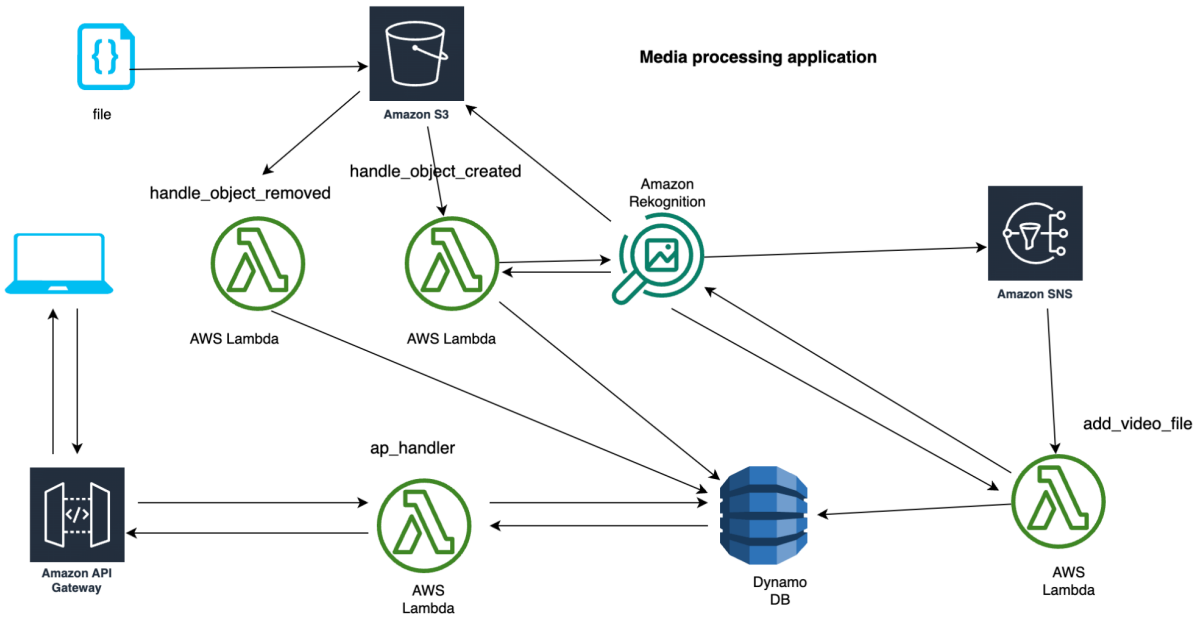
CMPE 281
Enterprise software platform
Homework #4 Serverless Framework

Media processing serverless Application

Media processing application that allows us to analyze images and videos to detect real world objects in media files. The results of the analysis can then be quierried through the REST API.

Architecture Diagram:



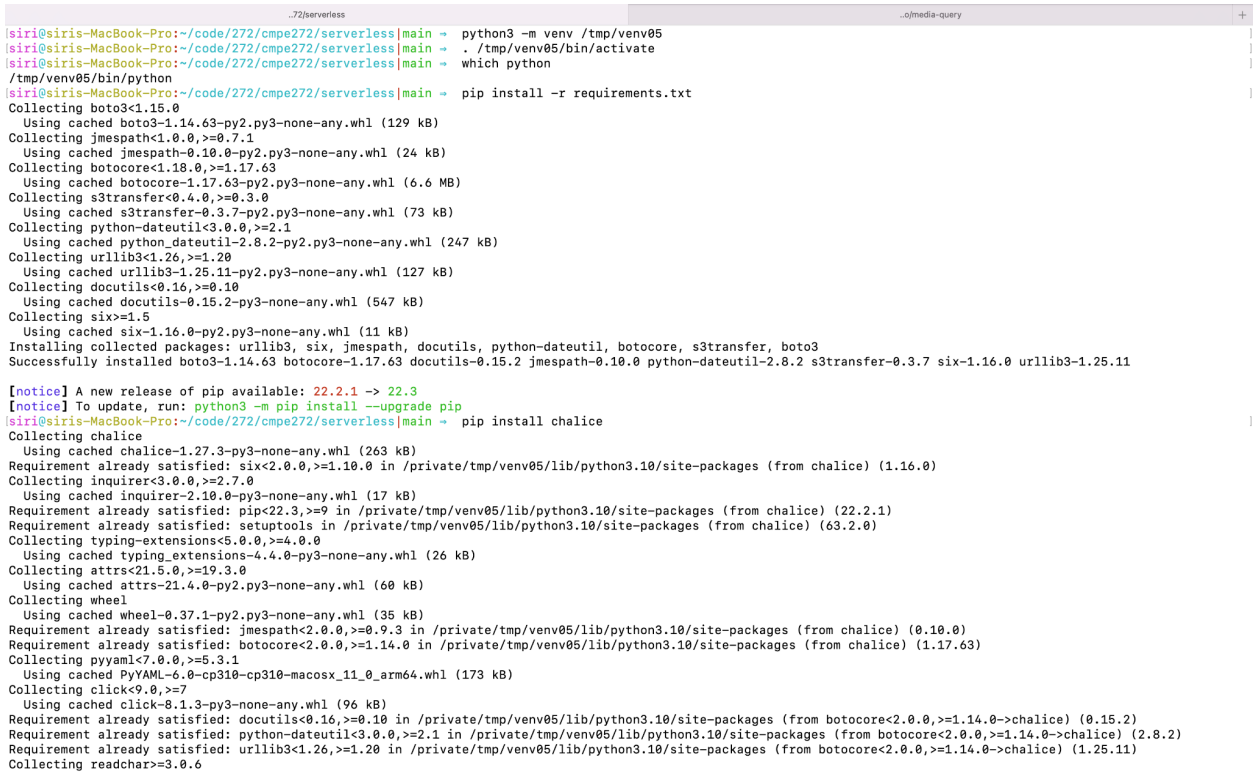
For the image processing once we upload image in s3 bucket lambda function will invoke and image will be processed using amazon rekognition once it's done add image lambda function will store labels date from amazon recognition into dynamo DB.

For the video processing once we upload a video file into s3 bucket lambda function will invoke and video will be processed