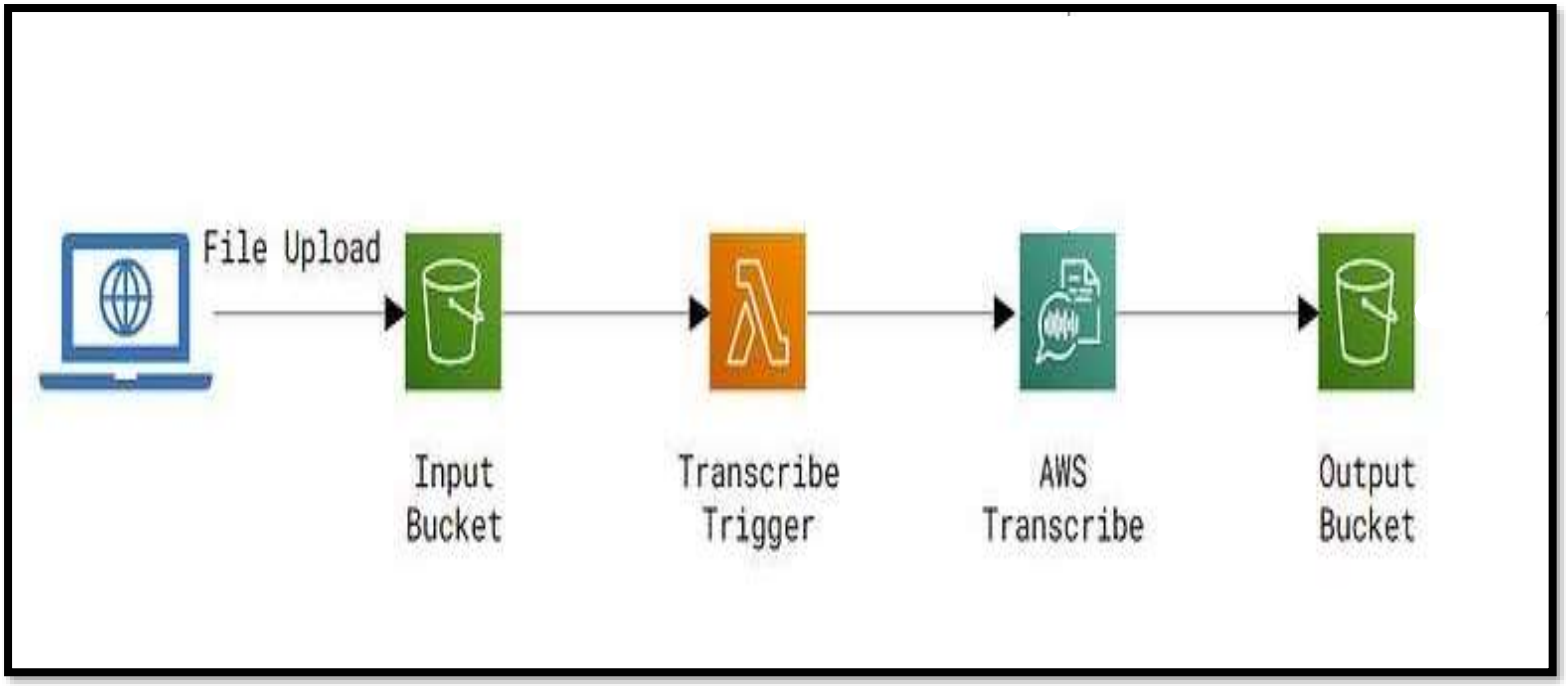
PROJECT TITLE

Development of a Web Application for Audio Transcription using AWS Transcribe

WEBSITE NAME

Capture Every Word with Audio Transcripts


File Upload
Input Bucket
Transcribe Trigger
AWS Transcribe
Output Bucket

➢ LAMBDA CODE

```
import boto3
import uuid
import json

def lambda_handler(event, context):

    record = event['Records'][0]

    s3bucket = record['s3']['bucket']['name']
    s3object = record['s3']['object']['key']

    s3Path = "s3://" + s3bucket + "/" + s3object
    jobName = s3object + '-' + str(uuid.uuid4())

    client = boto3.client('transcribe')
    response = client.start_transcription_job(
        TranscriptionJobName=jobName,
```

```
    LanguageCode='en-US',
    MediaFormat='mp3',
    Media={
        'MediaFileUri': s3Path
    },
    OutputBucketName = "<Output Bucket Name>"
)


return {
    'TranscriptionJobName': response['TranscriptionJob']['TranscriptionJobName']
}
```

