

Online Voting System

1.Create DynamoDB Table:

The screenshot shows the 'Create table' page in the AWS Management Console. The browser tabs include 'Create table | Amazon DynamoDB', 'Create a website and api with...', '(20) Online Voting System with...', 'Online Voting System Setup', and 'New Tab'. The address bar shows the URL 'us-east-1.console.aws.amazon.com/dynamodbv2/home?region=us-east-1#create-table'. The page title is 'Create table'. The 'Table details' section includes a 'Table name' field with the value 'OnlineVotingSystem' and a 'Partition key' dropdown set to 'String'. The 'Table settings' section shows 'Default settings' selected. The bottom of the page shows a Windows taskbar with a weather widget indicating 28°C and a system clock showing 09:37 on 14-04-2025.

Create table

Table details [Info](#)

DynamoDB is a schemaless database that requires only a table name and a primary key when you create the table.

Table name

This will be used to identify your table.

OnlineVotingSystem

Between 3 and 255 characters, containing only letters, numbers, underscores (_), hyphens (-), and periods (.).

Partition key

The partition key is part of the table's primary key. It is a hash value that is used to retrieve items from your table and allocate data across hosts for scalability and availability.

candidate String

1 to 255 characters and case sensitive.

Sort key - optional

You can use a sort key as the second part of a table's primary key. The sort key allows you to sort or search among all items sharing the same partition key.

Enter the sort key name String

1 to 255 characters and case sensitive.

Table settings

☐ Default settings

The fastest way to create your table. You can modify most of these settings after your table has been created. To modify these settings, see [Amazon DynamoDB settings](#).

☒ Customize settings

Use these advanced features to make DynamoDB work better for your needs.

The screenshot shows the 'Tables' page in the AWS Management Console. The browser tabs are the same as the previous screenshot. The address bar shows the URL 'us-east-1.console.aws.amazon.com/dynamodbv2/home?region=us-east-1#tables'. The page title is 'DynamoDB > Tables'. A green notification bar at the top states 'The OnlineVotingSystem table was created successfully.' The 'Tables (1)' section shows a table named 'OnlineVotingSystem' with a status of 'Active', a partition key of 'candidate (S)', and a sort key of '-'. The table is listed in a table with columns: Name, Status, Partition key, Sort key, Indexes, Replication Regions, Deletion protection, Favorite, and Rea. The bottom of the page shows a Windows taskbar with a weather widget indicating 28°C and a system clock showing 09:38 on 14-04-2025.

DynamoDB

Tables (1) [Info](#)

<input type="checkbox"/>	Name	Status	Partition key	Sort key	Indexes	Replication Regions	Deletion protection	Favorite	Rea
<input type="checkbox"/>	OnlineVotingSystem	Active	candidate (S)	-	0	0	Off	☆	Pro

2. Create Lambda Function

us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/create/function

Create function [Info](#)

Choose one of the following options to create your function.

☒ **Author from scratch**
Start with a simple Hello World example.

☐ **Use a blueprint**
Build a Lambda application from sample code and configuration presets for common use cases.

☐ **Container image**
Select a container image to deploy for your function.

Basic information

Function name
Enter a name that describes the purpose of your function.
votingfunction
Function name must be 1 to 64 characters, must be unique to the Region, and can't include spaces. Valid characters are a-z, A-Z, 0-9, hyphens (-), and underscores (_).

Runtime [Info](#)
Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.
Python 3.13

Architecture [Info](#)
Choose the instruction set architecture you want for your function code.
☒ x86_64
☐ arm64

Permissions [Info](#)
By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

Change default execution role

Execution role
Choose a role that defines the permissions of your function. To create a custom role, go to the [IAM console](#).
☐ Create a new role with basic Lambda permissions
☒ Use an existing role
☐ Create a new role from AWS policy templates

Existing role
Choose an existing role that you've created to be used with this Lambda function. The role must have permission to upload logs to Amazon CloudWatch Logs.
VotingRole
[View the VotingRole role](#) on the IAM console.

Additional Configurations
Use additional configurations to set up code signing, function URL, tags, and Amazon VPC access for your function.

