

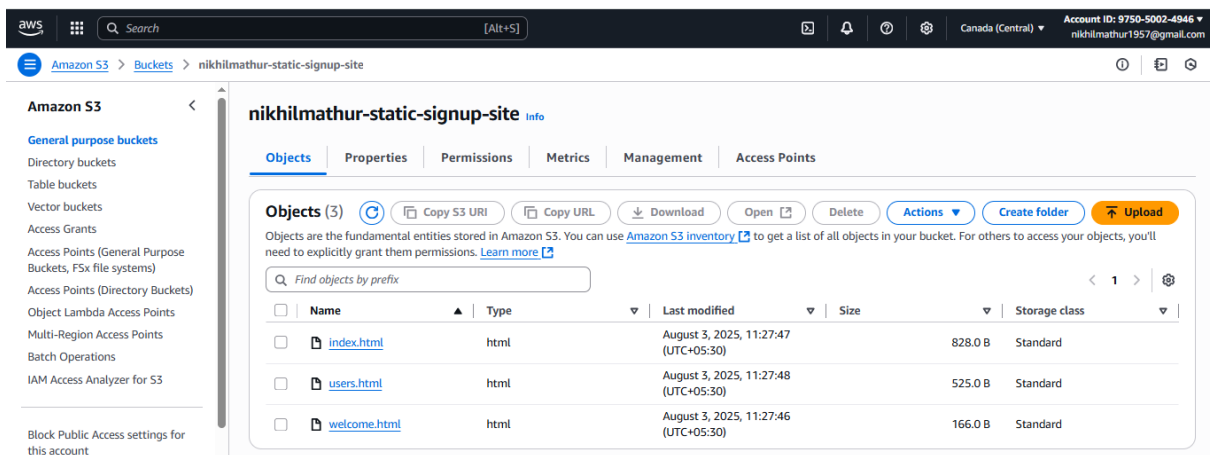
Assignment 2: Automated S3 Bucket Cleanup Using AWS Lambda and Boto3

Task: Automate the deletion of files older than 30 days in a specific S3 bucket.

1. S3 Setup: (I used old bucket for the task)

a. Navigate to the S3 dashboard and create a new bucket.

- Click the orange Create bucket button.
- Bucket name: **nikhilmathur-static-signup-site** (Must be globally unique)
- Choose your preferred region (Keep it consistent with other resources (like EC2, Lambda))
- Open your bucket by clicking its name.
- Click Upload → Add files (choose any file from your computer).
- Click Upload at the bottom.



2. Lambda Function:

a. Create an IAM Role for Lambda

- AWS Console => IAM => Roles => Create role.
- Trusted Entity type: AWS Services
- Use Case: Lambda
- Click Next
- Permissions policies: AmazonS3FullAccess
- Role name: NikhillLambdaS3CleanupRole

Step 1: Select trusted entity

Select trusted entity Info

Trusted entity type

- ☒ **AWS service**
Allow AWS services like EC2, Lambda, or others to perform actions in this account.
- ☐ **AWS account**
Allow entities in other AWS accounts belonging to you or a 3rd party to perform actions in this account.
- ☐ **Web identity**
Allows users federated by the specified external web identity provider to assume this role to perform actions in this account.
- ☐ **SAML 2.0 federation**
Allow users federated with SAML 2.0 from a corporate directory to perform actions in this account.
- ☐ **Custom trust policy**
Create a custom trust policy to enable others to perform actions in this account.

Use case
Allow an AWS service like EC2, Lambda, or others to perform actions in this account.

Service or use case

Choose a use case for the specified service.

Use case

- ☒ **Lambda**
Allows Lambda functions to call AWS services on your behalf.

Add permissions Info

Permissions policies (1520) Info

Choose one or more policies to attach to your new role.

Filter by Type: All types 1 match

<input type="checkbox"/>	Policy name <small>Info</small>	Type	Description
<input type="checkbox"/>	AmazonS3FullAccess	AWS managed	

Set permissions boundary - optional

[Cancel](#) [Previous](#) [Next](#)

Identity and Access Management (IAM)

NikhilLambdaS3CleanupRole Info

Allows Lambda functions to call AWS services on your behalf.

Summary

Creation date: August 16, 2025, 23:27 (UTC+05:30)

ARN: [arn:aws:iam::975050024946:role/NikhilLambdaS3CleanupRole](#)

Maximum session duration: 1 hour

Permissions | Trust relationships | Tags | Last Accessed | Revoke sessions

Permissions policies (1) Info

You can attach up to 10 managed policies.