➢ CUSTOM POLICY

In JSON

```
{
"Version": "2012-10-17",
"Statement": [
{
"Action": [
"s3:PutObject"
],
"Resource": [
"<outputbucket arn>/*"
],
"Effect": "Allow"
},
{
"Action": [
"s3:ListBucket"
],
"Resource": [
"<outputbucket arn>"
],
"Effect": "Allow"
}
]
}
```

Steps

1. Create an Input Bucket and mention the details in frontend page.
2. Create an IAM Role by attaching policies like S3 Full Access and Transcribe Full Access.
3. Create a Lambda Function by selecting runtime as Python 3.8 and execution role as Existing Role, select role name created in previous step.
4. Add Trigger select source as S3 and Bucket Name as Input Bucket.
5. After creating Lambda, Create an S3 Output Bucket to store the text which is converted by using AWS Transcribe through Lambda Function.
6. Now add Inline Policy to the Role which we already created in Step 2.
7. After adding policy, Navigate to S3 and click on output bucket now go to Properties tab scroll down to create an event notification.
8. Give the event and Events >> Object creation select all object create events.
9. Select destination as Lambda function and choose the lambda function created in Step 3.

Implementation

1. Upload the audio File using the frontend Page.
2. By clicking the Upload button it will directly uploaded into S3 Input Bucket.
3. As we triggered the lambda function.
4. That file will directly sent to the AWS Transcribe and randomly creates a job and its converts the audio file into text.
5. That output text will store into the S3 bucket in JSON format.
6. We can see the final text by downloading the JSON file.

Console Home | Console Home | u

us-east-1.console.aws.amazon.com/console/home?nc2=h_ct&region=us-east-1&src=header-signin#

aws | Services | Search [Alt+S] | N. Virginia | SIRAPU RUPAVATHI

Console Home Info

Reset to default layout | + Add widgets

Recently visited Info

- S3
- Amazon Transcribe
- Lambda
- IAM
- Billing and Cost Management
- CloudWatch
- EC2
- Amazon Lex
- Simple Notification Service
- Support
- DynamoDB
- API Gateway

View all services

Applications (0) Info

Create application

Region: US East (N. Virginia)

us-east-1 (Current Region) | Find applications | 1

Name	Description	Region	Originati...

No applications

Get started by creating an application to view your application cost, security findings, and metrics all in one place.

Create application

Go to myApplications

Welcome to AWS

AWS Health Info

Cost and usage Info

CloudShell | Feedback | © 2024, Amazon Web Services, Inc. or its affiliates. | Privacy | Terms | Cookie preferences

S3 buckets | S3 | Global

s3.console.aws.amazon.com/s3/buckets?region=us-east-1&bucketType=general

Services Search [Alt+S] Global SIRAPU RUPAVATHI

Successfully created bucket "s3-trans-input"
To upload files and folders, or to configure additional bucket settings, choose **View details**.

View details

Amazon S3 > Buckets

Account snapshot

Storage lens provides visibility into storage usage and activity trends. Learn more

View Storage Lens dashboard

General purpose buckets | Directory buckets

General purpose buckets (1) Info

Buckets are containers for data stored in S3.

Copy ARN | Empty | Delete | Create bucket

Find buckets by name

1

Name	AWS Region	Access	Creation date
s3-trans-input	US East (N. Virginia) us-east-1	Bucket and objects not public	March 25, 2024, 10:07:25 (UTC+05:30)

Successfully created bucket "s3audiooutput"
To upload files and folders, or to configure additional bucket settings, choose **View details**.

View details

Account snapshot

Storage lens provides visibility into storage usage and activity trends. Learn more

View Storage Lens dashboard

General purpose buckets | Directory buckets

General purpose buckets (2) Info

Buckets are containers for data stored in S3.

Copy ARN | Empty | Delete | Create bucket

Find buckets by name

1

Name	AWS Region	Access	Creation date
s3-trans-input	US East (N. Virginia) us-east-1	Bucket and objects not public	March 25, 2024, 10:07:25 (UTC+05:30)
s3audiooutput	US East (N. Virginia) us-east-1	Bucket and objects not public	March 25, 2024, 10:08:29 (UTC+05:30)

Identity and Access Management (IAM)

Search IAM

Dashboard

Access management

User groups

Users

Roles

Policies

Identity providers

Account settings

Access reports

Access Analyzer

External access

Unused access

lambda-trans-role Info

Allows Lambda functions to call AWS services on your behalf.

