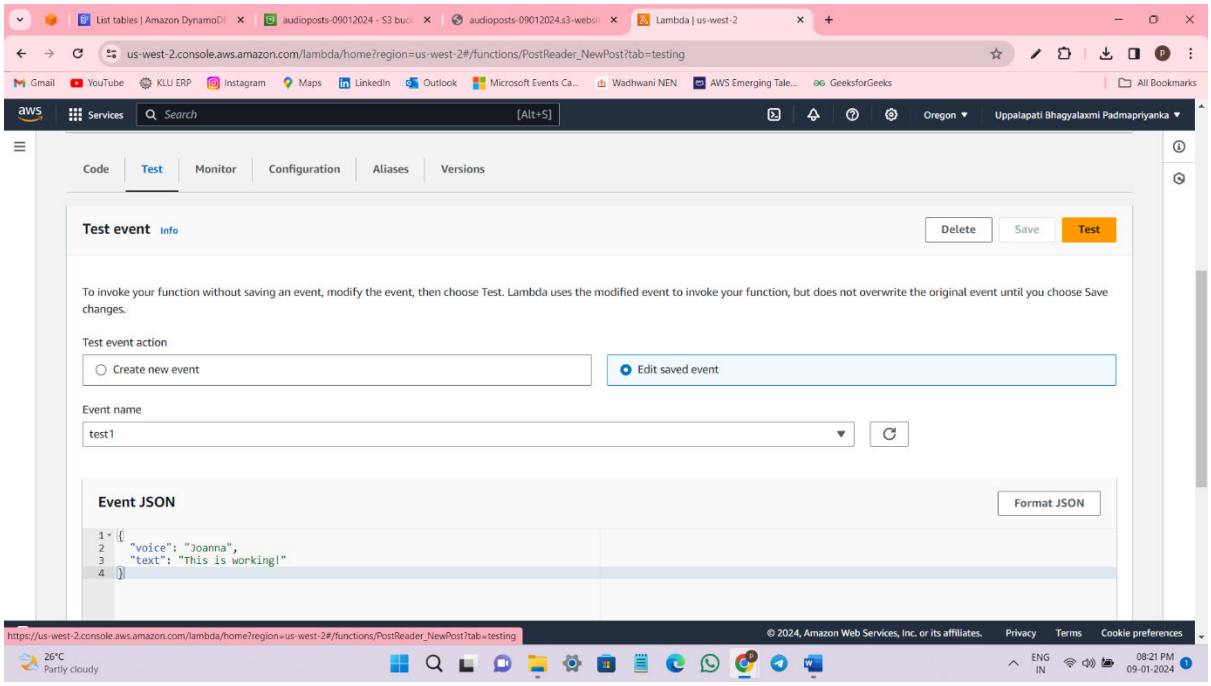
DB_TABLE_NAME -the name of the DynamoDB table.



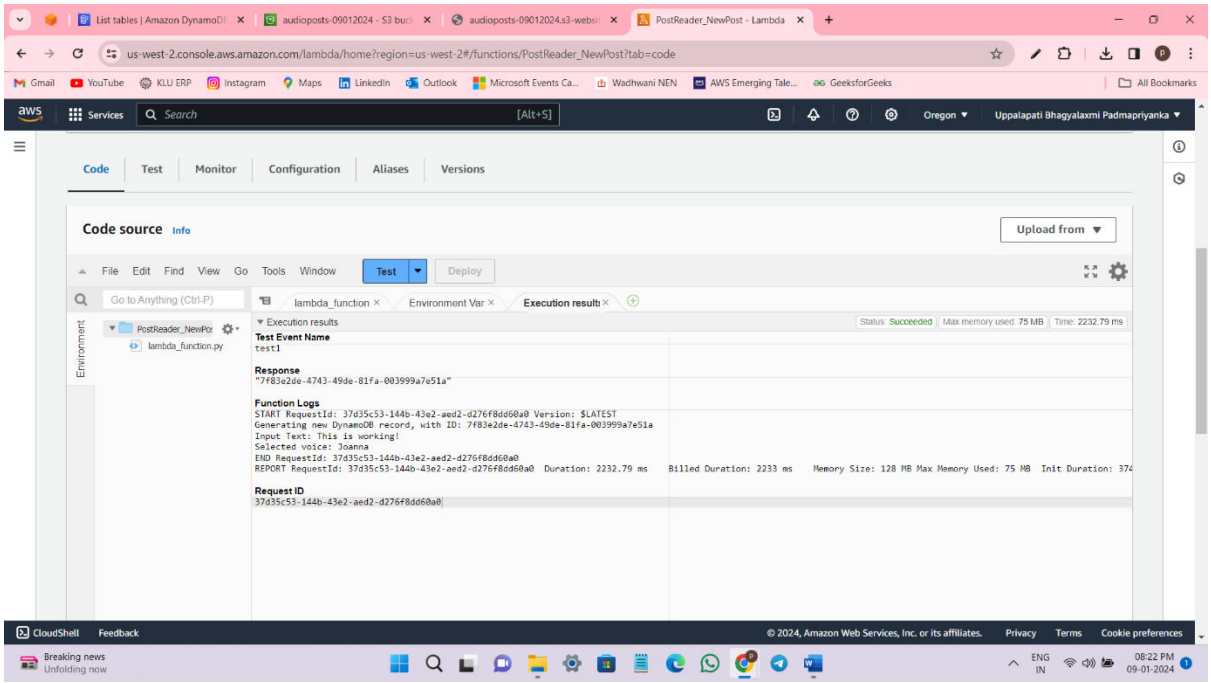
After that go to Permisssions tab and click on Edit button which is at right corner.



Go to test add some code.

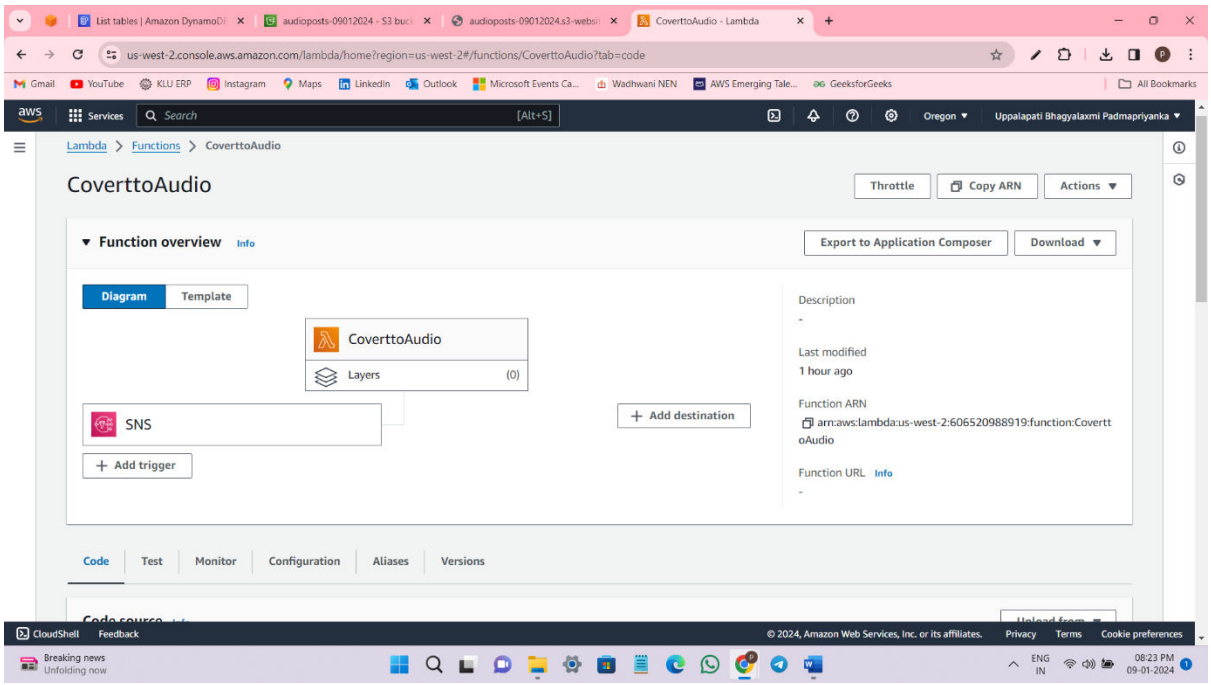


Then deploy the code and test it.



Developing the Lambda function "Convert to Audio"

There is a button to create a new Lambda function on the Lambda console. We'll refer to it as PostReader_NewPost. Python 3.7 is our choice for the runtime. We don't currently have any triggers configured

