Repo Registry (AWS S3/CloudFront, API, Lambda, DDB)

A tiny, production-ready serverless app where anyone can **submit a GitHub repo** and **browse all submissions**.
Frontend is a static site on **S3 behind CloudFront (OAC, HTTPS)**; the API is **API Gateway → Lambda (Python) → DynamoDB**.

Stack

- **CloudFront + S3**: static hosting, HTTPS, private bucket with OAC

- **API Gateway (REST)**: /projects (**GET**, **POST**)

- **AWS Lambda (Python)**: request handling, validation, JSON responses

- **DynamoDB**: submissions store

  - Partition key: Project (constant "PROJECT")

 - Sort key: {createdAtEpochSeconds}#{uuid} (newest-first queries)

Environment

Set on the Lambda function:

- TABLE=Projects

- PK_ATTR=Project

- SK_ATTR={createdAtEpochSeconds}#{uuid}

- ALLOWED_ORIGIN=https://<your-cloudfront-domain>

Create the DynamoDB table

1. DynamoDB → **Create table**

2. **Table name**: Projects

3. **Partition key**: Project (String)

4. **Sort key**: {createdAtEpochSeconds}#{uuid} (String)

5. Capacity mode: **On-demand**

6. Create
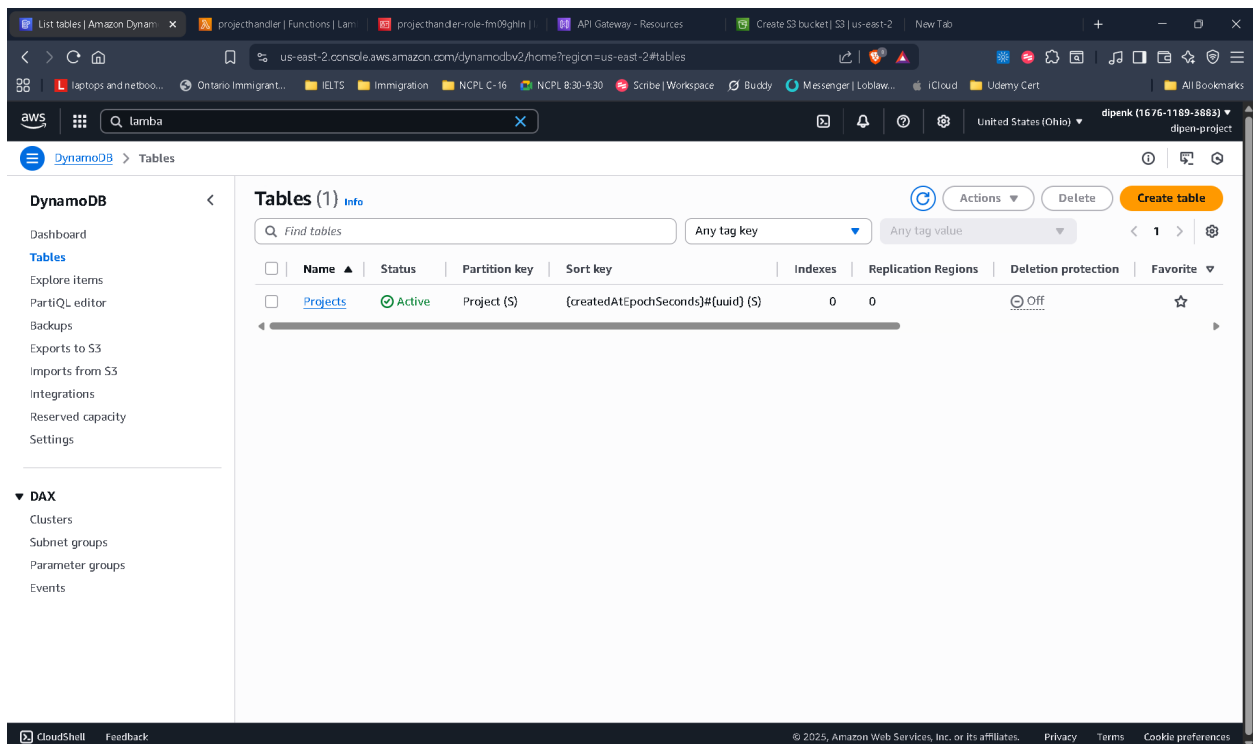
us-east-2.console.aws.amazon.com/dynamodbv2/home?region=us-east-2#table?name=Projects