[Cancel](#) [Create function](#)

Code:

```
import json
import boto3
from decimal import Decimal

dynamodb = boto3.resource('dynamodb')
table = dynamodb.Table('OnlineVotingSystem')

# Helper function to convert Decimals in the response
def convert_decimal(obj):
    if isinstance(obj, Decimal):
        return int(obj) if obj % 1 == 0 else float(obj)
    if isinstance(obj, dict):
        return {k: convert_decimal(v) for k, v in obj.items()}
    if isinstance(obj, list):
        return [convert_decimal(i) for i in obj]
    return obj

def lambda_handler(event, context):
    try:
        body = json.loads(event['body']) if 'body' in event else event
    except Exception:
        return {
            'statusCode': 400,
            'body': json.dumps({'message': 'Invalid JSON input'})
        }
```

```
candidate = body.get('candidate')
```

```
if not candidate:
```

```
    return {  
        'statusCode': 400,  
        'body': json.dumps({'message': 'candidate is required'})  
    }
```

```
# Update the vote count atomically
```

```
response = table.update_item(  
    Key={'candidate': candidate},  
    UpdateExpression='ADD votes :inc',  
    ExpressionAttributeValues={':inc': Decimal(1)},  
    ReturnValues='UPDATED_NEW'  
)
```

```
return {  
    'statusCode': 200,  
    'body': json.dumps({  
        'message': 'Vote recorded successfully',  
        'updatedVotes': convert_decimal(response['Attributes']['votes'])  
    })  
}
```

us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/votingfunction?newFunction=true&tab=testing

Test event info

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.

Test event action

☐ Create new event ☒ Edit saved event

Event name

event1

Event JSON

```
1 {
2   "body": "{\"candidate\": \"Alice\"}"
3 }
4
```

1:1 JSON

us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/votingfunction?newFunction=true&tab=testing

Executing function: succeeded (Logs)

Details

```
{
  "statusCode": 200,
  "body": "{\"message\": \"Vote recorded successfully\", \"updatedVotes\": 3}"
}
```

Summary

Code SHA-256 rvt1N8TVPSuDF+qItQk1jG/GxhV13uxwSKexJnzjCI=	Execution time 53 seconds ago
Function version \$LATEST	Request ID 14bb3d70-45d6-4662-b06b-d89b01f6298c
Duration 45.18 ms	Billed duration 46 ms
Resources configured 3000 MB	Max memory used 80 MB
Init duration 472.35 ms	

Log output

The area below shows the last 4 KB of the execution log. [Click here](#) to view the corresponding CloudWatch log group.

3. Create RestAPI

us-east-1.console.aws.amazon.com/apigateway/main/create-rest?experience=rest®ion=us-east-1

API Gateway > APIs > Create API > Create REST API

Successfully deleted API "VotingAPI".

Create REST API [Info](#)

API details

☒ **New API**
Create a new REST API.

☐ **Clone existing API**
Create a copy of an API in this AWS account.

☐ **Import API**
Import an API from an OpenAPI definition.

☐ **Example API**
Learn about API Gateway with an example API.

API name
VotingAPI

Description - optional

API endpoint type
Regional APIs are deployed in the current AWS Region. Edge-optimized APIs route requests to the nearest CloudFront Point of Presence. Private APIs are only accessible from VPCs.
Regional

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Create Resource:

us-east-1.console.aws.amazon.com/apigateway/main/apis/7a9unwidk/resources/bt961ytlrb/create-resource?api=7a9unwidk&experience=rest®ion=us-east-1

API Gateway > APIs > Resources - VotingAPI (7a9unwidk) > Create resource

Create resource

Resource details

☒ **Proxy resource** [Info](#)
Proxy resources handle requests to all sub-resources. To create a proxy resource use a path parameter that ends with a plus sign, for example {proxy+}.

Resource path
/

Resource name
vote

☐ **CORS (Cross Origin Resource Sharing)** [Info](#)
Create an OPTIONS method that allows all origins, all methods, and several common headers.