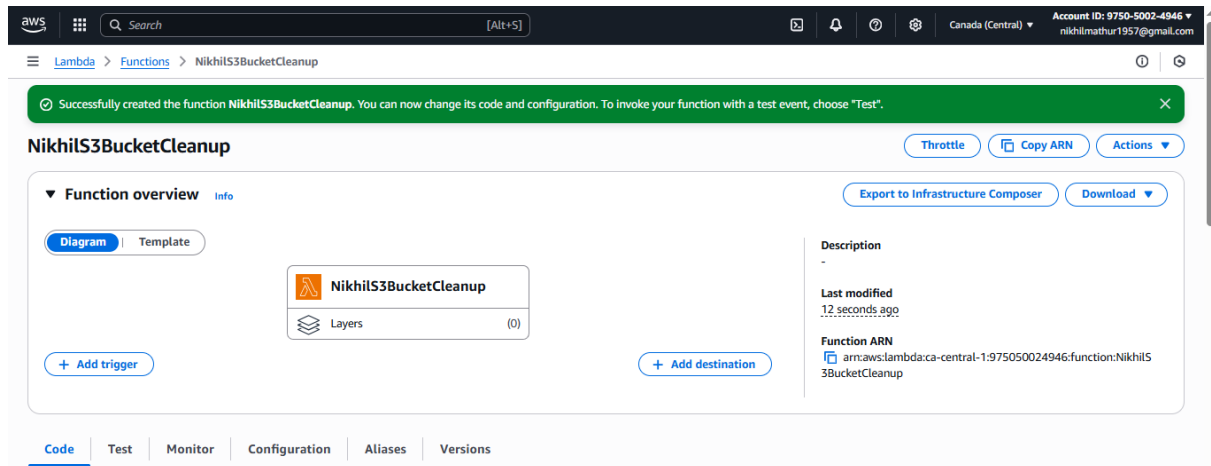
Filter by Type: All types

<input type="checkbox"/>	Policy name <small>Info</small>	Type	Attached entities
<input type="checkbox"/>	AmazonS3FullAccess	AWS managed	47

Permissions boundary (not set)

- b. Create the Lambda Function
 - i. Go to AWS Console => Lambda.
 - ii. Click Create function.
 - iii. Select Author from scratch

- iv. Function name: NikhilS3BucketCleanup
- v. Runtime: Python 3.13
- vi. Permissions:
- vii. Expand Change default execution role.
- viii. Select Use an existing role.
- ix. Choose NikhilLambdaS3CleanupRole from the dropdown.
- x. Note => I choose the role prashantb12-role-9p53470y for permission access to run the code.
- xi. Click Create function.



Code

```
1  import boto3
2  import datetime
3
4  def lambda_handler(event, context):
5      s3 = boto3.client('s3')
6      bucket_name = "nikhilmathur-static-signup-site"
7      days_threshold = 10  #10 days old files
8
9      # Calculate cutoff date
10     cutoff_date = datetime.datetime.now(datetime.timezone.utc) - datetime.timedelta(days=days_threshold)
11
12     # List all objects in the bucket
13     response = s3.list_objects_v2(Bucket=bucket_name)
14
15     if 'Contents' not in response:
16         print("Bucket is empty.")
17         return {"Deleted": [], "Message": "No files found."}
18
19     deleted_files = []
20
21     for obj in response['Contents']:
22         if obj['LastModified'] < cutoff_date:
23             s3.delete_object(Bucket=bucket_name, Key=obj['Key'])
24             deleted_files.append(obj['Key'])
25             print(f"Deleted: {obj['Key']}")
26
27     if not deleted_files:
28         print("No files older than threshold found.")
29     else:
30         print(f"Deleted {len(deleted_files)} files.")
31
32     return {"Deleted": deleted_files}
```

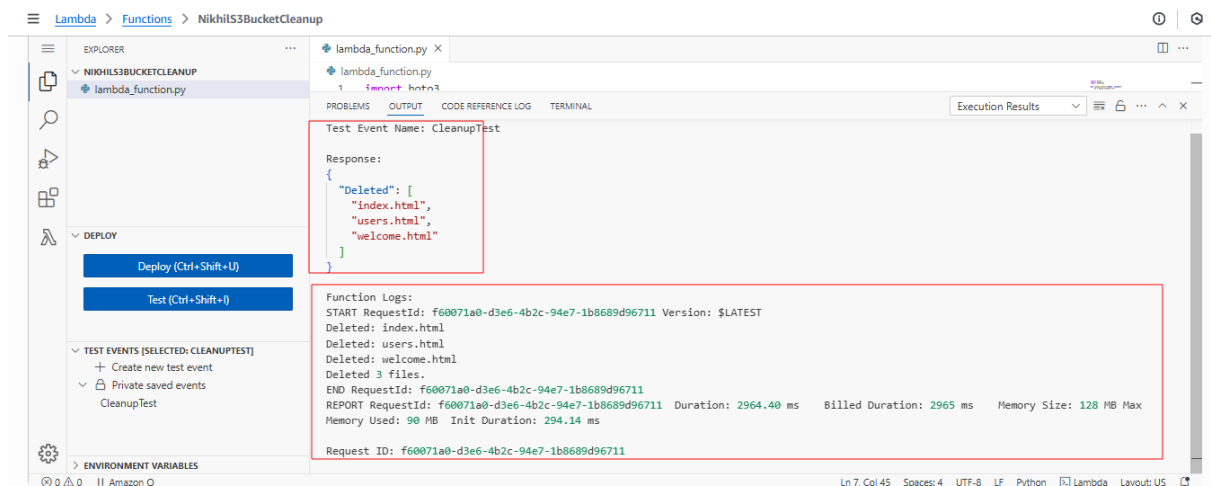
Click for deploy the code

Click Test → Create test event → name it CleanupTest.