using amazon rekognition then one message notification will be triggered in SNS. Once it's done, the video lambda function will store labels from amazon rekognition into dynamo DB .

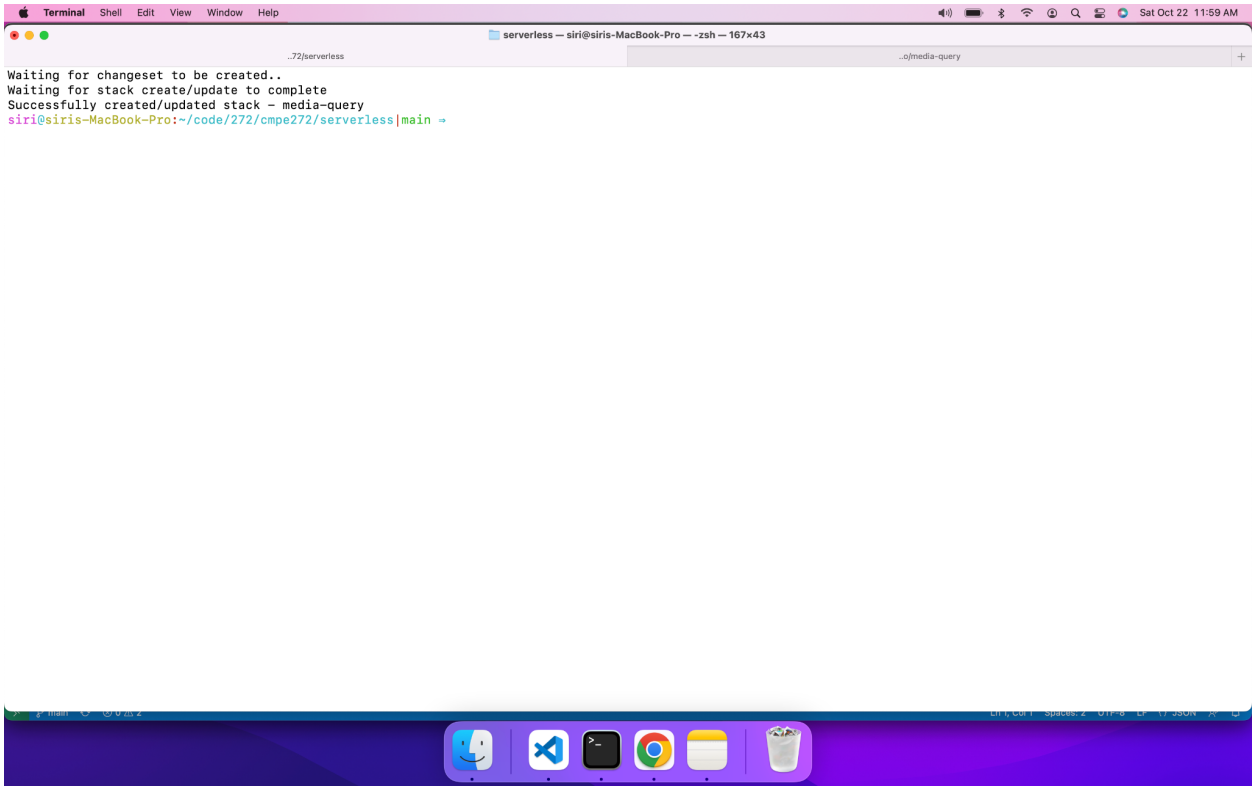
App handler lambda function is invoked via api gateway which queries data stored in dynamo DB and responds to users with data about labels that are created from media processing.