Delete

Summary

Edit

Creation date
March 21, 2024, 10:21 (UTC+05:30)

ARN
arn:aws:iam::087345368913:role/lambda-trans-role

Last activity
Yesterday

Maximum session duration
1 hour

Permissions | Trust relationships | Tags | Access Advisor | Revoke sessions

Permissions policies (4) Info

You can attach up to 10 managed policies.

Simulate | Remove | Add permissions

Filter by Type

Search | All types

Identity and Access Management (IAM)

Search IAM

Dashboard

Access management
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Access Analyzer
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Permissions | Trust relationships | Tags | Access Advisor | Revoke sessions

Permissions policies (4) Info

You can attach up to 10 managed policies.

Simulate | Remove | Add permissions

Search

Filter by Type: All types

1

Policy name	Type	Attached ent...
AmazonS3FullAccess	AWS managed	6
AmazonTranscribeFullAccess	AWS managed	2
AWSLambda_FullAccess	AWS managed	4
s3-ou-trans	Customer managed	1

Permissions boundary (not set)

Identity and Access Management (IAM)

Search IAM

Dashboard

Access management
User groups
Users
Roles
Policies
Identity providers
Account settings

Access reports
Access Analyzer
External access
Unused access

s3-ou-trans Info

Edit Delete

Policy details

Type	Creation time	Edited time	ARN
Customer managed	March 21, 2024, 10:31 (UTC+05:30)	March 21, 2024, 12:14 (UTC+05:30)	arn:aws:iam::087345368913:policy/s3-ou-trans

Permissions | Entities attached | Tags | Policy versions (3) | Access Advisor

Permissions defined in this policy Info

Copy Edit Summary JSON

Permissions defined in this policy document specify which actions are allowed or denied. To define permissions for an IAM identity (user, user group, or role), attach a policy to it

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Action": [
```

Identity and Access Management (IAM)

Search IAM

Dashboard

Access management
User groups
Users
Roles
Policies
Identity providers
Account settings

Access reports
Access Analyzer
External access
Unused access

Permissions | Entities attached | Tags | Policy versions (3) | Access Advisor

Permissions defined in this policy Info

Copy | Edit | Summary | JSON

Permissions defined in this policy document specify which actions are allowed or denied. To define permissions for an IAM identity (user, user group, or role), attach a policy to it

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Action": [
                "s3:PutObject"
            ],
            "Resource": [
                "arn:aws:s3:::s3audiooutput/*"
            ],
            "Effect": "Allow"
        },
        {
            "Action": [
                "s3:ListBucket"
            ],
            "Resource": [
                "arn:aws:s3:::s3audiooutput"
            ],
            "Effect": "Allow"
```

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.

lambda-trans

Use only letters, numbers, hyphens, or underscores with no spaces.

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 3.8

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.

lambda-trans-role

View the lambda-trans-role role on the IAM console.

Advanced settings

Cancel Create function

Successfully created the function **lambda-trans**. You can now change its code and configuration. To invoke your function with a test event, choose "Test".

lambda-trans

Throttle | Copy ARN | Actions

Function overview Info

Export to Application Composer | Download

Diagram | Template

lambda-trans

Layers (0)

+ Add trigger

+ Add destination

Description
-

Last modified
6 seconds ago

Function ARN
arn:aws:lambda:us-east-1:087345368913:function:lambda-trans

Function URL Info
-

Add trigger

Trigger configuration Info

S3
aws asynchronous storage

Bucket

Choose or enter the ARN of an S3 bucket that serves as the event source. The bucket must be in the same region as the function.

s3/s3-trans-input

Bucket region: us-east-1

Event types

Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.

All object create events

Prefix - *optional*

All object create events

Prefix - *optional*

Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.

e.g. images/

Suffix - *optional*

Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.

e.g. .jpg

Recursive invocation

If your function writes objects to an S3 bucket, ensure that you are using different S3 buckets for input and output. Writing to the same bucket increases the risk of creating a recursive invocation, which can result in increased Lambda usage and increased costs. Learn more

I acknowledge that using the same S3 bucket for both input and output is not recommended and that this configuration can cause recursive invocations, increased Lambda usage, and increased costs.