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lamba

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DynamoDB > Tables > Projects

DynamoDB

Dashboard
Tables
Explore items
PartiQL editor
Backups

Exports to S3
Imports from S3
Integrations
Reserved capacity
Settings

▼ **DAX**
Clusters
Subnet groups
Parameter groups
Events

Tables (1)

Any tag key ▼

Any tag value ▼

🔍 Find tables

< 1 > ⚙

⦿ Projects ☆

Projects

☆ ↻ Actions ▼ **Explore table items**

Settings | Indexes | Monitor | Global tables | Backups | Exports and streams | Permissions

ⓘ **Protect your DynamoDB table from accidental writes and deletes**
When you turn on point-in-time recovery (PITR), DynamoDB backs up your table data automatically so that you can restore to any given second in the preceding 1 to 35 days. Additional charges apply.
Learn more 🔗

Edit PITR ✕

General information Info

Get live item count

Partition key
Project (String)

Sort key
{createdAtEpochSeconds}#{uuid} (String)

Capacity mode
On-demand

Table status
⊘ Active

Alarms
⊘ No active alarms

Point-in-time recovery (PITR) Info
⊖ Off

Item count
0

Table size
0 bytes

Average item size
0 bytes

Resource-based policy Info
⊖ Not active

Amazon Resource Name (ARN)
⎘ arn:aws:dynamodb:us-east-2:167611893883:table/Projects

▶ Additional info

CloudShell | Feedback

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Create the Lambda (Python)

1. Lambda → **Create function** → Author from scratch

   o Name: projecthandler

   o Runtime: **Python 3.11/3.12**

2. Paste the contents of lambda/lambda_function.py.

3. **Environment variables** (Configuration → Environment variables):

   o TABLE = Projects

   o PK_ATTR = Project

   o SK_ATTR = {createdAtEpochSeconds}#{uuid}

   o ALLOWED_ORIGIN = https://<your-cloudfront-domain>

4. **Permissions** (Execution role) → attach a policy allowing:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": ["dynamodb:PutItem", "dynamodb:Query"],
      "Resource": "arn:aws:dynamodb:<REGION>:<ACCOUNT_ID>:table/Projects"
    }
  ]
}
```

5. Deploy the function.

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Lambda › Functions › projecthandler

✅ Successfully updated the function **projecthandler**. ✕

Code source Info

Open in Visual Studio Code ⧉   Upload from ▾   ▾

projecthandler

EXPLORER   ⋯   lambda_function.py ✕

∨ PROJECTHANDLER   lambda_function.py

lambda_function.py