Cancel Create resource

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Create Method:

Create a website and api · API Gateway - Create met · Online Voting System Set · (20) Online Voting System · How to create a serverless · List tables | Amazon Dyna ·

us-east-1.console.aws.amazon.com/apigateway/main/apis/7a9unwidkk/resources/uvcwkk/create-method?api=7a9unwidkk&experience=rest®ion=us-east-1

RWS Search [Alt+S] United States (N. Virginia) kondasani Rohitha

API Gateway > APIs > Resources - VotingAPI (7a9unwidkk) > Create method

Successfully created resource '/vote'


Create method


Method details


Method type


POST


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.

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Create a website and api · API Gateway - Create met · Online Voting System Set · (20) Online Voting System · How to create a serverless · List tables | Amazon Dyna ·

us-east-1.console.aws.amazon.com/apigateway/main/apis/7a9unwidkk/resources/uvcwkk/create-method?api=7a9unwidkk&experience=rest®ion=us-east-1

RWS Search [Alt+S] United States (N. Virginia) kondasani Rohitha

API Gateway > APIs > Resources - VotingAPI (7a9unwidkk) > Create method

Provide the Lambda function name or alias. You can also provide an ARN from another account.

us-east-1

Grant API Gateway permission to invoke your Lambda function

When you save your changes, API Gateway updates your Lambda function's resource-based policy to allow this API to invoke it.

Integration timeout [Info](#)
By default, you can enter an integration timeout of 50 - 29,000 milliseconds. You can use Service Quotas to raise the integration timeout to greater than 29,000 ms