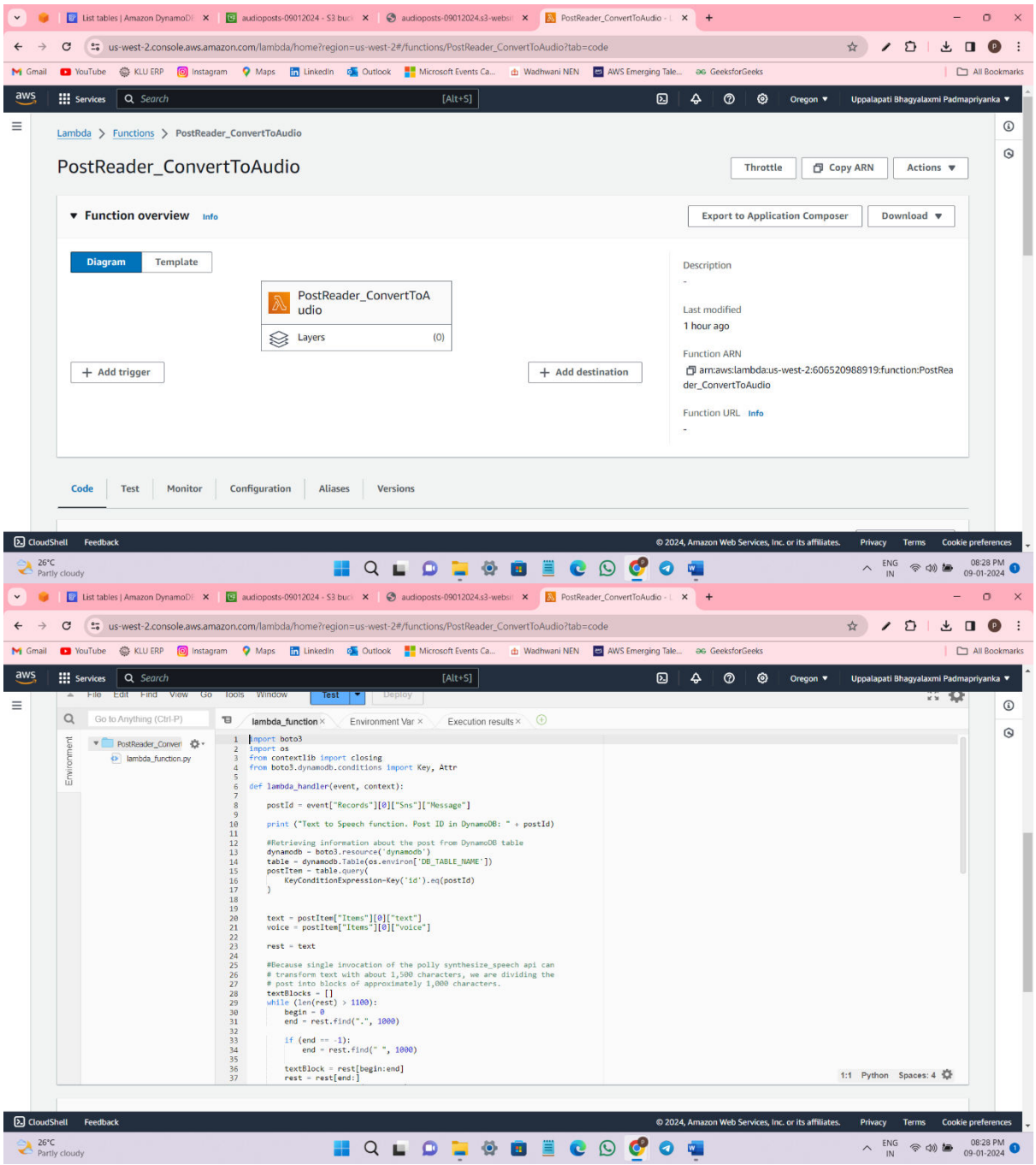


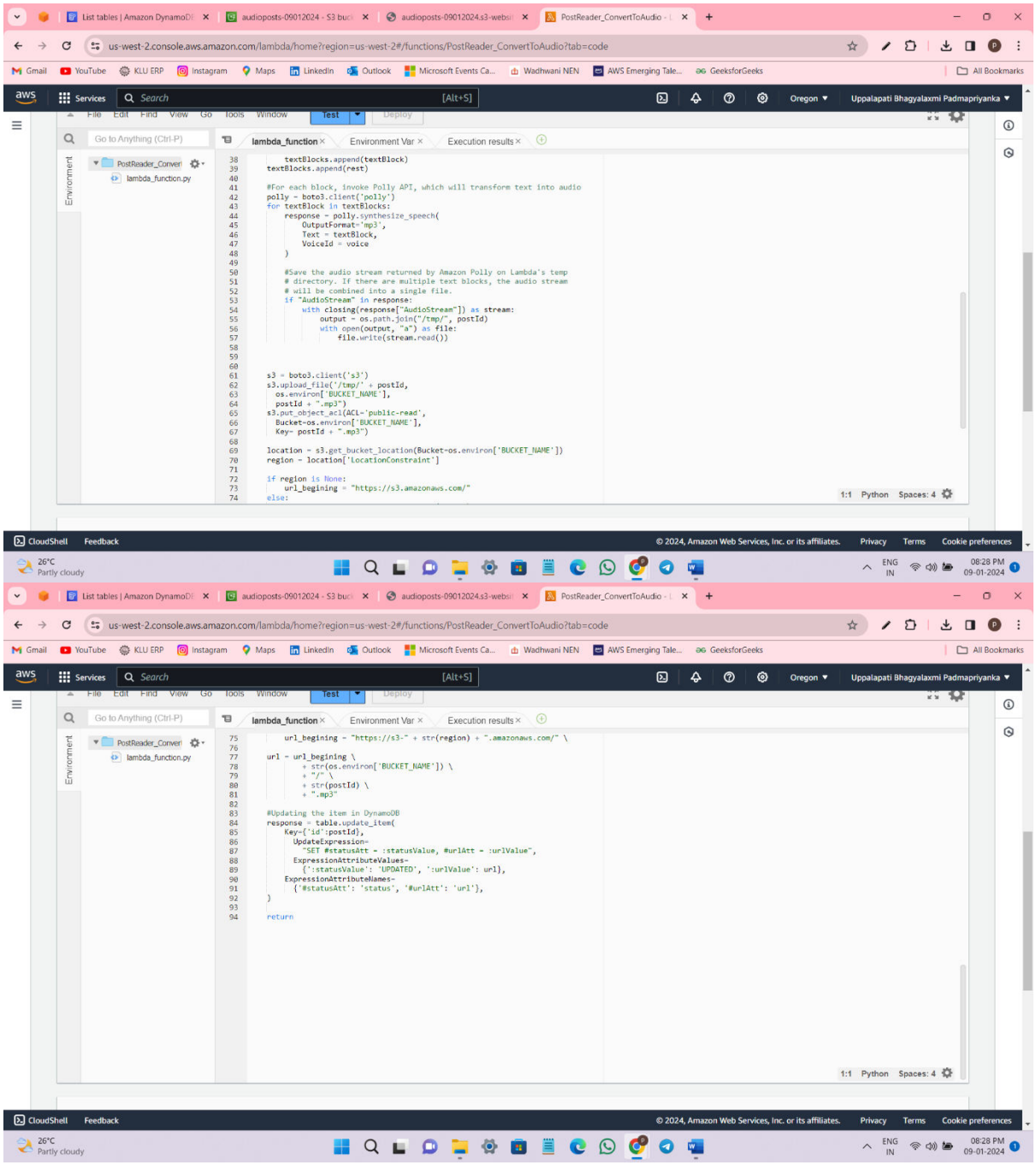
After creating the function go to configuration tab and then go to triggers tab add a SNS trigger.

Add SNS_TOPIC name as :new_posts

Establishing the Lambda function "PostReader_ConvertToAudio"

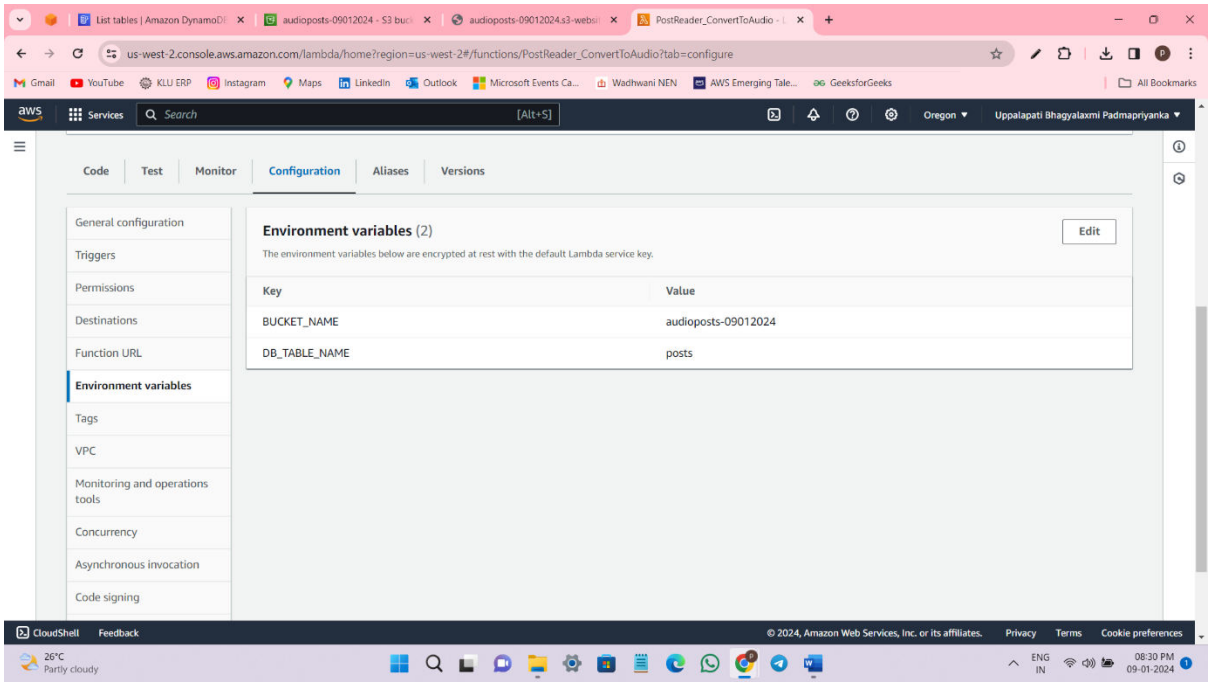
There is a button to create a new Lambda function on the Lambda console. We'll refer to it as PostReader_NewPost. Python 3.7 is our choice for the runtime. We don't currently have any triggers configured





Go to Configuration tab then to go Environment Variables to add

- **DB_TABLE_NAME – The name of the DynamoDB table (in our case, it's posts)**
- **BUCKET_NAME – The name of the S3 bucket that we created to store MP3 files**