```python
7        ddb = boto3.resource("dynamodb")
8        table = ddb.Table(TABLE)
9
10       GITHUB_REPO_RE = re.compile(
11           r"^https?://(www\.)?github\.com/(?P<owner>[A-Za-z0-9_.-]+)/(?P<repo>[A-Za-z0-9_.-
12       )
13
14       def resp(status, body):
15           return {
16               "statusCode": status,
17               "headers": {
18                   "Content-Type": "application/json",
19                   "Access-Control-Allow-Origin": ALLOWED_ORIGIN,
20                   "Access-Control-Allow-Methods": "OPTIONS,GET,POST",
21                   "Access-Control-Allow-Headers": "Content-Type"
22               },
23               "body": json.dumps(body)
24           }
25
26       def to_native(x):
27           if isinstance(x, list): return [to_native(i) for i in x]
28           if isinstance(x, dict): return {k: to_native(v) for k, v in x.items()}
29           if isinstance(x, Decimal): return float(x) if (x % 1) else int(x)
30           return x
```

∨ DEPLOY

Deploy (Ctrl+Shift+U)

Test (Ctrl+Shift+I)

∨ TEST EVENTS [NONE SELECTED]

+ Create new test event

Info / Tutorials

Learn how to implement common use cases in AWS Lambda.

Create a simple web app ∧

In this tutorial you will learn how to:
- Build a simple web app, consisting of a Lambda function with a function URL that outputs a webpage
- Invoke your function through its function URL

Learn more ⧉

Start tutorial

✅ Successfully updated the function **projecthandler**. ✕

projecthandler

Throttle   Copy ARN   Actions ▾

▾ **Function overview** Info

Export to Infrastructure Composer   Download ▾

| Diagram | Template |

projecthandler

Layers (0)

+ Add trigger   + Add destination

Description
-

Last modified
13 minutes ago

Function ARN
arn:aws:lambda:us-east-2:167611893883:function:projecthandler

Function URL Info
-

Code   Test   Monitor   **Configuration**   Aliases   Versions

General configuration
Triggers
Permissions

Execution role

↻   Edit   View role document

Role name
projecthandler-role-fm09ghln ⧉

Info / Tutorials

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Learn more ⧉

Start tutorial

us-east-2.console.aws.amazon.com/lambda/home?region=us-east-2#/functions/projecthandler?newFunction=tru...

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Lambda > Functions > projecthandler

API Gateway (2)

+ Add trigger

nction:projecthandler

Function URL   Info
-

Info   **Tutorials**

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Start tutorial

Code   Test   Monitor   **Configuration**   Aliases   Versions

General configuration

Triggers

Permissions

Destinations

Function URL

Environment variables

Tags

VPC

RDS databases

Monitoring and operations tools

Environment variables (4)   **Edit**

The environment variables below are encrypted at rest with the default Lambda service key.

🔍 Find environment variables

Key	Value
ALLOWED_ORIGIN	https://d2c28v2xk2s98n.cloudfront.net
PK_ATTR	Project
SK_ATTR	{createdAtEpochSeconds}#{uuid}
TABLE	Projects

---

us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/roles/details/projecthandler-role-fm09ghl...

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IAM > Roles > projecthandler-role-fm09ghln

Identity and Access Management (IAM)

🔍 Search IAM

Dashboard

▼ Access management
   User groups
   Users
   Roles
   Policies
   Identity providers
   Account settings
   Root access management   New

▼ Access reports
   Access Analyzer
     Resource analysis   New
     Unused access
     Analyzer settings
   Credential report
   Organization activity
   Service control policies
   Resource control policies   New

⊘ Policy projectsdb created.   ✕

Creation date
August 23, 2025, 10:13 (UTC-04:00)

Last activity
-

ARN
arn:aws:iam::167611893883:role/service-role/projecthandler-role-fm09ghln

Maximum session duration
1 hour

Permissions   Trust relationships   Tags   Last Accessed   Revoke sessions

Permissions policies (4)   Info   ↻   Simulate ⧉   Remove   **Add permissions** ▼

You can attach up to 10 managed policies.

Filter by Type

🔍 Search   All types ▼   ‹ 1 ›   ⚙

☐	Policy name ⧉ ▲	Type ▼	Attached entities ▼
☐	⊕ 🟧 AmazonDynamoDBFullAccess	AWS managed	1
☐	⊕ AWSLambdaBasicExecutionRole-72cbddd...	Customer managed	1
☐	⊕ AWSLambdaVPCAccessExecutionRole-f36...	Customer managed	1
☐	⊕ projectsdb	Customer inline	0

▶ **Permissions boundary** (not set)

us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/roles/details/projecthandler-role-fm09ghl...

aws Search [Alt+S] Global ▼ dipenk (1676-1189-3883) ▼ dipen-project

IAM > Roles > projecthandler-role-fm09ghln > Edit policy

Step 1
Modify permissions in projectsdb

Step 2
Review and save

Modify permissions in projectsdb Info

Add permissions by selecting services, actions, resources, and conditions. Build permission statements using the JSON editor.

Policy editor

Visual | **JSON**   Actions ▼   ▣