Lambda will add the necessary permissions for AWS S3 to invoke your Lambda function from this trigger. Learn more about the Lambda permissions model.

Cancel Add

lambda-trans

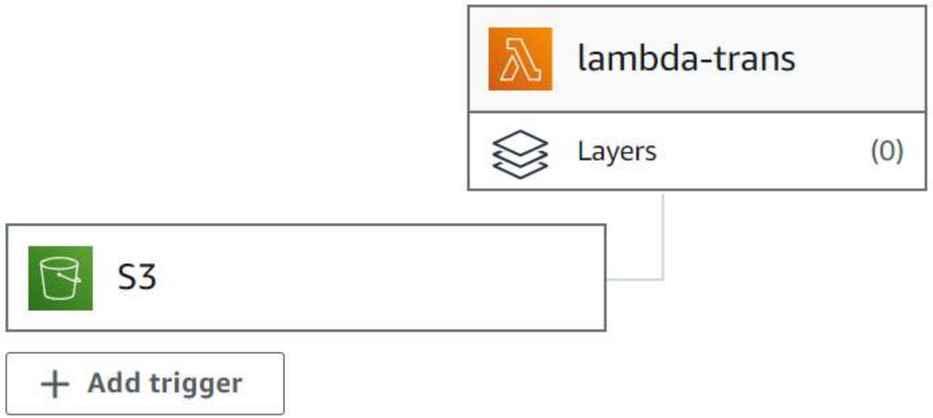
Throttle | Copy ARN | Actions

The trigger s3-trans-input was successfully added to function lambda-trans. The function is now receiving events from the trigger.