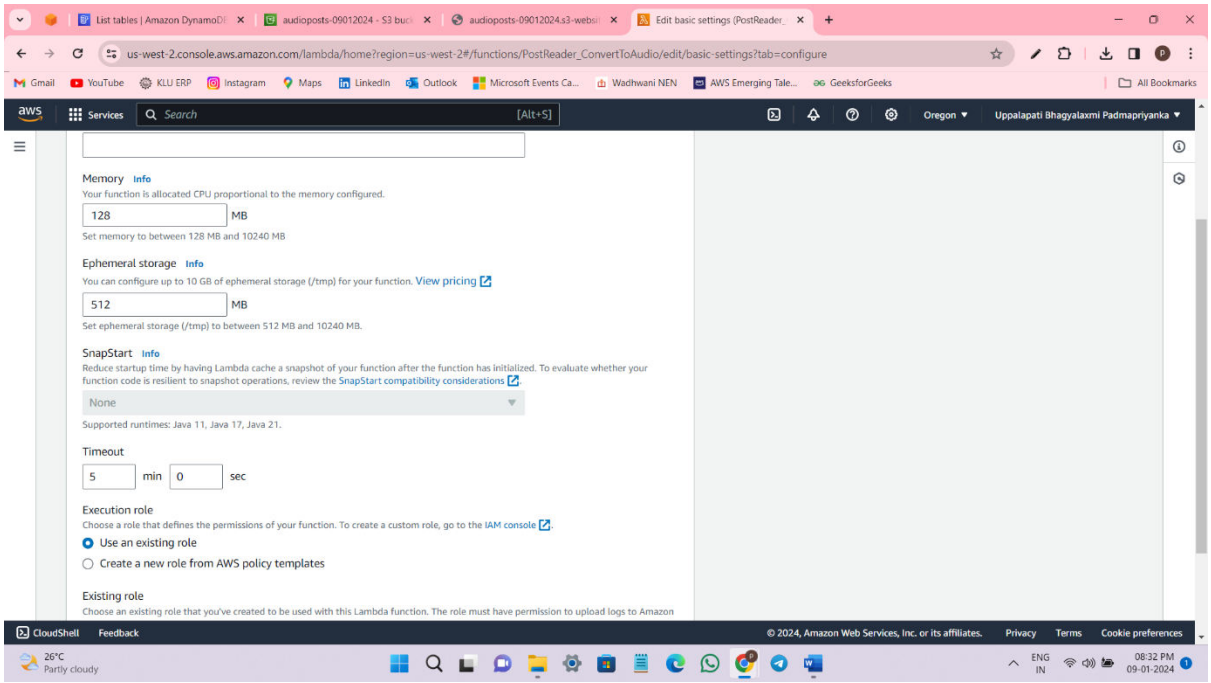


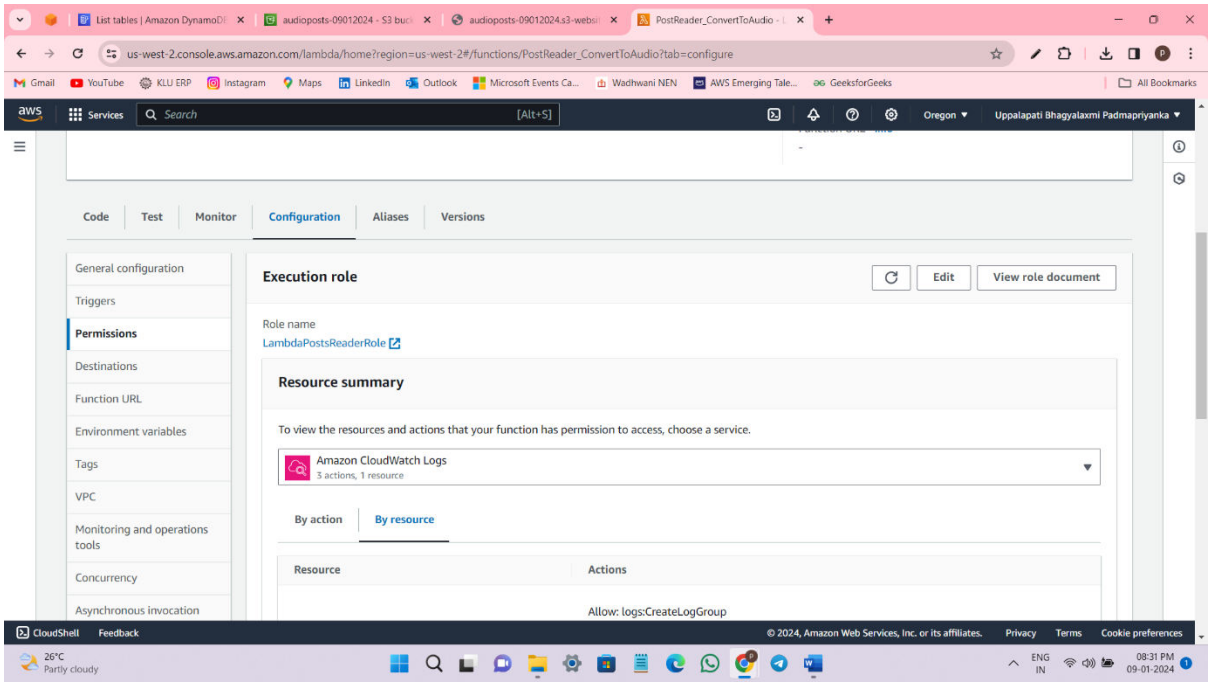
After that go to Permisssions tab and click on Edit button which is at right corner.

Change Timeout to 5 Min 0 sec.

Choose a existing role.