- First we need to clone the application I have developed. https://github.com/sirishacyd/cmpe272

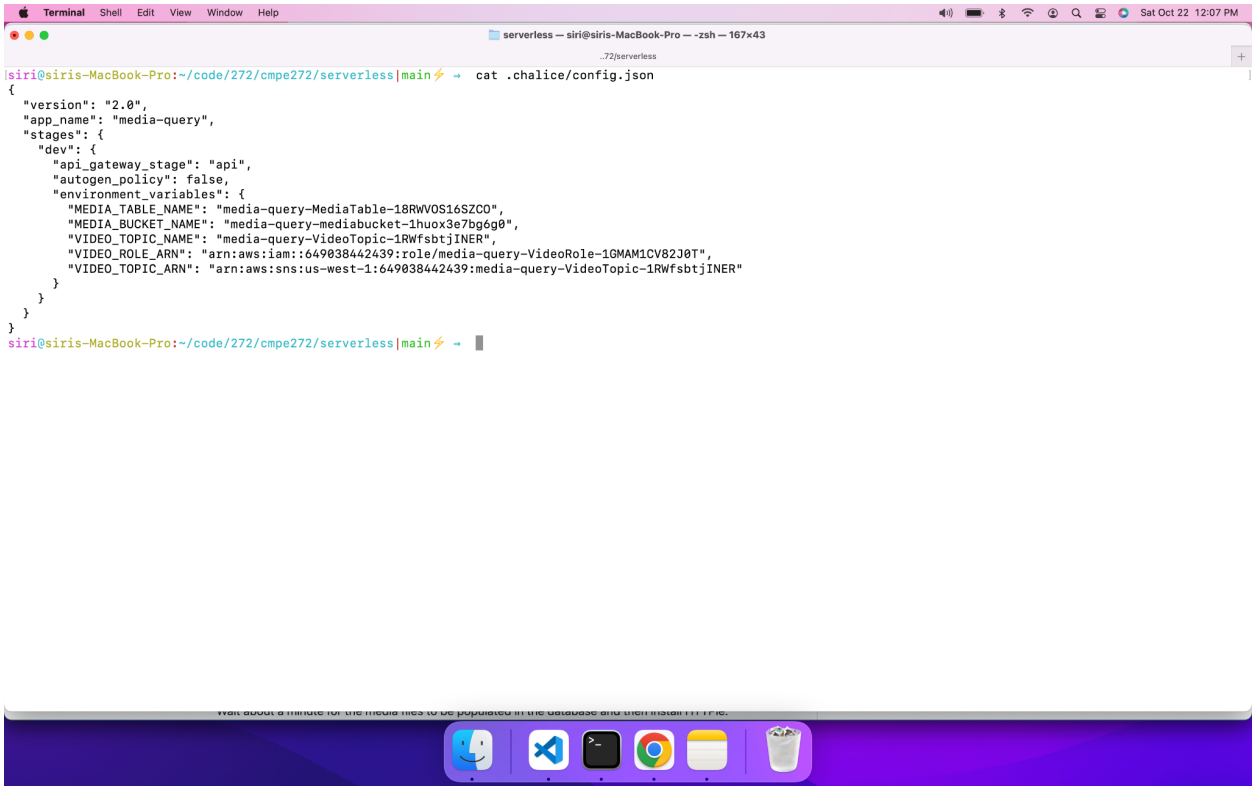
- **Created & activated a virtual environmen**t for application. Installed dependencies and **chalice** libraries.