Function overview Info

Export to Application Composer | Download

Diagram | Template

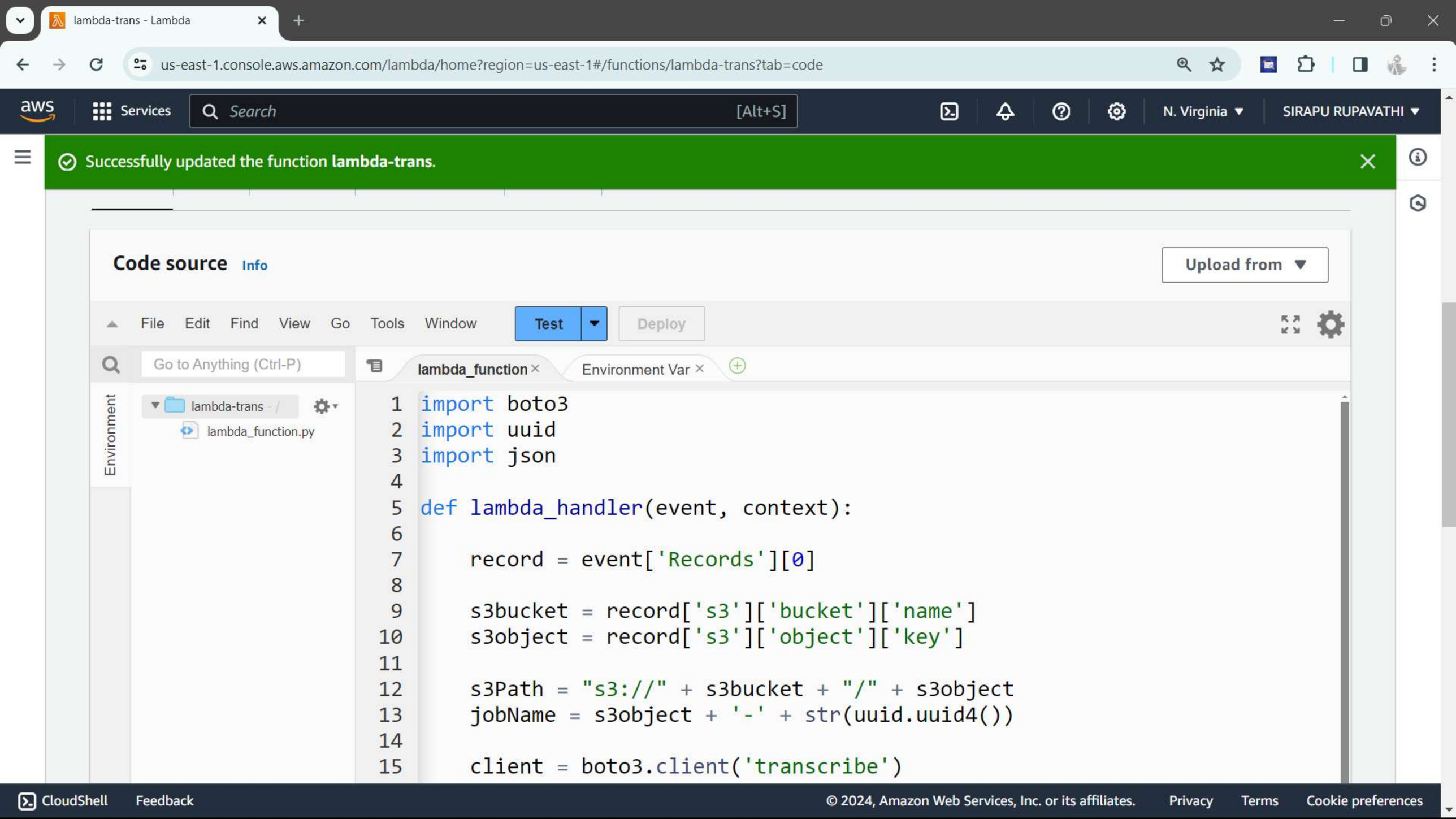


Description
-

Last modified
30 seconds ago

Function ARN
arn:aws:lambda:us-east-1:087345368913:function:lambda-trans

Function URL Info
-


lambda-trans - Lambda
us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/lambda-trans?tab=code
aws
Services
Search
[Alt+S]
N. Virginia
SIRAPU RUPAVATHI
Successfully updated the function lambda-trans.
Code source
Info
Upload from
File
Edit
Find
View
Go
Tools
Window
Test
Deploy
Go to Anything (Ctrl-P)
lambda_function
Environment Var
Environment
lambda-trans
lambda_function.py
1 import boto3
2 import uuid
3 import json
4
5 def lambda_handler(event, context):
6
7 record = event['Records'][0]
8
9 s3bucket = record['s3']['bucket']['name']
10 s3object = record['s3']['object']['key']
11
12 s3Path = "s3://" + s3bucket + "/" + s3object
13 jobName = s3object + '-' + str(uuid.uuid4())
14
15 client = boto3.client('transcribe')
CloudShell
Feedback
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Privacy
Terms
Cookie preferences

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

AWS Marketplace for S3

s3audiooutput Info

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

Objects (0) Info

Copy S3 URI | Copy URL | Download | Open | Delete | Actions | Create folder

Upload

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

Find objects by prefix

1

Name	Type	Last modified	Size	Storage class

No objects

You don't have any objects in this bucket.

Upload

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

AWS Marketplace for S3

No data events to display.

Configure in CloudTrail

Event notifications

Edit | Delete | Create event notification

Send a notification when specific events occur in your bucket. Learn more

Name	Event types	Filters	Destination type	Destination

No event notifications

Choose **Create event notification** to be notified when a specific event occurs.

Create event notification

Amazon EventBridge

Edit

For additional capabilities, use Amazon EventBridge to build event-driven applications at scale using S3 event notifications. Learn more or see EventBridge pricing

Send notifications to Amazon EventBridge for all events in this bucket

Off

Create event notification Info

To enable notifications, you must first add a notification configuration that identifies the events you want Amazon S3 to publish and the destinations where you want Amazon S3 to send the notifications.

General configuration

Event name

trans

Event name can contain up to 255 characters.

Prefix - *optional*

Limit the notifications to objects with key starting with specified characters.

images/

Suffix - *optional*

Limit the notifications to objects with key ending with specified characters.

.jpg

Event types

Specify at least one event for which you want to receive notifications. For each group, you can choose an event type for all events, or you can choose one or more individual events.

Event types

Specify at least one event for which you want to receive notifications. For each group, you can choose an event type for all events, or you can choose one or more individual events.