Method request settings

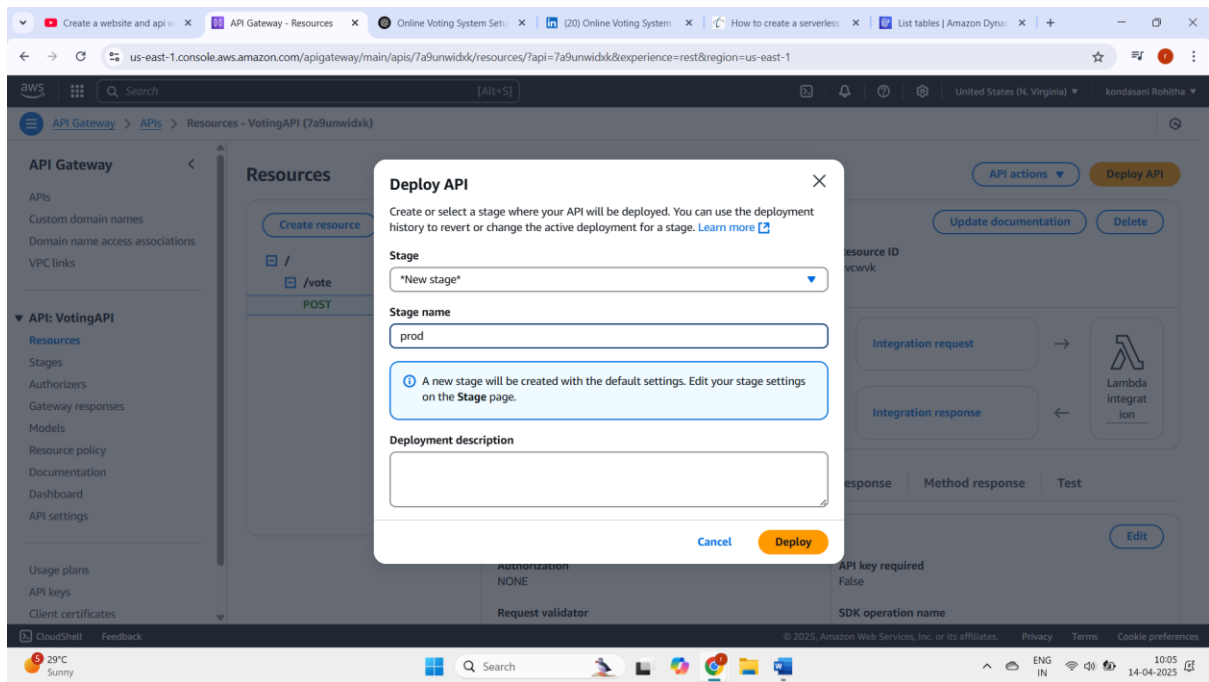
URL query string parameters

HTTP request headers

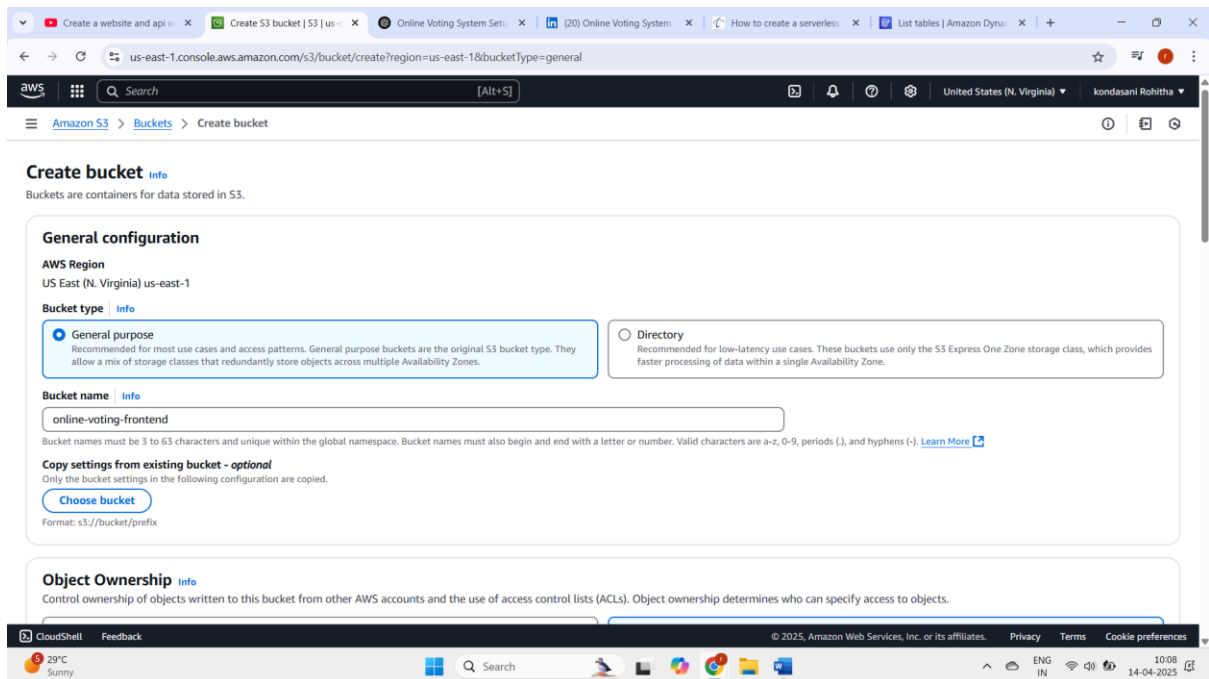
Request body

[Cancel](#) [Create method](#)

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4. Create S3 Bucket



Create a website and api...online-voting-frontend - 5Online Voting System Set... (20) Online Voting System...How to create a serverless...List tables | Amazon Dyna...us-east-1.console.aws.amazon.com/s3/buckets/online-voting-frontend?region=us-east-1&bucketType=general&tab=objects

RWS[Alt+S]United States (N. Virginia)kondasani Rohitha

Amazon S3> Buckets> online-voting-frontend

online-voting-frontend

ObjectsMetadataPropertiesPermissionsMetricsManagementAccess Points

Objects (5)

Copy S3 URICopy URLDownloadOpenDeleteActionsCreate folderUpload

Find objects by prefix

	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	party1.jpg	jpg	April 14, 2025, 10:09:59 (UTC+05:30)	9.4 KB	Standard
<input type="checkbox"/>	party2.jpg	jpg	April 14, 2025, 10:09:58 (UTC+05:30)	8.1 KB	Standard
<input type="checkbox"/>	party3.jpg	jpg	April 14, 2025, 10:09:57 (UTC+05:30)	16.7 KB	Standard
<input type="checkbox"/>	party4.jpg	jpg	April 14, 2025, 10:09:56 (UTC+05:30)	8.7 KB	Standard
<input type="checkbox"/>	voting.html	html	April 14, 2025, 10:10:00 (UTC+05:30)	4.5 KB	Standard

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Create a website and api...Make objects public - S3...Online Voting System Set... (20) Online Voting System...How to create a serverless...List tables | Amazon Dyna...us-east-1.console.aws.amazon.com/s3/buckets/online-voting-frontend/object/edit_public_read_access?region=us-east-1&bucketType=general&showversions=false

RWS[Alt+S]United States (N. Virginia)kondasani Rohitha

Successfully edited public accessView details below.