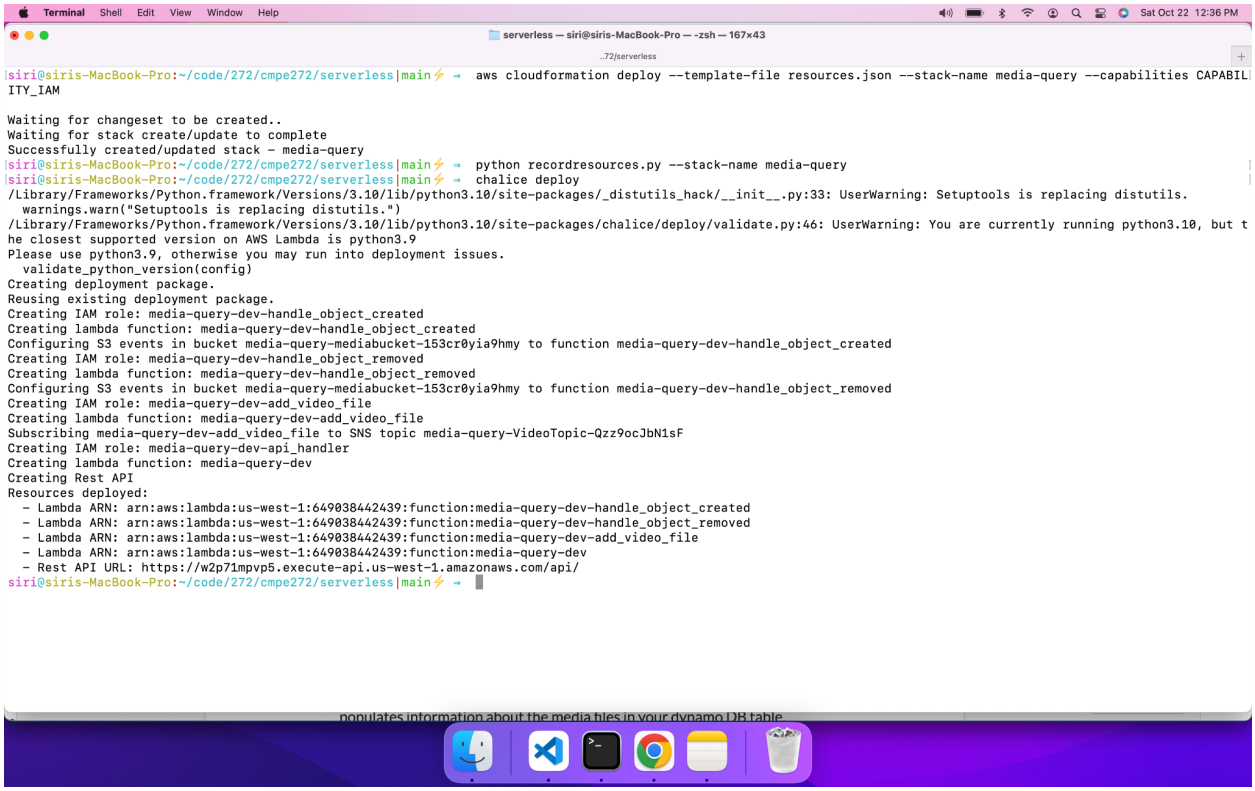
- AWS CLI to deploy a CloudFormation stack containing the S3 bucket,DynamoDB table, and SNS topic needed to run this application.



