Project: AWS Lambda + API Gateway + S3 Web App

Goal

Build a simple web app that:

- Sends your name to an API Gateway endpoint

- Lambda receives the name and responds with:
  Hello <your-name> from Lambda!

- The response is shown on an HTML page

- HTML is hosted via an S3 Static Website

Step-by-Step Guide

Create IAM Role for Lambda Execution

- Go to **IAM → Roles → Create Role**

- Trusted entity: **Lambda**

- Attach policies:

  - AWSLambdaBasicExecutionRole

- Name it: lambda-execution-role

Create Lambda Function

- Go to **Lambda → Create function → Author from scratch**

- Name: helloLambda

- Runtime: Python 3.x

- Choose existing role: lambda-execution-role

- Add the code and Deploy

Set Up API Gateway

- Go to **API Gateway → Create API**

- Choose: **HTTP API** (or REST API)

- Name: Hello World API

Create Resource /hello

- Under **Resources**, click / → **Create Resource**

- Name: hello

- Path: /hello

Create Method: GET

- Click /hello → **Create Method → GET**

- Integration type: **Lambda Function**

- Enter: helloLambda

- Save

Enable CORS (Optional but good):

- Add OPTIONS method to /hello

- Manually add headers in GET method:

  o Access-Control-Allow-Origin: *

Deploy API

- Click **Actions → Deploy API**

- Stage name: prod

Your final URL:

https://<api-id>.execute-api.<region>.amazonaws.com/prod/hello

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Create api.html File

Create a file named api.html with this code:

Replace:

- <api-id> with your actual API Gateway ID

- <region> with your AWS region

Host api.html on S3

Create S3 Bucket

- Go to **S3 → Create bucket**

- Disable **Block all public access**

- Enable **Static website hosting**

- Note the **endpoint URL**

Upload api.html

- Click **Upload** → Select api.html

- Make the object **public**

Add Bucket Policy:

json

CopyEdit

```json
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "PublicReadGetObject",
      "Effect": "Allow",
      "Principal": "*",
      "Action": "s3:GetObject",
      "Resource": "arn:aws:s3:::your-bucket-name/*"
    }
  ]
}
```

- Replace your-bucket-name with actual bucket name

Test the App

- Open the **S3 website endpoint**

- Enter your name and click the button

- It should say:
  Hello <your-name> from Lambda!

Output

You click a button on a web page.
It sends your name to an API Gateway.
That calls the Lambda Function.
Lambda sends back: **Hello <your-name> from Lambda!**
Your page shows it nicely!

Get Greeting from Lambda

Harshi | Get Message

Hello Harshi from Lambda!