Keep event JSON as {}.

Run the test.

Check the Logs for deleted files list.



The screenshot shows the AWS Lambda console for the function `NikhilS3BucketCleanup`. The `Test` button has been clicked, and the `Execution Results` tab is active. The `Test Event Name` is `CleanupTest`. The `Response` is a JSON object:

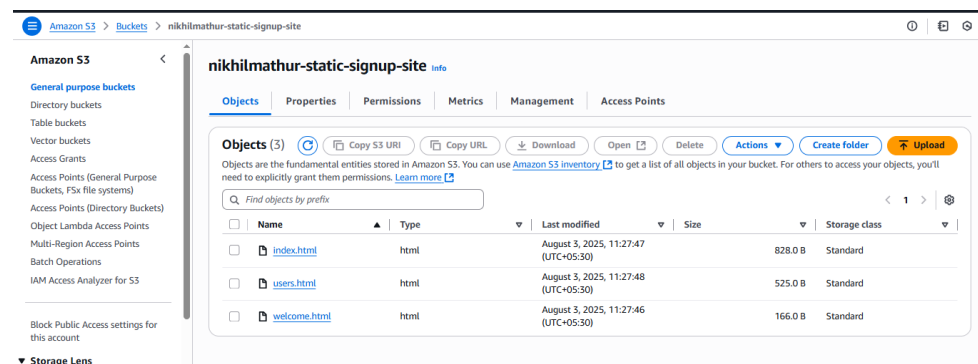
```
{  "Deleted": [    "index.html",    "users.html",    "welcome.html"  ]}
```

The `Function Logs` show the following output:

```
START RequestId: f60071a0-d3e6-4b2c-94e7-1b8689d96711 Version: $LATEST
Deleted: index.html
Deleted: users.html
Deleted: welcome.html
Deleted 3 files.
END RequestId: f60071a0-d3e6-4b2c-94e7-1b8689d96711
REPORT RequestId: f60071a0-d3e6-4b2c-94e7-1b8689d96711 Duration: 2964.40 ms Billed Duration: 2965 ms Memory Size: 128 MB Max
Memory Used: 90 MB Init Duration: 294.14 ms
Request ID: f60071a0-d3e6-4b2c-94e7-1b8689d96711
```

3. Manual Invocation:

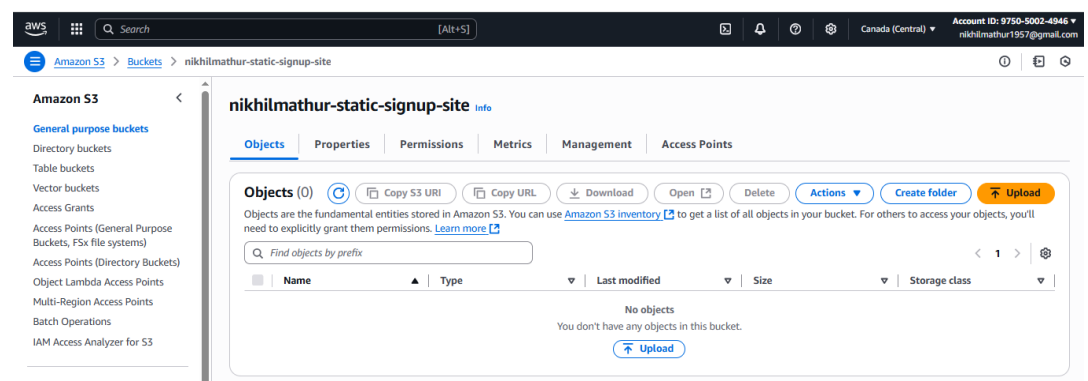
Before function run



The screenshot shows the Amazon S3 console for the bucket `nikhilmathur-static-signup-site`. The `Objects` tab is selected, and the bucket contains three files:

Name	Type	Last modified	Size	Storage class
index.html	html	August 3, 2025, 11:27:47 (UTC+05:30)	828.0 B	Standard
users.html	html	August 3, 2025, 11:27:48 (UTC+05:30)	525.0 B	Standard
welcome.html	html	August 3, 2025, 11:27:46 (UTC+05:30)	166.0 B	Standard

After run the function



The screenshot shows the Amazon S3 console for the bucket `nikhilmathur-static-signup-site`. The `Objects` tab is selected, and the bucket is empty. The message "No objects" is displayed, along with the text "You don't have any objects in this bucket." and an `Upload` button.