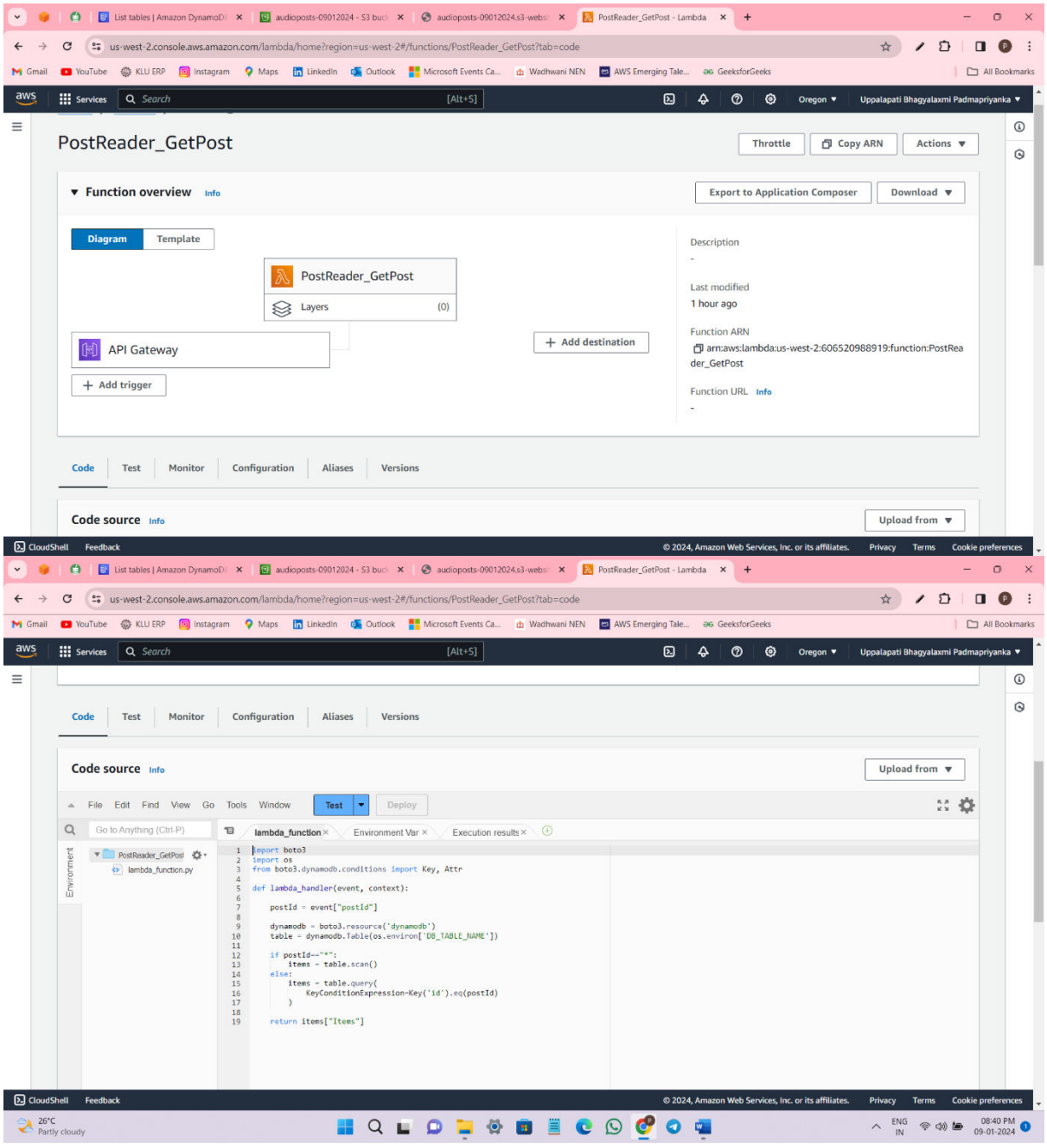
LambdaPosterReaderRole

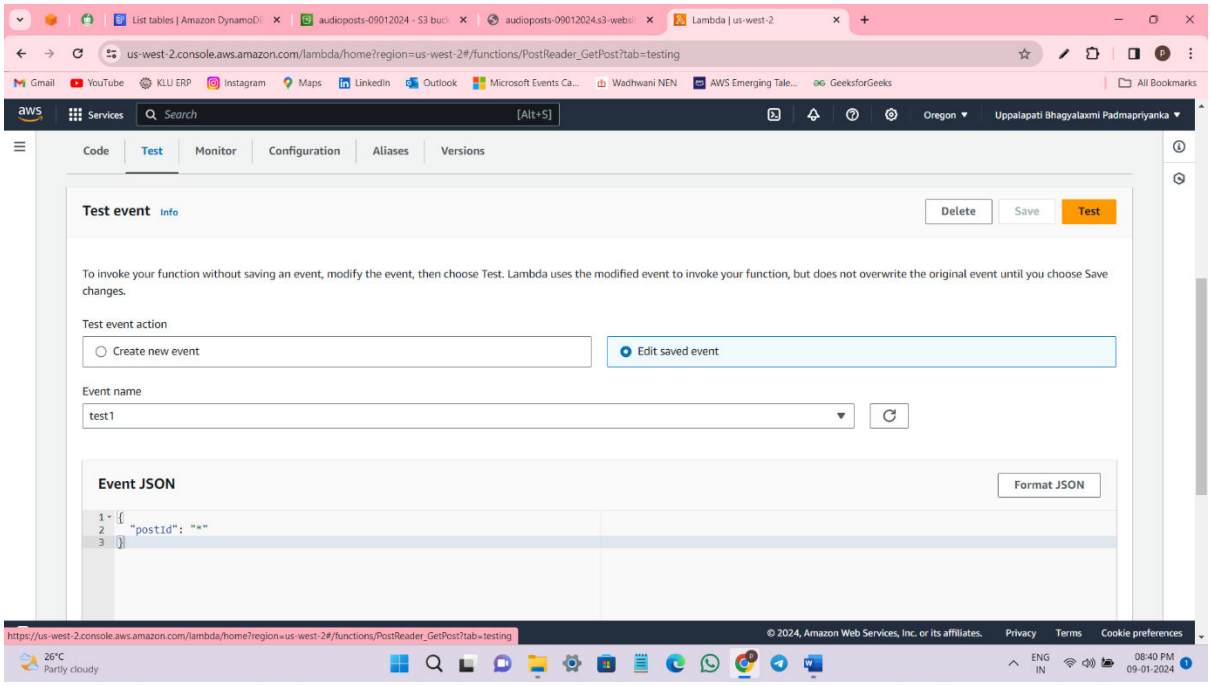


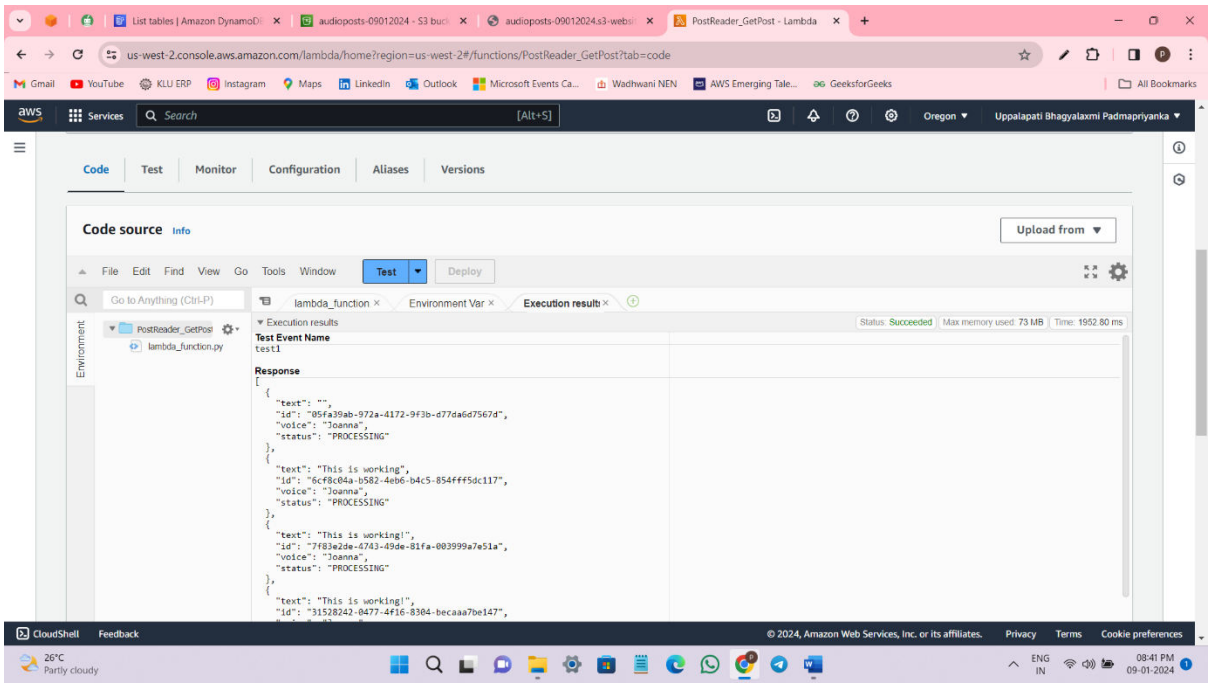


Establishing a Lambda function for "Get Post"

The third Lambda function offers a way to get post-specific data out of our database. To construct a new function, use the Lambda console. This function will be known as PostReader_GetPost. The runtime will be Python 2.7 as before, but no triggers will be specified.

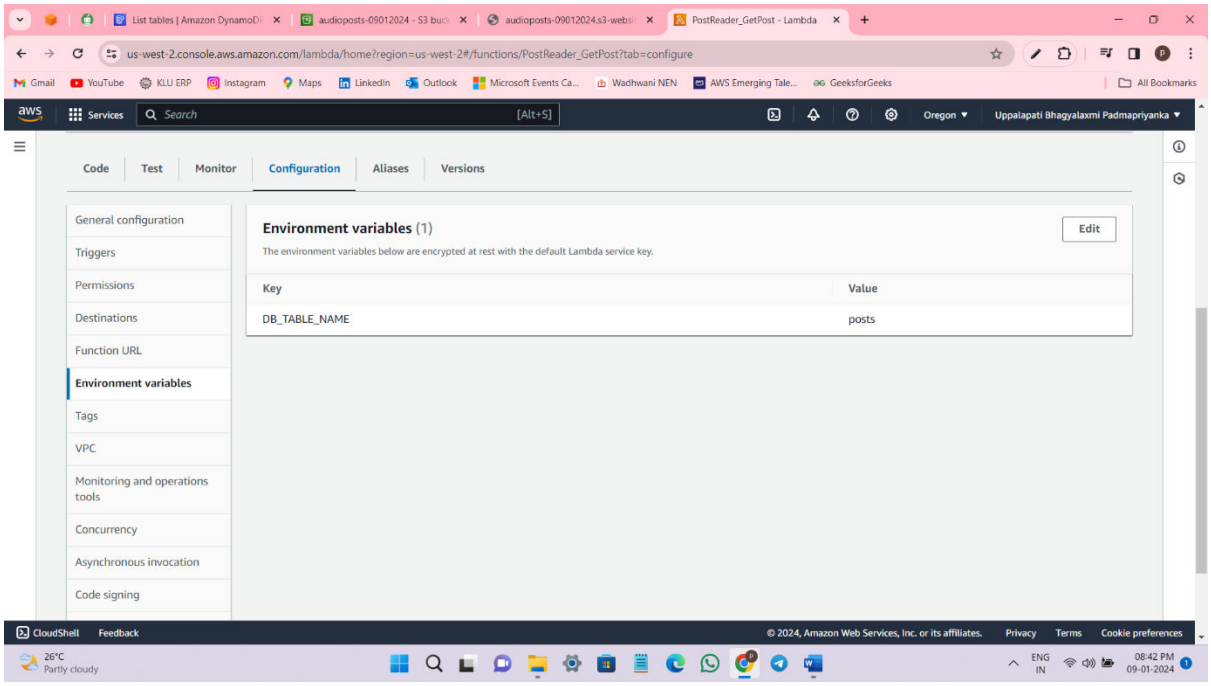

PostReader_GetPost
Throttle
Copy ARN
Actions
Function overview
Info
Export to Application Composer
Download
Diagram
Template
PostReader_GetPost
Layers
(0)
API Gateway
Add trigger
Add destination
Description
-
Last modified
1 hour ago
Function ARN
arn:aws:lambda:us-west-2:606520988919:function:PostReader_GetPost
Function URL
Info
-
Code
Test
Monitor
Configuration
Aliases
Versions
Code source
Info
Upload from
File
Edit
Find
View
Go
Tools
Window
Test
Deploy
lambda_function
Environment Var
Execution results
PostReader_GetPost
lambda_function.py
import boto3
import os
from boto3.dynamodb.conditions import Key, Attr
def lambda_handler(event, context):
postId = event["postId"]
dynamodb = boto3.resource('dynamodb')
table = dynamodb.Table(os.environ['DB_TABLE_NAME'])
if postId=="*":
items = table.scan()
else:
items = table.query(
KeyConditionExpression=Key('id').eq(postId)
)
return items["Items"]
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences





Go to Configuration tab then to go Environment Variables to add

- **DB_TABLE_NAME – The name of the DynamoDB table (in our case, it's posts)**

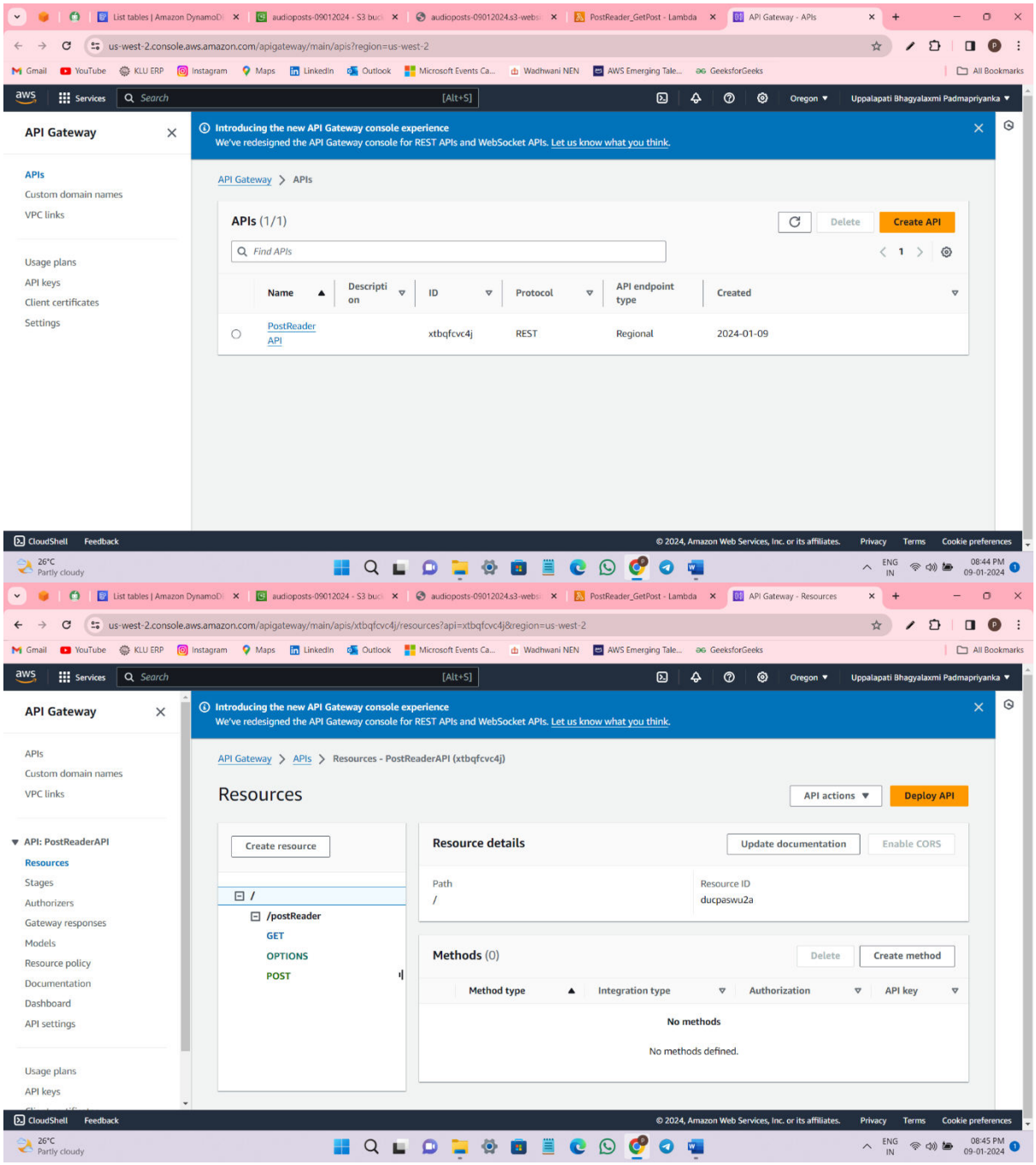


After that go to Permisssions tab and click on Edit button which is at right corner.