```
 1 ▼ {
 2      "Version": "2012-10-17",
 3 ▼    "Statement": [
 4 ▼        {
 5            "Sid": "Statement1",
 6            "Effect": "Allow",
 7 ▼          "Action": [
 8                "dynamodb:*"
 9            ],
10 ▼          "Resource": [
11                "arn:aws:dynamodb:us-east-2:167611893883:table/Projects"
12            ]
13        }
14    ]
15 }
```

Edit statement

Select a statement

Select an existing statement in the policy or add a new statement.

+ **Add new statement**

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Create the REST API (API Gateway)
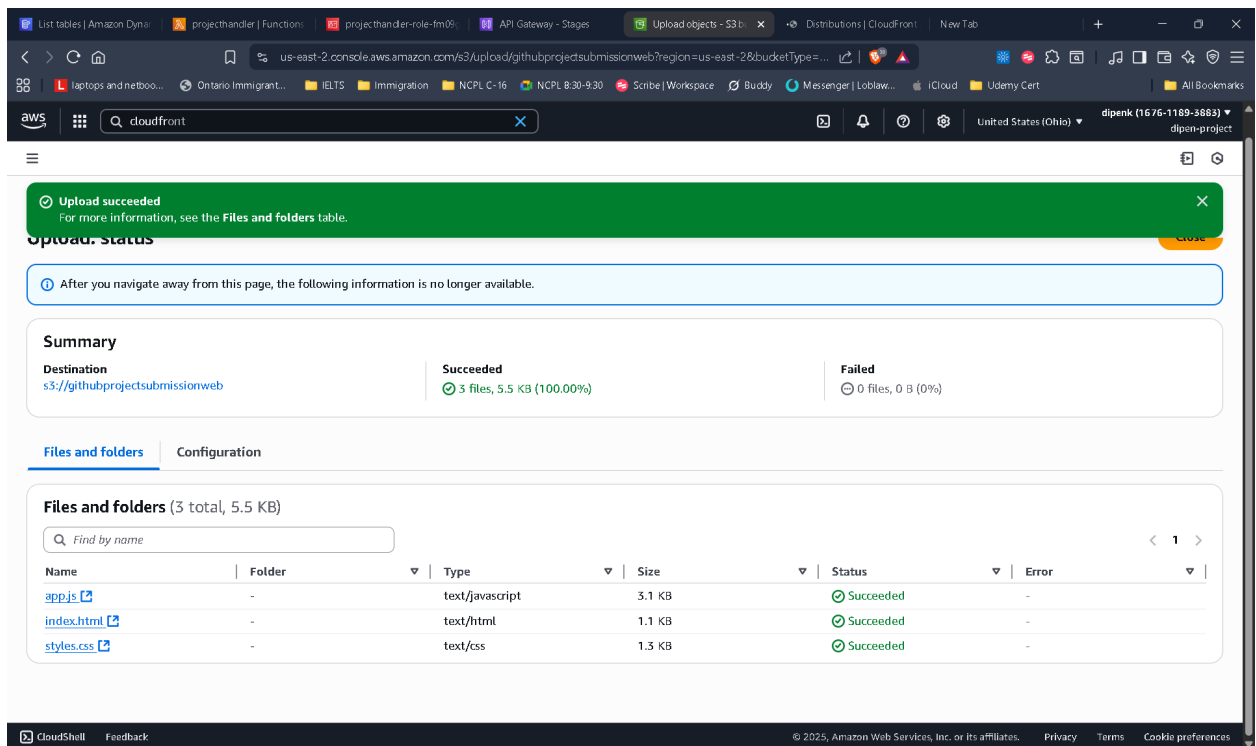
1. API Gateway → **Create API** → **REST API**

2. **Resources**: create resource /projects

3. Add methods on /projects (all with **Lambda proxy**):

    o **OPTIONS** → Lambda (or MOCK that returns CORS headers)

    o **GET** → Lambda projecthandler

    o **POST** → Lambda projecthandler

4. **Enable CORS** for /projects (or ensure responses include CORS headers)

5. **Deploy API** to a stage, e.g., prod

6. Note the **Invoke URL**:
    https://<restid>.execute-api.<region>.amazonaws.com/prod

Host the frontend (S3 + CloudFront, OAC)

1. S3 → **Create bucket** (private), e.g., your-site-bucket

2. Upload index.html, app.js, styles.css

3. CloudFront → **Create distribution**

   o **Origin**: your S3 bucket (not the website endpoint)

   o **Origin access**: **Origin Access Control (OAC)**

   o **Default root object**: index.html

   o Save → copy/paste the **generated bucket policy** into your bucket's **Bucket policy**

4. (Optional) Custom domain → attach ACM cert in **us-east-1**

5. Note your **CloudFront domain**: https://<xxxx>.cloudfront.net

6.

us-east-2.console.aws.amazon.com/s3/buckets/githubprojectsubmissionweb?region=us-east-2&bucketType...

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Amazon S3 > Buckets > githubprojectsubmissionweb

Amazon S3

General purpose buckets
Directory buckets
Table buckets
Vector buckets
Access Grants
Access Points (General Purpose Buckets, FSx file systems)
Access Points (Directory Buckets)
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

githubprojectsubmissionweb Info

| Objects | Metadata | Properties | Permissions | Metrics | Management | Access Points |

Objects (3)

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

	Name ▲	Type ▽	Last modified ▽	Size ▽	Storage class ▽
☐	app.js	js	August 23, 2025, 10:33:19 (UTC-04:00)	3.1 KB	Standard
☐	index.html	html	August 23, 2025, 10:33:19 (UTC-04:00)	1.1 KB	Standard
☐	styles.css	css	August 23, 2025, 10:33:19 (UTC-04:00)	1.3 KB	Standard

us-east-2.console.aws.amazon.com/s3/buckets/githubprojectsubmissionweb?region=us-east-2&bucketType...

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Amazon S3 > Buckets > **githubprojectsubmissionweb**

Amazon S3

- **General purpose buckets**
- Directory buckets
- Table buckets
- Vector buckets
- Access Grants
- Access Points (General Purpose Buckets, FSx file systems)
- Access Points (Directory Buckets)
- 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

⊘ Successfully edited bucket policy.

ⓘ **Public access is blocked because Block Public Access settings are turned on for this bucket**
To determine which settings are turned on, check your Block Public Access settings for this bucket. Learn more about using Amazon S3 Block Public Access ↗

Copy