Make public: statusClose

After you navigate away from this page, the following information is no longer available.

Summary

Source
s3://online-voting-frontend

Successfully edited public access
5 objects, 47.4 KB

Failed to edit public access
0 objects

Failed to edit public access

Configuration

Failed to edit public access (0)

Find objects by name

Name	Folder	Type	Last modified	Size	Error
No objects failed to edit					

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us-east-1.console.aws.amazon.com/s3/bucket/online-voting-frontend/property/website/edit?region=us-east-1&bucketType=general

Amazon S3 Buckets online-voting-frontend Edit static website hosting

Edit static website hosting Info

Static website hosting

Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting

☐ Disable

☒ Enable

Hosting type

☒ Host a static website

Use the bucket endpoint as the web address. [Learn more](#)

☐ Redirect requests for an object

Redirect requests to another bucket or domain. [Learn more](#)

For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see [Using Amazon S3 Block Public Access](#)

Index document

Specify the home or default page of the website.

voting.html

Error document - optional

This is returned when an error occurs.

error.html

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us-east-1.console.aws.amazon.com/s3/buckets/online-voting-frontend?region=us-east-1&bucketType=general&tab=properties

Amazon S3 Buckets online-voting-frontend

Successfully edited static website hosting.

Requester pays

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](#)

We recommend using **AWS Amplify Hosting** for static website hosting. Deploy a fast, secure, and reliable website quickly with AWS Amplify Hosting. Learn more about [Amplify Hosting](#) or [View your existing Amplify apps](#). [Create Amplify app](#)