Choose a existing role.

LambdaPosterReaderRole

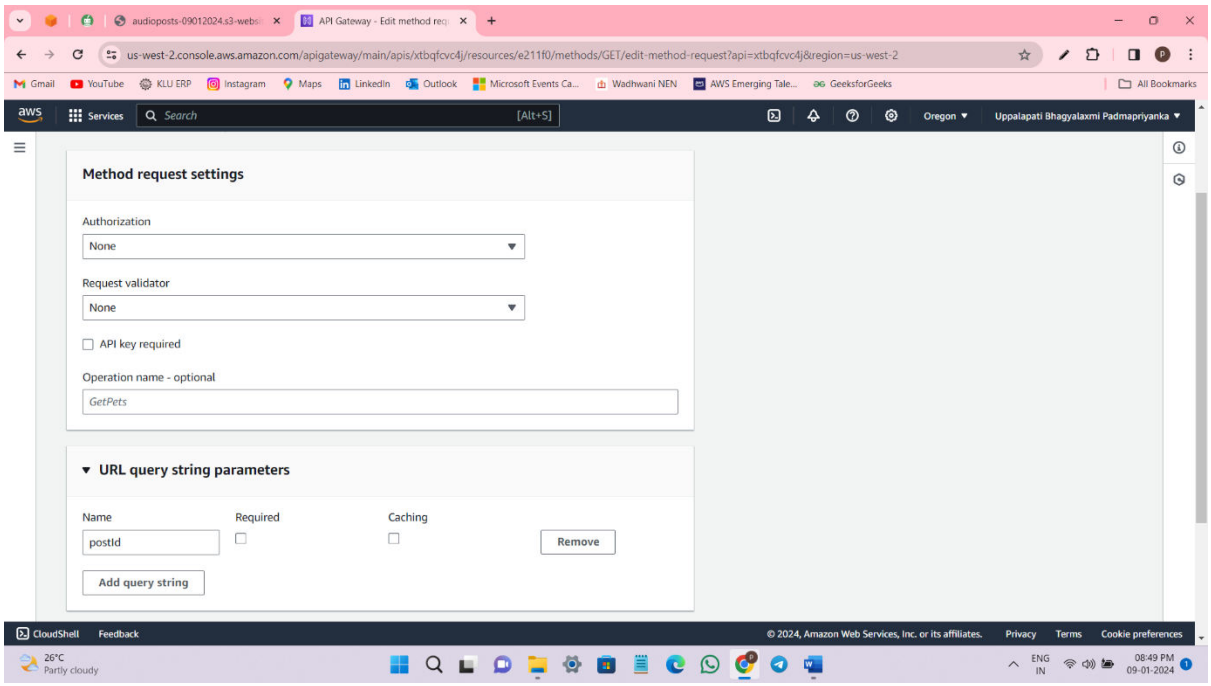
Lambda function exposed as a RESTful web service



We construct two HTTP methods (by selecting Actions and then construct Method) once our API has been built. The PostReader_NewPost Lambda function is called via the POST protocol. Our API calls the PostReader_GetPost Lambda function for the GET method.

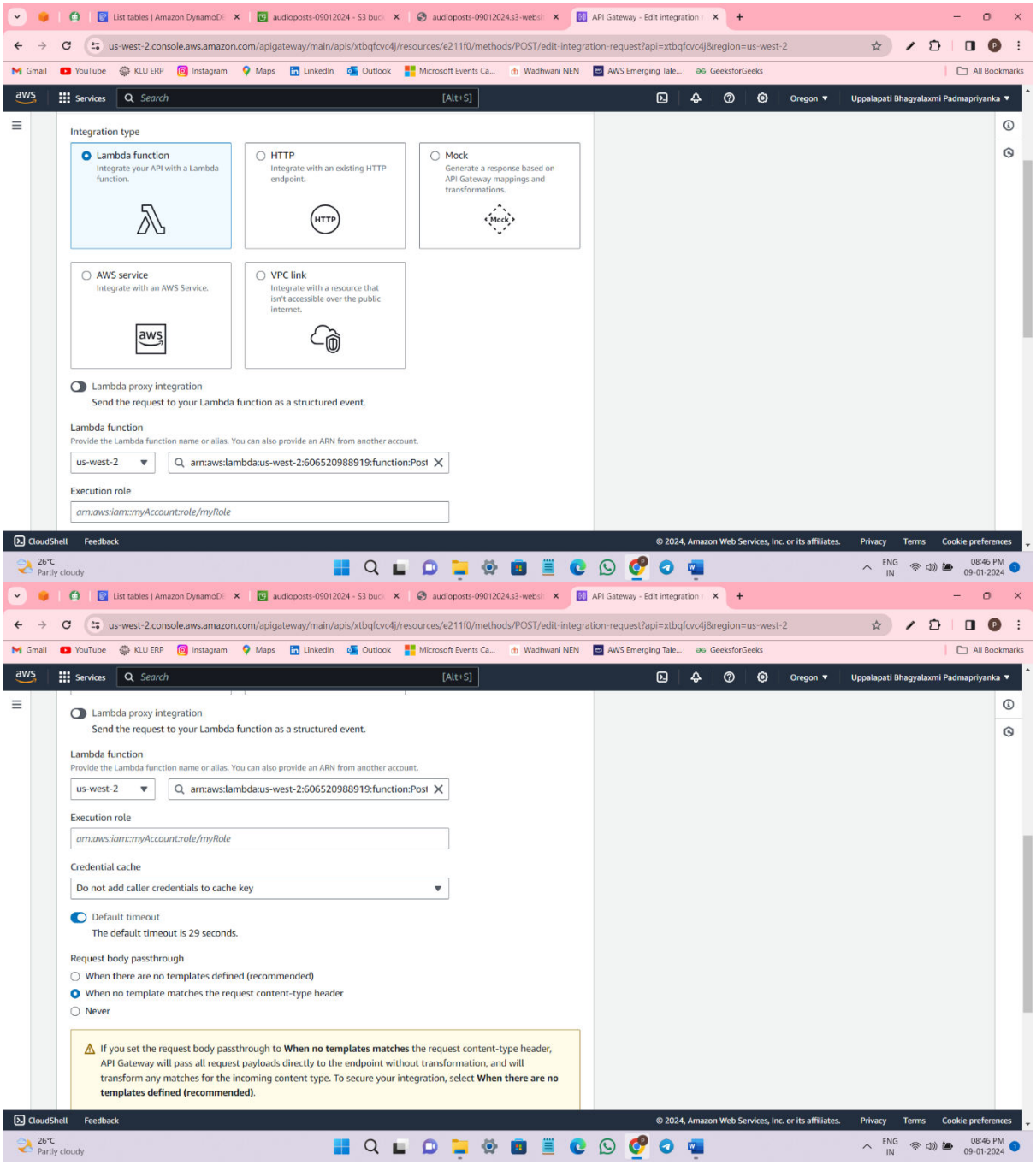
Create the method GET and POST Methds.

After that go to GET method and then click on Method request go to edit button to add URL query string parameters.

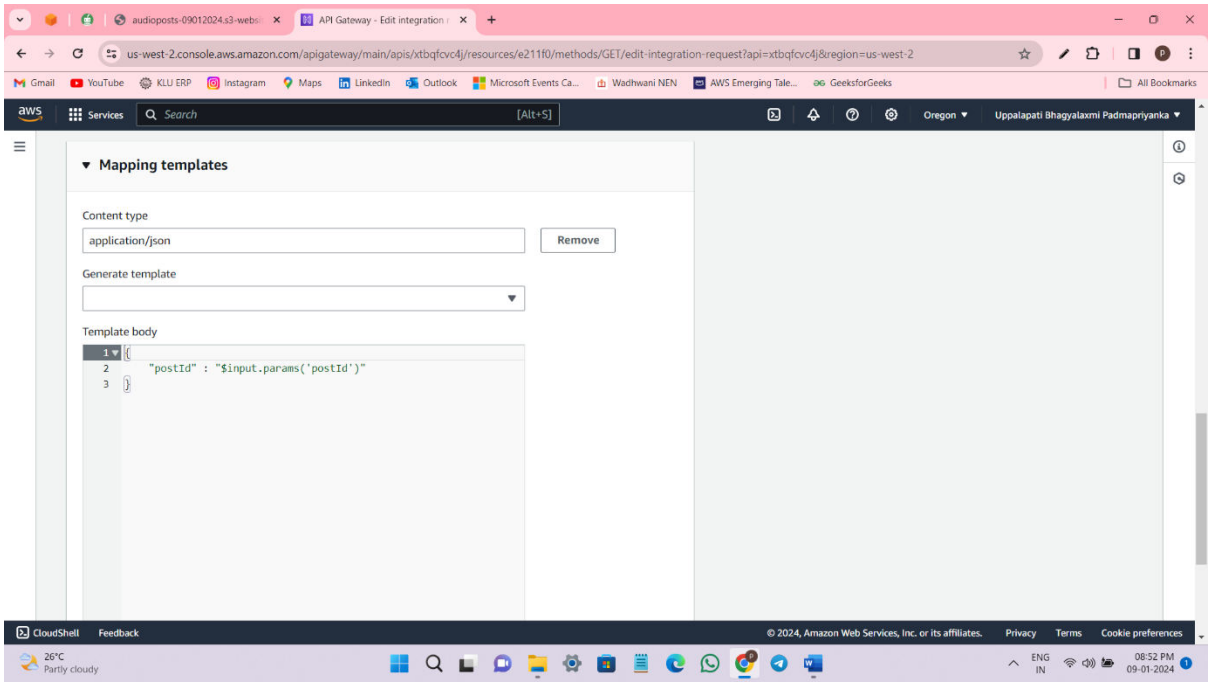


Then click on save.