Object creation

- [x] All object create events
  s3:ObjectCreated:*
- [ ] Put
  s3:ObjectCreated:Put
- [ ] Post
  s3:ObjectCreated:Post
- [ ] Copy
  s3:ObjectCreated:Copy
- [ ] Multipart upload completed
  s3:ObjectCreated:CompleteMultipartUpload

Object removal

- [ ] All object removal events
  s3:ObjectRemoved:*
- [ ] Permanently deleted
  s3:ObjectRemoved:Delete
- [ ] Delete marker created
  s3:ObjectRemoved:DeleteMarkerCreated

Object restore

Destination

Before Amazon S3 can publish messages to a destination, you must grant the Amazon S3 principal the necessary permissions to call the relevant API to publish messages to an SNS topic, an SQS queue, or a Lambda function. Learn more

Destination

Choose a destination to publish the event. Learn more

- (•) Lambda function
  Run a Lambda function script based on S3 events.
- ( ) SNS topic
  Fanout messages to systems for parallel processing or directly to people.
- ( ) SQS queue
  Send notifications to an SQS queue to be read by a server.

Specify Lambda function

- (•) Choose from your Lambda functions
- ( ) Enter Lambda function ARN

Lambda function

lambda-trans

Cancel Save changes

Successfully created event notification "trans".
Operation successfully completed.

s3audiooutput Info

Bucket overview

AWS Region	Amazon Resource Name (ARN)	Creation date
US East (N. Virginia) us-east-1	arn:aws:s3:::s3audiooutput	March 25, 2024, 10:08:29 (UTC+05:30)