```
{
    "Version": "2008-10-17",
    "Id": "PolicyForCloudFrontPrivateContent",
    "Statement": [
        {
            "Sid": "AllowCloudFrontServicePrincipal",
            "Effect": "Allow",
            "Principal": {
                "Service": "cloudfront.amazonaws.com"
            },
            "Action": "s3:GetObject",
            "Resource": "arn:aws:s3:::githubprojectsubmissionweb/*",
            "Condition": {
                "StringEquals": {
                    "AWS:SourceArn": "arn:aws:cloudfront::167611893883:distribution/E25SGCUALXJCHN"
                }
            }
        }
    ]
}
```

Object Ownership ⓘ Info

Edit

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access

us-east-1.console.aws.amazon.com/cloudfront/v4/home?region=us-east-2#/distributions/E25SGCUAL...

Search [Alt+S]

Global ▼

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dipen-project

CloudFront > Distributions > E25SGCUALXJCHN

E25SGCUALXJCHN [Standard]

View metrics

General   Security   Origins   Behaviors   Error pages   Invalidations   Tags   Logging

Details

Name
- ✏️

Distribution domain name
📋 d2c28v2xk2s98n.cloudfront.net

ARN
📋 arn:aws:cloudfront::167611893883:distri
bution/E25SGCUALXJCHN

Last modified
⊖ Deploying

Settings

Edit

Description
-

Price class
Use all edge locations (best performance)

Supported HTTP versions
HTTP/2, HTTP/1.1, HTTP/1.0

Alternate domain names
-

Add domain

Standard logging
Off

Cookie logging
Off

Default root object
-

Continuous deployment Info

Create staging distribution

CloudShell   Feedback

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Community Projects

Submit a project

https://github.com/owner/repo

Title (optional)

Your name (optional)

Short description (optional)

Submit

All submissions

Refresh

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Community Projects

Submit a project

https://github.com/owner/repo

Title (optional)

Your name (optional)

Short description (optional)

Submit

☑ Submitted!

All submissions

Refresh

dipen
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 10:01:29 PM • by sdsfsd
dfsd

Project3_Three-Tier-Architecture-Terraform
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:55:26 PM

Project3_Three-Tier-Architecture-Terraform
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:53:39 PM

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d2c28v2xk2s98n.cloudfront.net

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All submissions

Refresh

dipen
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 10:01:29 PM • by sdsfsd
dfsd

Project3_Three-Tier-Architecture-Terraform
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:55:26 PM

Project3_Three-Tier-Architecture-Terraform
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:53:39 PM

Project3_Three-Tier-Architecture-Terraform
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:53:31 PM

Project3_Three-Tier-Architecture-Terraform
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:53:26 PM

Project3_Three-Tier-Architecture-Terraform
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:53:19 PM

Project3_Three-Tier-Architecture-Terraform
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:47:33 PM

SSFDSF
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:36:45 PM • by FFFD
DFDF

Project3_Three-Tier-Architecture-Terraform
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:24:09 PM

SSFDSF
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:11:33 PM • by FFFD
DFDF

sdcsdcioi
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:03:26 PM • by dk

sdcsdc
dipenkalal/Project3_Three-Tier-Architecture-Terraform •
8/23/2025, 9:03:06 PM • by dk

https://github.com/dipenkalal/Project3_Three-Tier-Architecture-Terraform