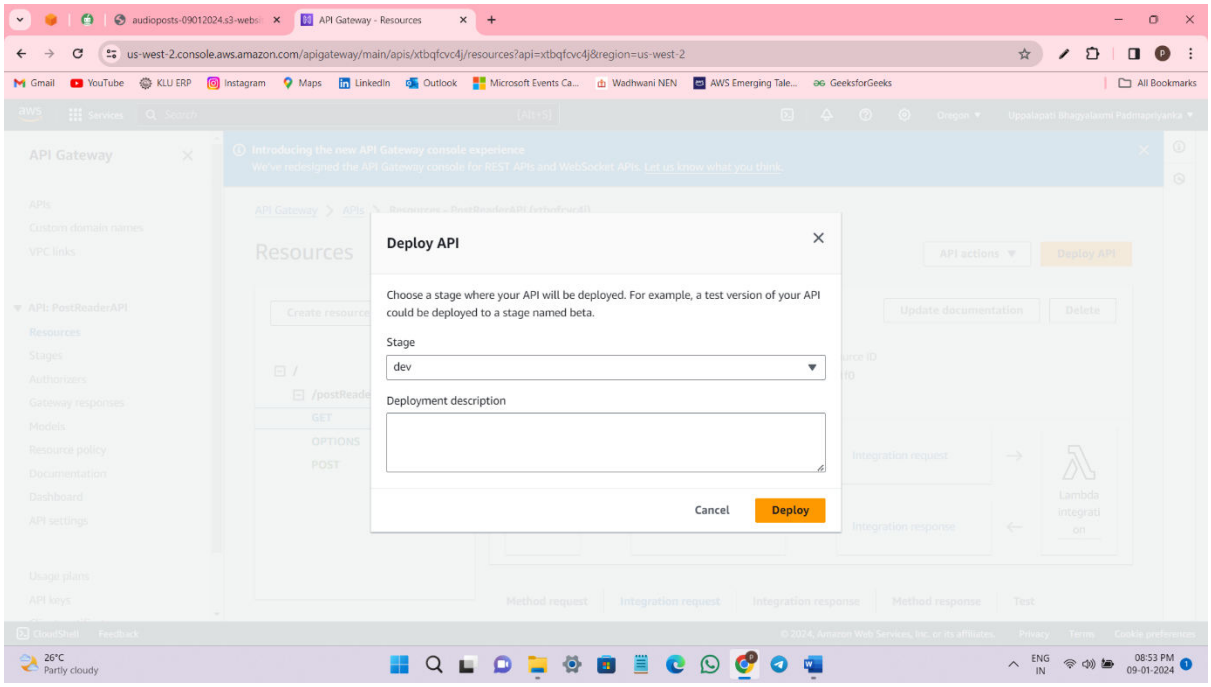
Go to Integration request add mapping template.


List tables | Amazon DynamoDB
audioposts-09012024 - S3 bucket
audioposts-09012024.s3-website
API Gateway - Edit integration
us-west-2.console.aws.amazon.com/apigateway/main/apis/xtbqfcvc4j/resources/e211f0/methods/POST/edit-integration-request?api=xtbqfcvc4j&region=us-west-2
Gmail
YouTube
KLU ERP
Instagram
Maps
LinkedIn
Outlook
Microsoft Events Ca...
Wadhwani NEN
AWS Emerging Tale...
GeeksforGeeks
All Bookmarks
aws
Services
Search
[Alt+S]
Oregon
Uppalapati Bhagyalaxmi Padmapriyanka
Integration type
Lambda function
Integrate your API with a Lambda function.
HTTP
Integrate with an existing HTTP endpoint.
Mock
Generate a response based on API Gateway mappings and transformations.
AWS service
Integrate with an AWS Service.
VPC link
Integrate with a resource that isn't accessible over the public internet.
Lambda proxy integration
Send the request to your Lambda function as a structured event.
Lambda function
Provide the Lambda function name or alias. You can also provide an ARN from another account.
us-west-2
arn:aws:lambda:us-west-2:606520988919:function:Post
Execution role
arn:aws:iam::myAccount:role/myRole
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
26°C
Partly cloudy
ENG
IN
08:46 PM
09-01-2024

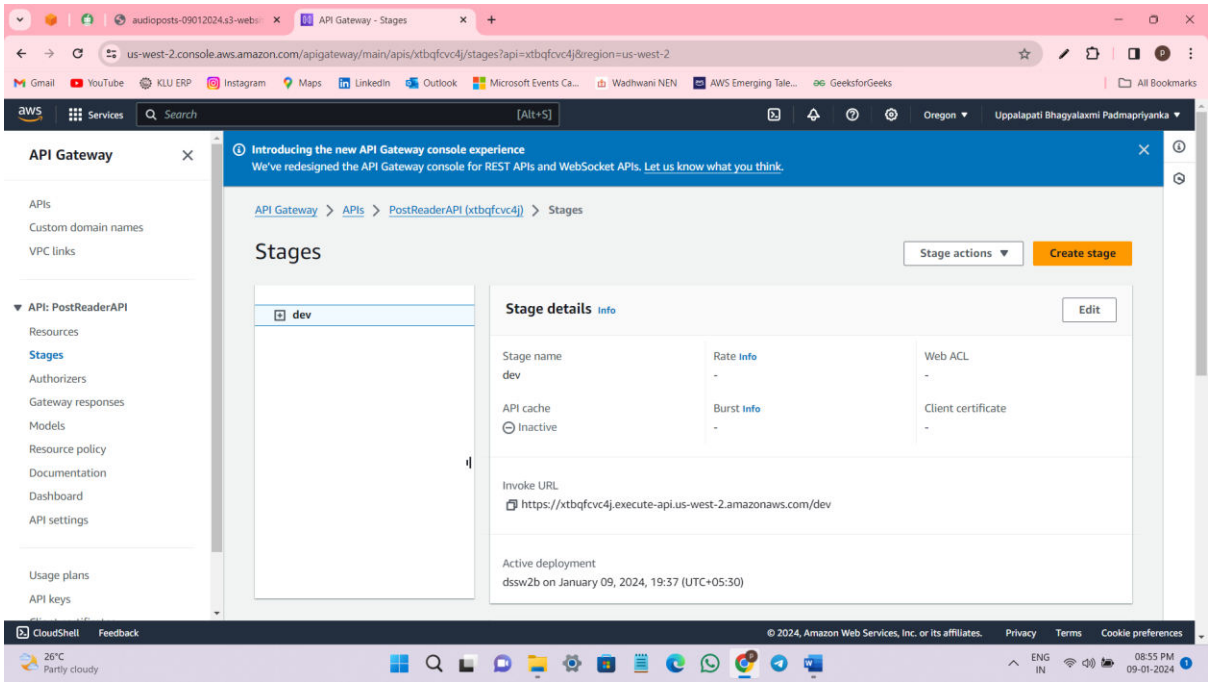
Lambda proxy integration
Send the request to your Lambda function as a structured event.
Lambda function
Provide the Lambda function name or alias. You can also provide an ARN from another account.
us-west-2
arn:aws:lambda:us-west-2:606520988919:function:Post
Execution role
arn:aws:iam::myAccount:role/myRole
Credential cache
Do not add caller credentials to cache key
Default timeout
The default timeout is 29 seconds.
Request body passthrough
When there are no templates defined (recommended)
When no template matches the request content-type header
Never
If you set the request body passthrough to When no templates matches the request content-type header, API Gateway will pass all request payloads directly to the endpoint without transformation, and will transform any matches for the incoming content type. To secure your integration, select When there are no templates defined (recommended).
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences



Then Deploy API.



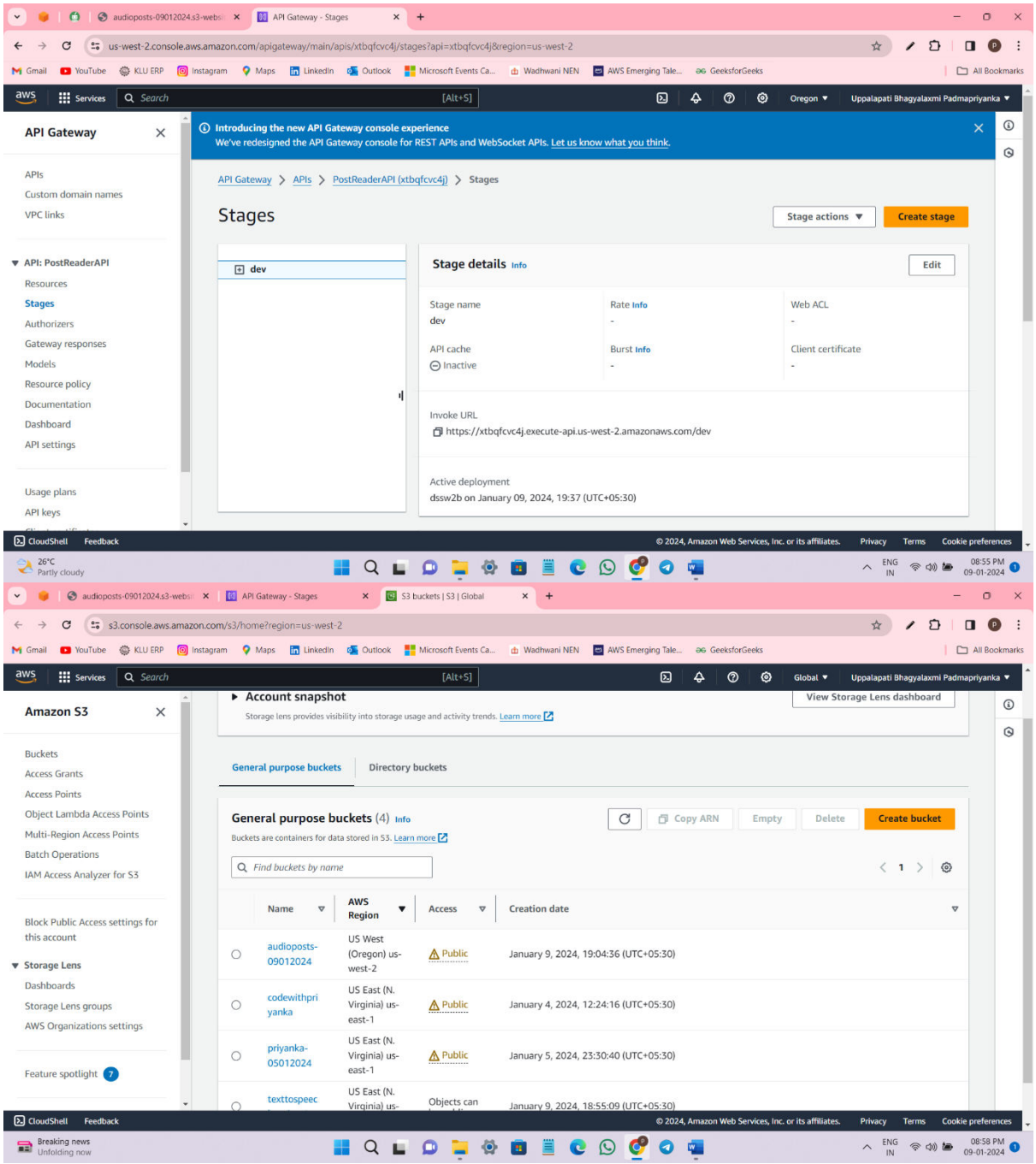
We get an INVOKE URL.