Bucket Versioning

Edit

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. Learn more

Bucket Versioning

Disabled

Multi-factor authentication (MFA) delete

An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the

File Edit Selection View Go Run Terminal Help

SampleProject

EXPLORER

OPEN EDITORS

SAMPLEPROJECT

- node_modules
- templates
  - home.html
  - index.html
- home.py

Welcome | home.html | home.py | index.html

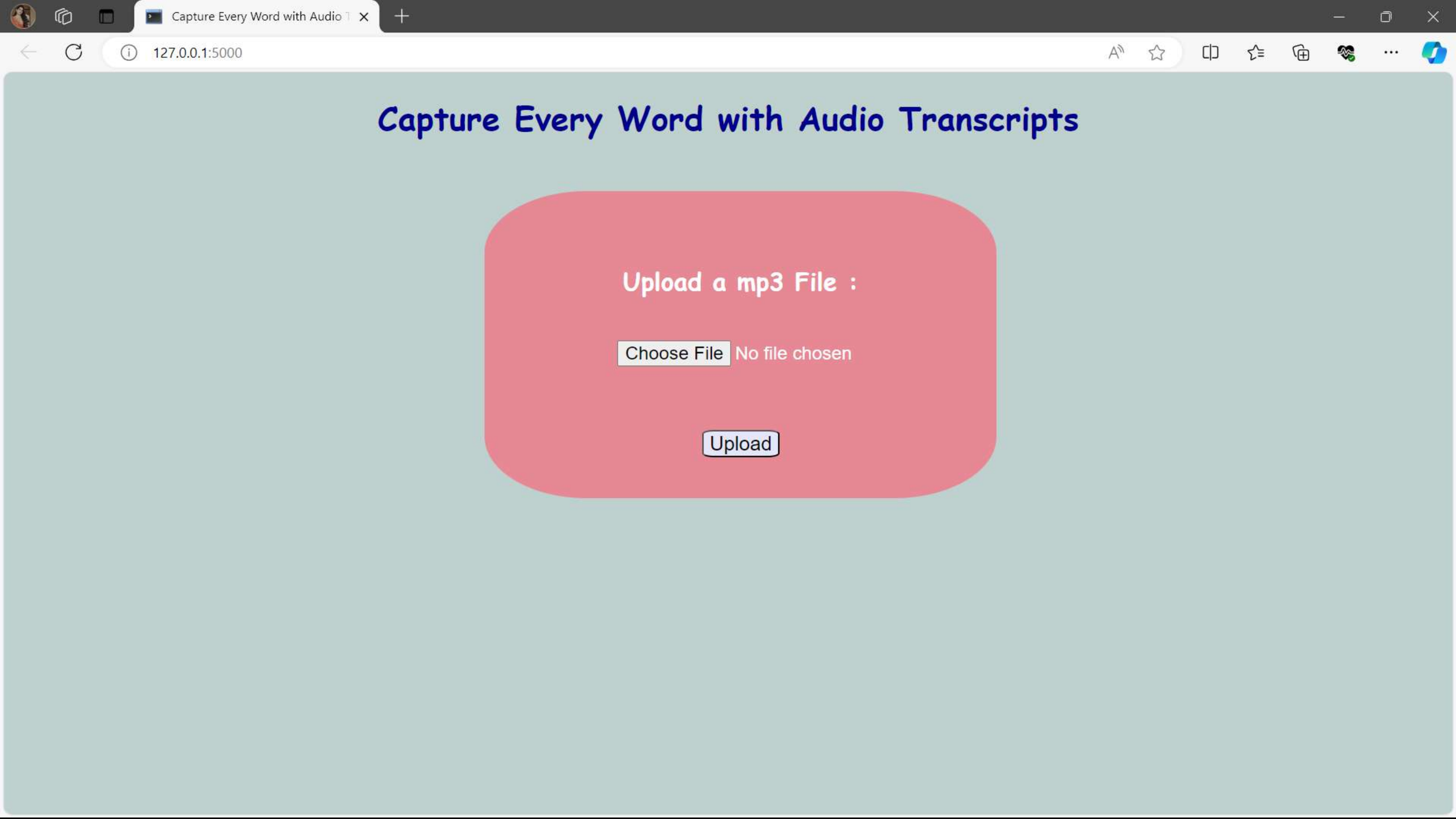
home.py

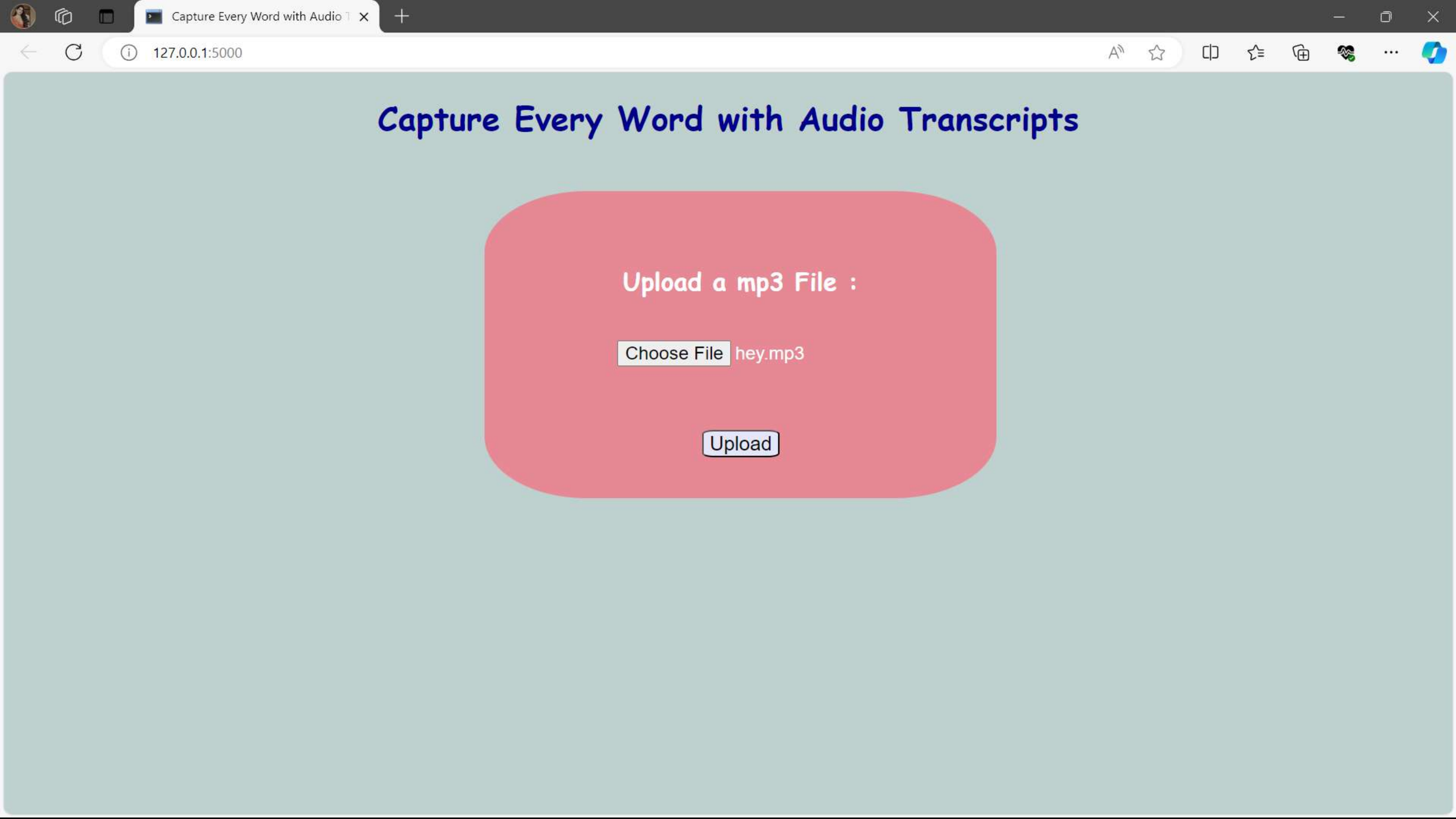
```python
from flask import Flask, request, render_template
import boto3
import os
import json

app = Flask(__name__)

# AWS credentials
AWS_ACCESS_KEY_ID =
AWS_SECRET_ACCESS_KEY =
AWS_REGION = 'us-east-1'
S3_BUCKET_NAME = 's3-trans-input'

# Initialize S3 client
s3 = boto3.client('s3',aws_access_key_id=AWS_ACCESS_KEY_ID,aws_secret_access_key=AWS_SECRET_AC

@app.route('/')
def index():
    return render_template('home.html')

@app.route('/upload', methods=['POST'])
def upload():
    if 'file' not in request.files:
        return 'No file part'
```