S3 static website hosting

Enabled

Hosting type

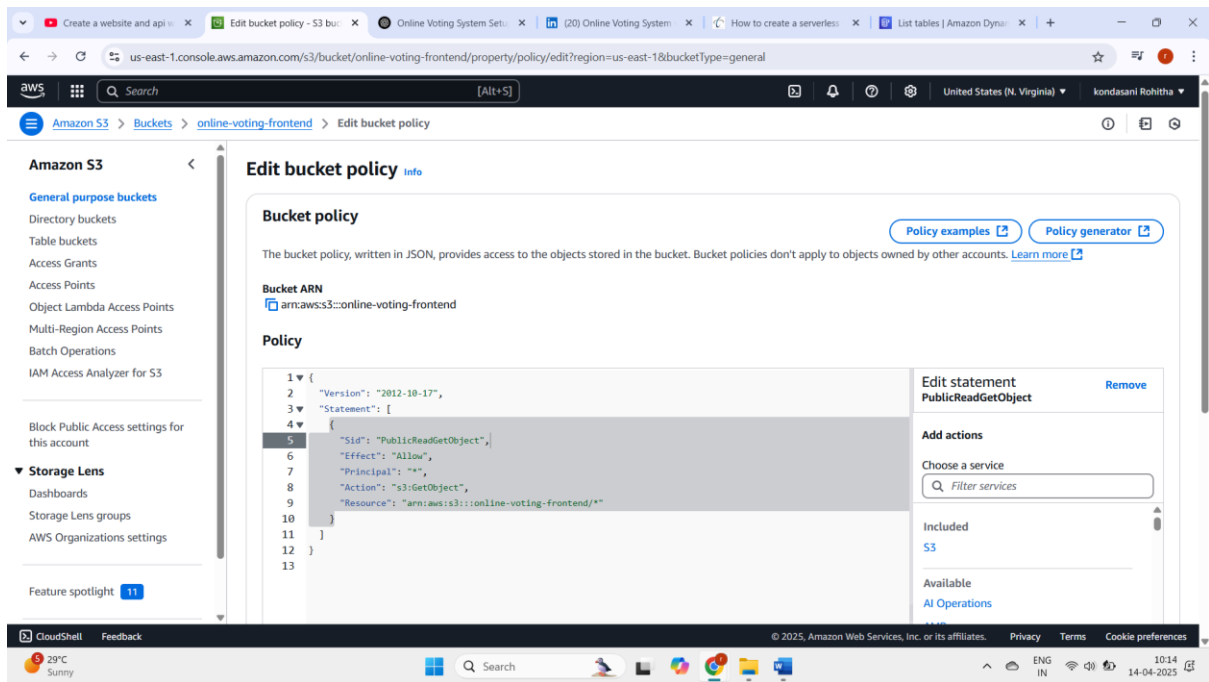
Bucket hosting

Bucket website endpoint

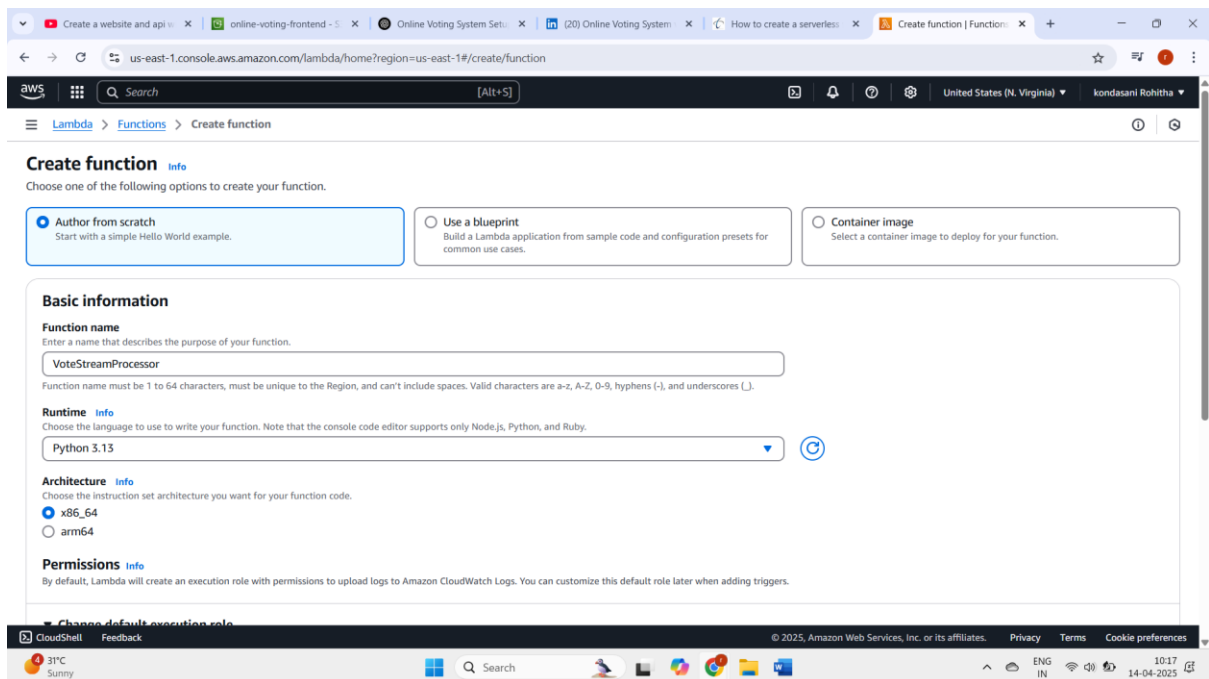
When you configure your bucket as a static website, the website is available at the AWS Region-specific website endpoint of the bucket. [Learn more](#)

<http://online-voting-frontend-s3-website-us-east-1.amazonaws.com>

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5. Create Lambda function



Code :

import json

import boto3

dynamodb = boto3.resource('dynamodb')

```
table = dynamodb.Table('OnlineVotingSystem') # Updated table name
```

```
def lambda_handler(event, context):
```

```
    # Scan the entire table to get all candidate vote counts
```

```
    response = table.scan()
```

```
    # Create a dictionary with candidate names and their vote counts
```