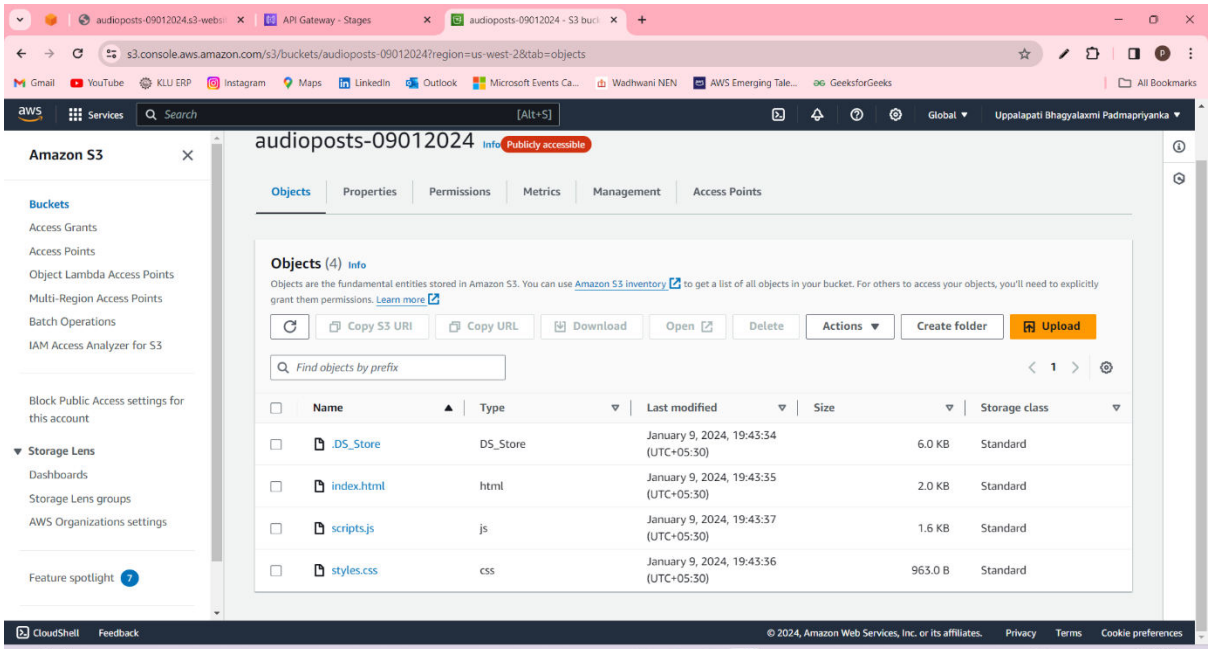

API Gateway - Stages
us-west-2.console.aws.amazon.com/apigateway/main/apis/xtbqfcvc4j/stages?api=xtbqfcvc4j&region=us-west-2
Services
Search
[Alt+S]
Oregon
Uppalapati Bhagyalaxmi Padmapriyanka
API Gateway
APIs
Custom domain names
VPC links
API: PostReaderAPI
Resources
Stages
Authorizers
Gateway responses
Models
Resource policy
Documentation
Dashboard
API settings
Usage plans
API keys
Introducing the new API Gateway console experience
We've redesigned the API Gateway console for REST APIs and WebSocket APIs. Let us know what you think.
API Gateway > APIs > PostReaderAPI (xtbqfcvc4j) > Stages
Stages
Stage actions
Create stage
dev
Stage details Info
Edit
Stage name
dev
Rate Info
-
Web ACL
-
API cache
Inactive
Burst Info
-
Client certificate
-
Invoke URL
https://xtbqfcvc4j.execute-api.us-west-2.amazonaws.com/dev
Active deployment
dssw2b on January 09, 2024, 19:37 (UTC+05:30)
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
26°C
Partly cloudy
ENG
IN
08:55 PM
09-01-2024

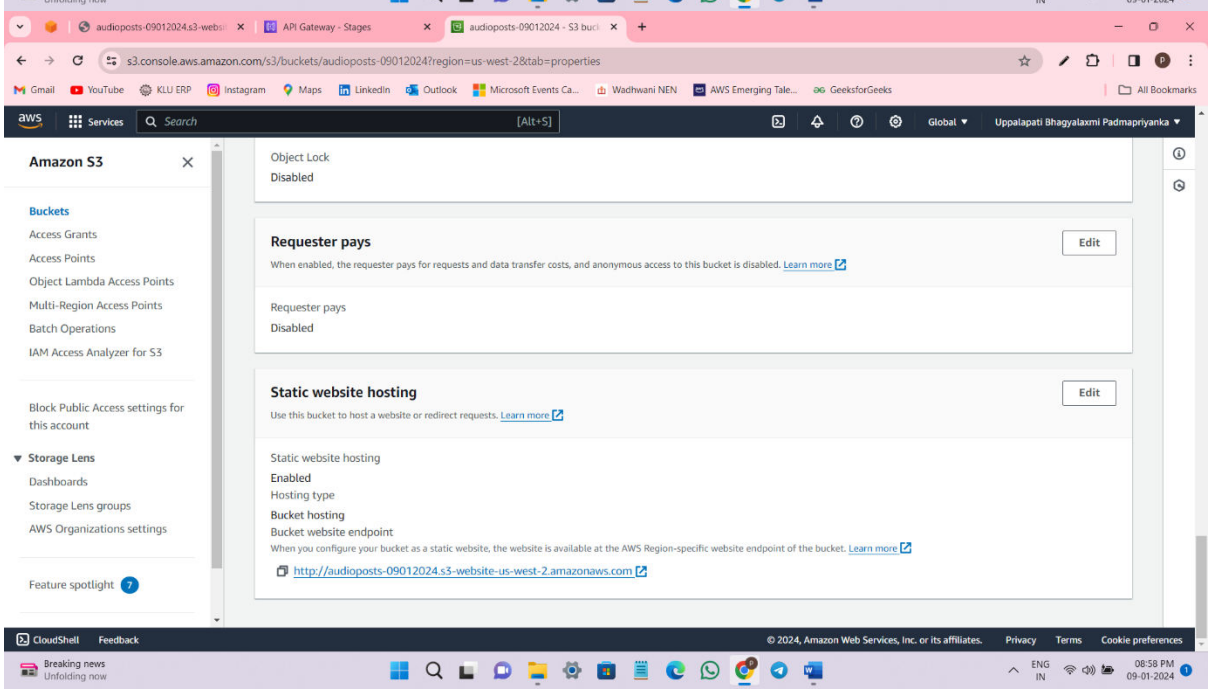
Lets test a application.

Making a UI that is serverless

Our program is available as a RESTful web service even though it is fully functional. As a result, we must ensure that everything is operating as it should. Let's set up a little website on Amazon S3, a fantastic option for hosting static webpages. This webpage connects to our API using JavaScript, enabling all of our text-to-speech features within a WWW page.




audioposts-09012024.s3-websi
API Gateway - Stages
audioposts-09012024 - S3 buck
s3.console.aws.amazon.com/s3/buckets/audioposts-09012024?region=us-west-2&tab=objects
Gmail
YouTube
KLU ERP
Instagram
Maps
LinkedIn
Outlook
Microsoft Events Ca...
Wadhwani NEN
AWS Emerging Tale...
GeeksforGeeks
All Bookmarks
aws
Services
Search
[Alt+S]
Global
Uppalapati Bhagyalaxmi Padmapriyanka
Amazon S3
Buckets
Access Grants
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
Storage Lens groups
AWS Organizations settings
Feature spotlight
7
audioposts-09012024
Info
Publicly accessible
Objects
Properties
Permissions
Metrics
Management
Access Points
Objects (4) Info
Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload
Find objects by prefix
1
Name
Type
Last modified
Size
Storage class
.DS_Store
DS_Store
January 9, 2024, 19:43:34 (UTC+05:30)
6.0 KB
Standard
index.html
html
January 9, 2024, 19:43:35 (UTC+05:30)
2.0 KB
Standard
scripts.js
js
January 9, 2024, 19:43:37 (UTC+05:30)
1.6 KB
Standard
styles.css
css
January 9, 2024, 19:43:36 (UTC+05:30)
963.0 B
Standard
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
Breaking news
Unfolding now
ENG
IN
08:58 PM
09-01-2024