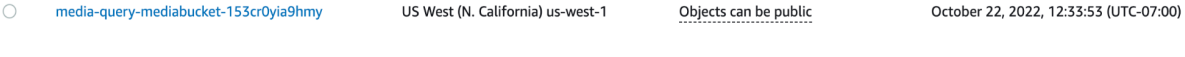
- Execute recordresource.py to create config.json file which can be used to deploy the lambda functions.

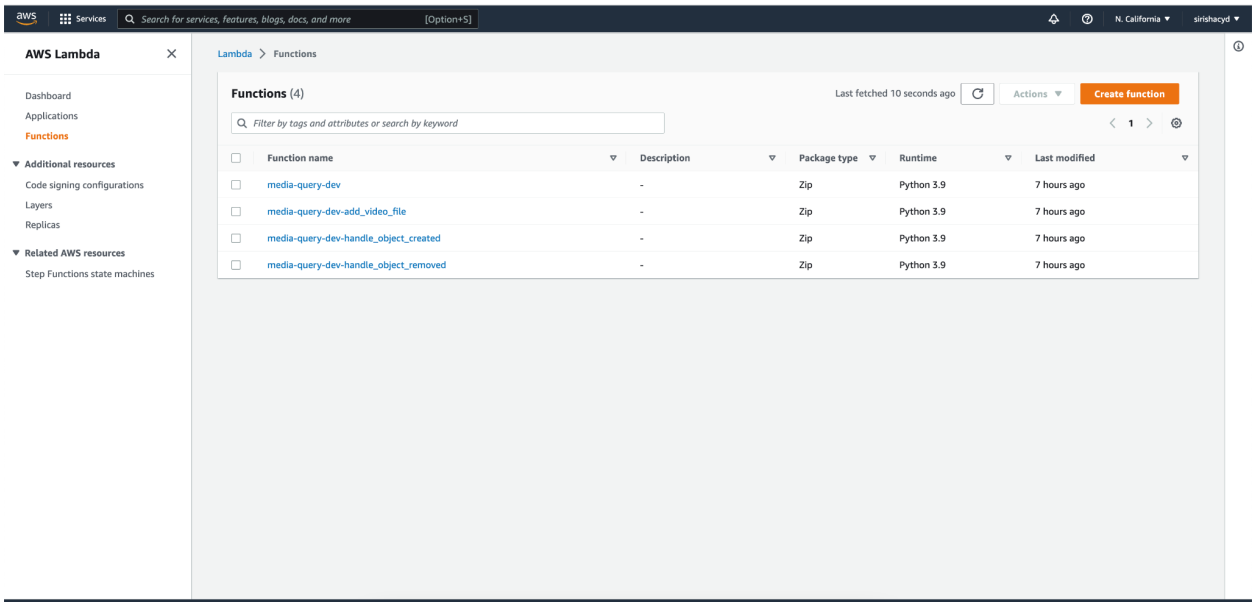


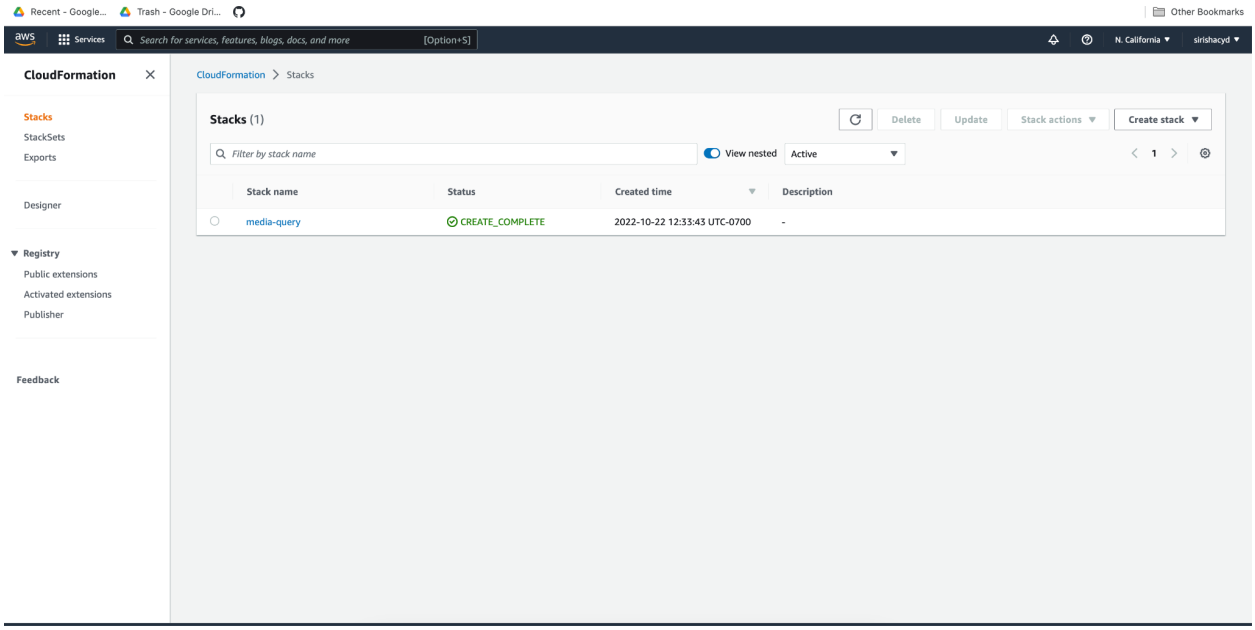
- Chalice deploy to deploy a lambda function.