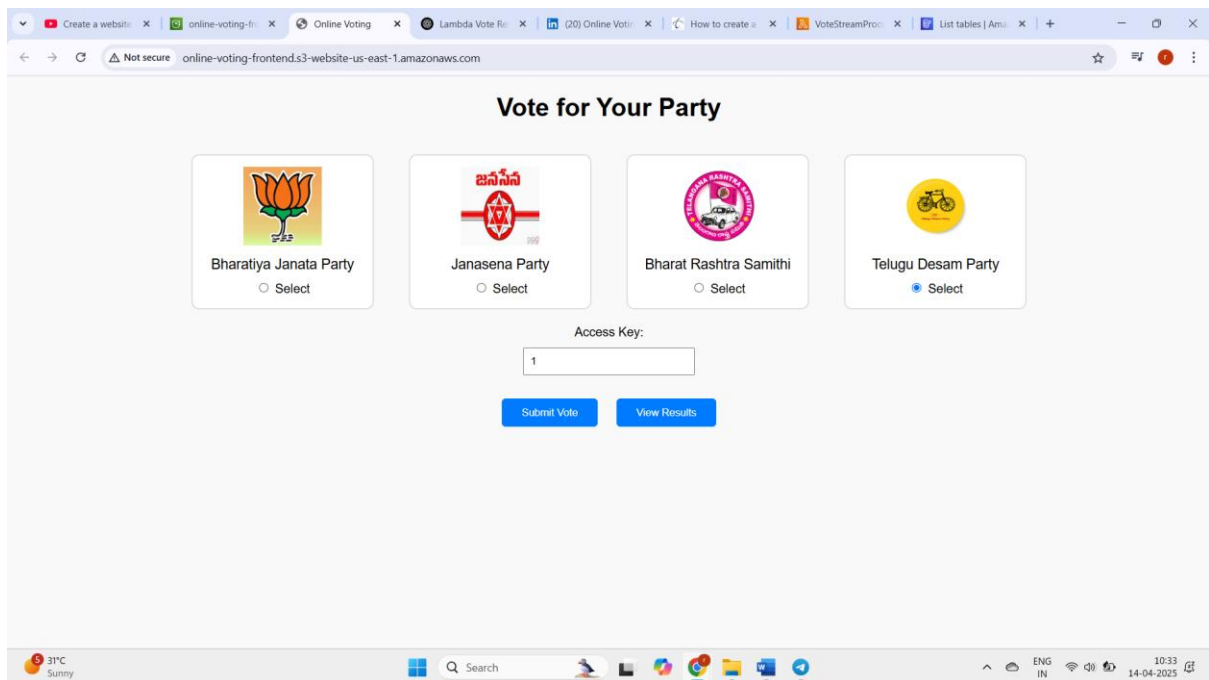
```
    votes = {item['candidate']: item.get('Votes', 0) for item in response['Items']}
```

```
    return {
```

```
        'statusCode': 200,
```

```
        'body': json.dumps(votes)
```

```
    }
```



Create a websiteonline-voting-frOnline VotingLambda Vote Re(20) Online VotHow to create avotingfunctionList tables | Amius

us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/votingfunction?tab=testing

RWS

Search[Alt+S]

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Lambda> Functions> votingfunction

API gateway

+ Add trigger

Function URLInfo

CodeTestMonitorConfigurationAliasesVersions

Executing function: succeeded (logs)

Details

```
{
  "statusCode": 200,
  "body": "{\"message\": \"Vote recorded successfully\", \"updatedVotes\": 4}"
}
```

Summary

Code SHA-256

bn6lpddTRSQdq2k+hBEjzv+XJxsVbuObSX+8Ws+DI=

Function version

\$LATEST

Duration

46.00 ms

Resources configured

Execution time

2 seconds ago

Request ID

2dd56bd0-cb28-4410-a3e7-dd2369bb08c4

Billed duration

47 ms

Max memory used

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31°C Sunny

Search

ENG IN

10:33 14-04-2025