audioposts-09012024.s3-websi
API Gateway - Stages
audioposts-09012024 - S3 buck
s3.console.aws.amazon.com/s3/buckets/audioposts-09012024?region=us-west-2&tab=properties
Gmail
YouTube
KLU ERP
Instagram
Maps
LinkedIn
Outlook
Microsoft Events Ca...
Wadhwani NEN
AWS Emerging Tale...
GeeksforGeeks
All Bookmarks
aws
Services
Search
[Alt+S]
Global
Uppalapati Bhagyalaxmi Padmapriyanka
Amazon S3
Buckets
Access Grants
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
Storage Lens groups
AWS Organizations settings
Feature spotlight
7
Object Lock
Disabled
Requester pays
Edit
When enabled, the requester pays for requests and data transfer costs, and anonymous access to this bucket is disabled. Learn more
Requester pays
Disabled
Static website hosting
Edit
Use this bucket to host a website or redirect requests. Learn more
Static website hosting
Enabled
Hosting type
Bucket hosting
Bucket website endpoint
When you configure your bucket as a static website, the website is available at the AWS Region-specific website endpoint of the bucket. Learn more
http://audioposts-09012024.s3-website-us-west-2.amazonaws.com
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Breaking news
Unfolding now
ENG
IN
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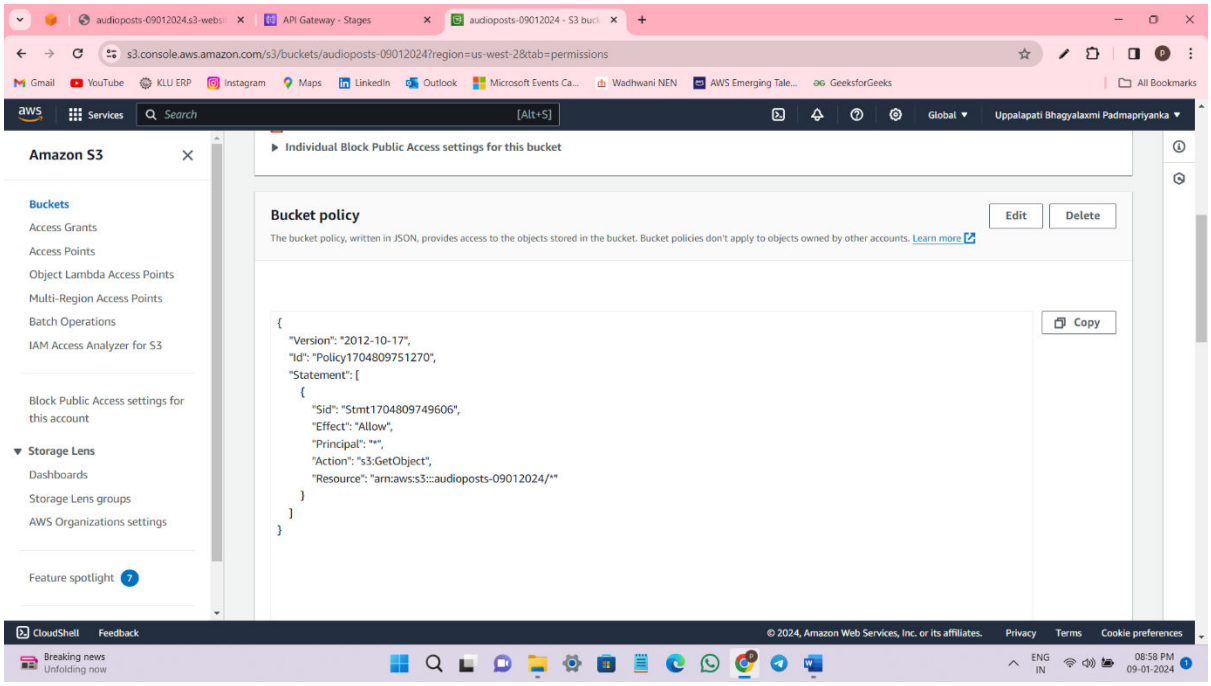
09-01-2024


Amazon S3
Buckets
Access Grants
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
Storage Lens groups
AWS Organizations settings
Feature spotlight
Individual Block Public Access settings for this bucket
Bucket policy
The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. Learn more
Edit
Delete
Copy
{
"Version": "2012-10-17",
"Id": "Policy1704809751270",
"Statement": [
{
"Sid": "Stmt1704809749606",
"Effect": "Allow",
"Principal": "*",
"Action": "s3:GetObject",
"Resource": "arn:aws:s3:::audioposts-09012024/*"
}
]
}
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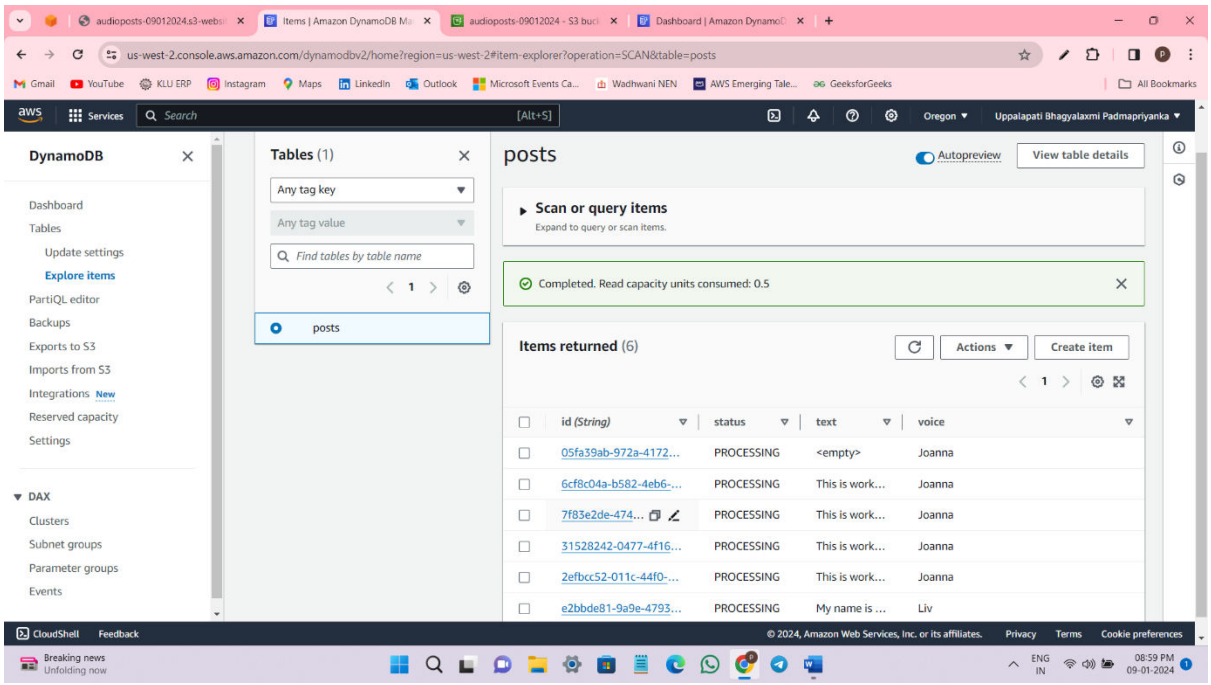
OUTPUT:


DynamoDB
Dashboard
Tables
Update settings
Explore items
PartiQL editor
Backups
Exports to S3
Imports from S3
Integrations New
Reserved capacity
Settings
DAX
Clusters
Subnet groups
Parameter groups
Events
Tables (1)
Any tag key
Any tag value
Find tables by table name
posts
posts
Autopreview
View table details
Scan or query items
Expand to query or scan items.
Completed. Read capacity units consumed: 0.5
Items returned (6)
Actions
Create item
id (String)
status
text
voice
05fa39ab-972a-4172...
PROCESSING
<empty>
Joanna
6cf8c04a-b582-4eb6-...
PROCESSING
This is work...
Joanna
7f83e2de-474...
PROCESSING
This is work...
Joanna
31528242-0477-4f16...
PROCESSING
This is work...
Joanna
2efbcc52-011c-44f0-...
PROCESSING
This is work...
Joanna
e2bbde81-9a9e-4793...
PROCESSING
My name is ...
Liv
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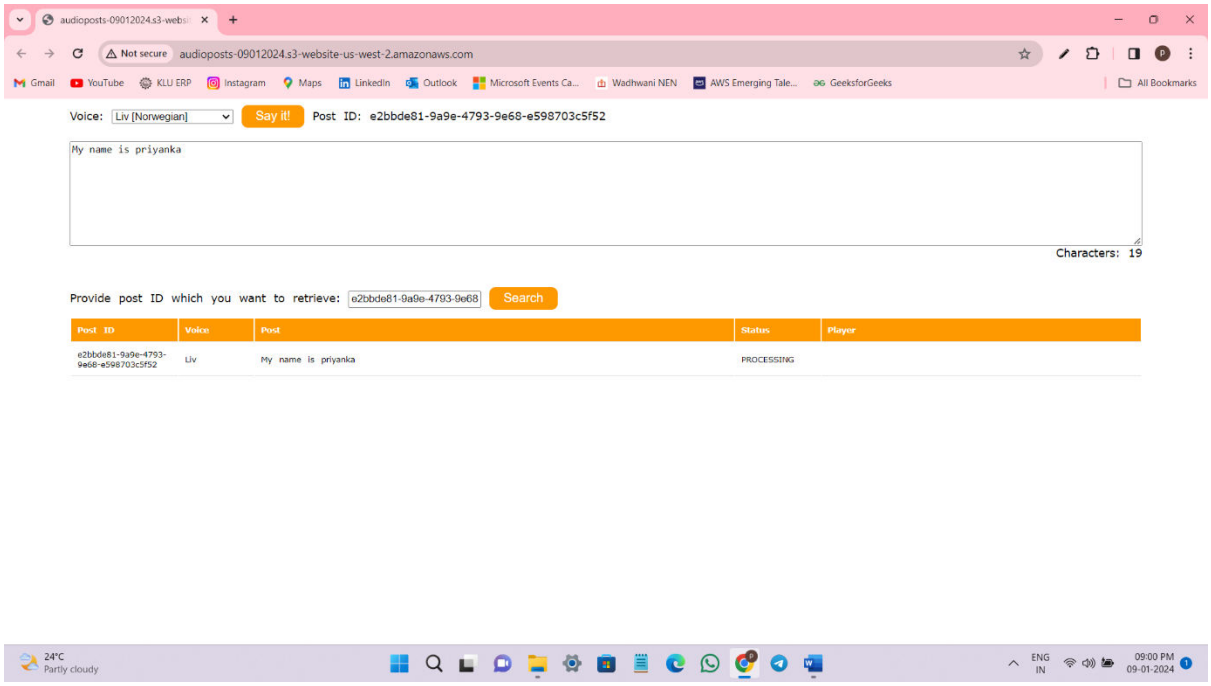
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Gmail
YouTube
KLU ERP
Instagram
Maps
LinkedIn
Outlook
Microsoft Events Ca...
Wadhwani NEN
AWS Emerging Tale...
GeeksforGeeks
All Bookmarks
Voice: Liv [Norwegian]
Say it!
Post ID: e2bbde81-9a9e-4793-9e68-e598703c5f52
My name is priyanka
Characters: 19
Provide post ID which you want to retrieve: e2bbde81-9a9e-4793-9e68
Search
Post ID
Voice
Post
Status
Player
e2bbde81-9a9e-4793-9e68-e598703c5f52
Liv
My name is priyanka
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