OUTLINE

TIMELINE

0 0 0 Ln 28, Col 26 Spaces: 4 UTF-8 CRLF Python Go Live Prettier


Capture Every Word with Audio
127.0.0.1:5000
Capture Every Word with Audio Transcripts
Upload a mp3 File :
Choose File
No file chosen
Upload


Capture Every Word with Audio
127.0.0.1:5000
Capture Every Word with Audio Transcripts
Upload a mp3 File :
Choose File
hey.mp3
Upload

127.0.0.1:5000/upload

File uploaded Successfully

s3-trans-input Info

Objects (1) Info

Copy S3 URI | Copy URL | Download | Open | Delete | Actions | Create folder | Upload

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

Find objects by prefix

1

Name	Type	Last modified	Size	Storage class
hey.mp3	mp3	March 25, 2024, 10:17:59 (UTC+05:30)	32.6 KB	Standard

Amazon Transcribe

Get started
Real-time transcription
Transcription jobs
Custom language model
Custom vocabulary
Vocabulary filtering

Amazon Transcribe Call Analytics

Real-time Analytics
Post-call Analytics
Category Management

Amazon Transcribe Medical

Real-time transcription
Transcription jobs
Custom vocabulary

Amazon Transcribe > Transcription jobs

Transcription jobs (61) Info

Download | Copy | Delete | Create job

Find job names | Status: Complete

1 2

Name	Status	Language	Language set
hey.mp3-adb07dac-d70c-43bf-821d-e45ad0c76876	Complete	English, US (en-US)	Specific langu
SampleAudio.wav-f59b315d-a554-463c-b092-ac82b342ae63	Complete	English, US (en-US)	Specific langu
hey.mp3-d58eed02-bf67-47e1-a483-1346c0683979	Complete	English, US (en-US)	Specific langu
hey.mp3-bf4674b1-8a24-41ce-b83f-a000bdc8f9a1	Complete	English, US (en-US)	Specific langu
hey.mp3-0f687207-c32e-43e1-95c7-d47aab501652	Complete	English, US (en-US)	Specific langu
hey.mp3-a3a4f923-abe0-4a69-87b2-9116ff04c009	Complete	English, US (en-US)	Specific langu
hey.mp3-f56681e2-4486-4c1c-aa3c-b349fe89c57a	Complete	English, US (en-US)	Specific langu
hey.mp3-79b72dc8-b464-42e6-8186-45fcaf937725	Complete	English, US (en-US)	Specific langu
hey.mp3-0eb2ea62-d667-45fc-98a5-821582edcccc	Complete	English, US (en-US)	Specific langu

s3audiooutput Info

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

Objects (2) Info

Copy S3 URI | Copy URL | Download | Open | Delete | Actions | Create folder | Upload

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

Find objects by prefix

1

Name	Type	Last modified	Size	Storage class
.write_access_check_file.temp	temp	March 25, 2024, 10:18:16 (UTC+05:30)	2.0 B	Standard
hey.mp3-adb07dac-d70c-43bf-821d-e45ad0c76876.json	json	March 25, 2024, 10:18:11 (UTC+05:30)	691.0 B	Standard

THANK YOU