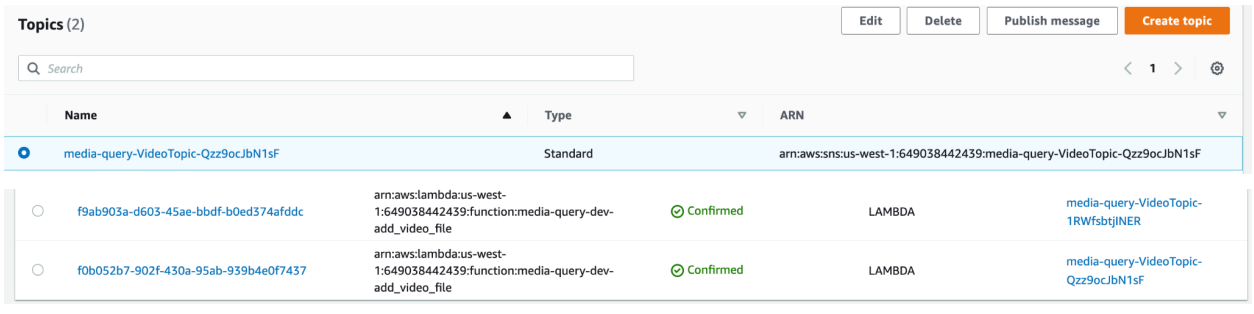


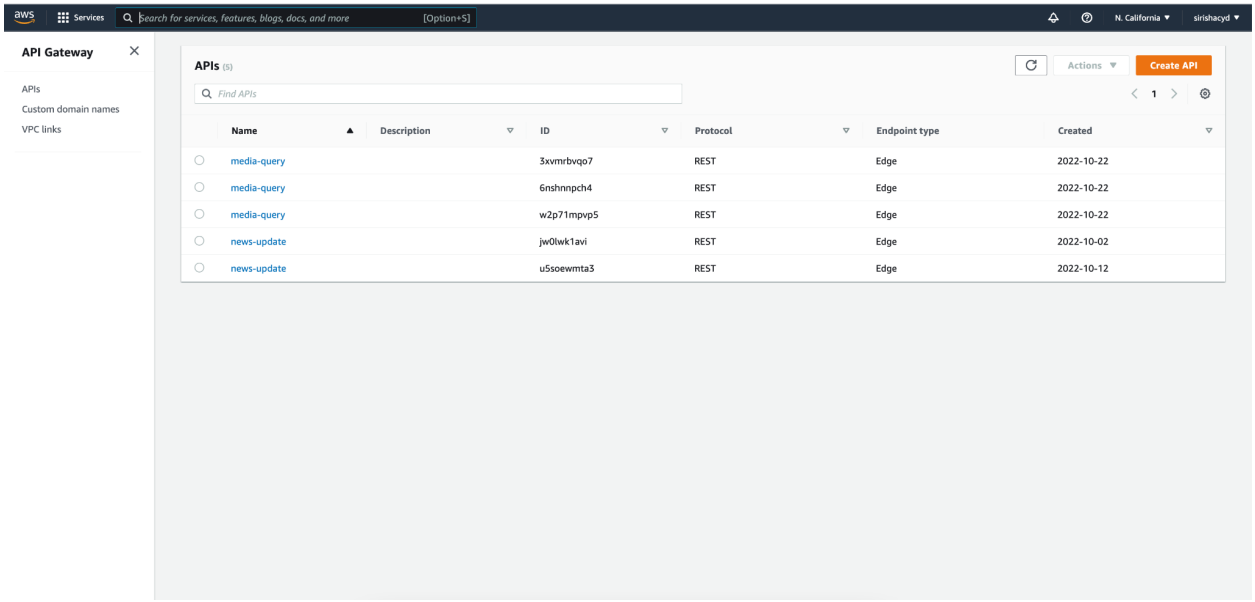
- S3 buckets lambda function ,SNS, API gateway details in the console.




Services
Search for services, features, blogs, docs, and more [Option+S]
N. California
sirishacyd
AWS Lambda
Dashboard
Applications
Functions
Additional resources
Code signing configurations
Layers
Replicas
Related AWS resources
Step Functions state machines
Lambda > Functions
Functions (4)
Last fetched 10 seconds ago
Actions
Create function
Filter by tags and attributes or search by keyword
Function name
Description
Package type
Runtime
Last modified
media-query-dev - Zip Python 3.9 7 hours ago
media-query-dev-add_video_file - Zip Python 3.9 7 hours ago
media-query-dev-handle_object_created - Zip Python 3.9 7 hours ago
media-query-dev-handle_object_removed - Zip Python 3.9 7 hours ago


Recent - Google...
Trash - Google Dri...
Other Bookmarks
Services
Search for services, features, blogs, docs, and more [Option+S]
N. California
sirishacyd
CloudFormation
Stacks
StackSets
Exports
Designer
Registry
Public extensions
Activated extensions
Publisher
Feedback
CloudFormation > Stacks
Stacks (1)
Delete
Update
Stack actions
Create stack
Filter by stack name
View nested
Active
Stack name
Status
Created time
Description
media-query CREATE_COMPLETE 2022-10-22 12:33:43 UTC-0700 -


Topics (2)
Edit
Delete
Publish message
Create topic
Search
Name
Type
ARN
media-query-VideoTopic-Qzz9ocJbN1sF Standard arn:aws:sns:us-west-1:649038442439:media-query-VideoTopic-Qzz9ocJbN1sF
f9ab903a-d603-45ae-bbdf-b0ed374afddc arn:aws:lambda:us-west-1:649038442439:function:media-query-dev-add_video_file Confirmed LAMBDA media-query-VideoTopic-1RWfsbtjINER
f0b052b7-902f-430a-95ab-939b4e0f7437 arn:aws:lambda:us-west-1:649038442439:function:media-query-dev-add_video_file Confirmed LAMBDA media-query-VideoTopic-Qzz9ocJbN1sF

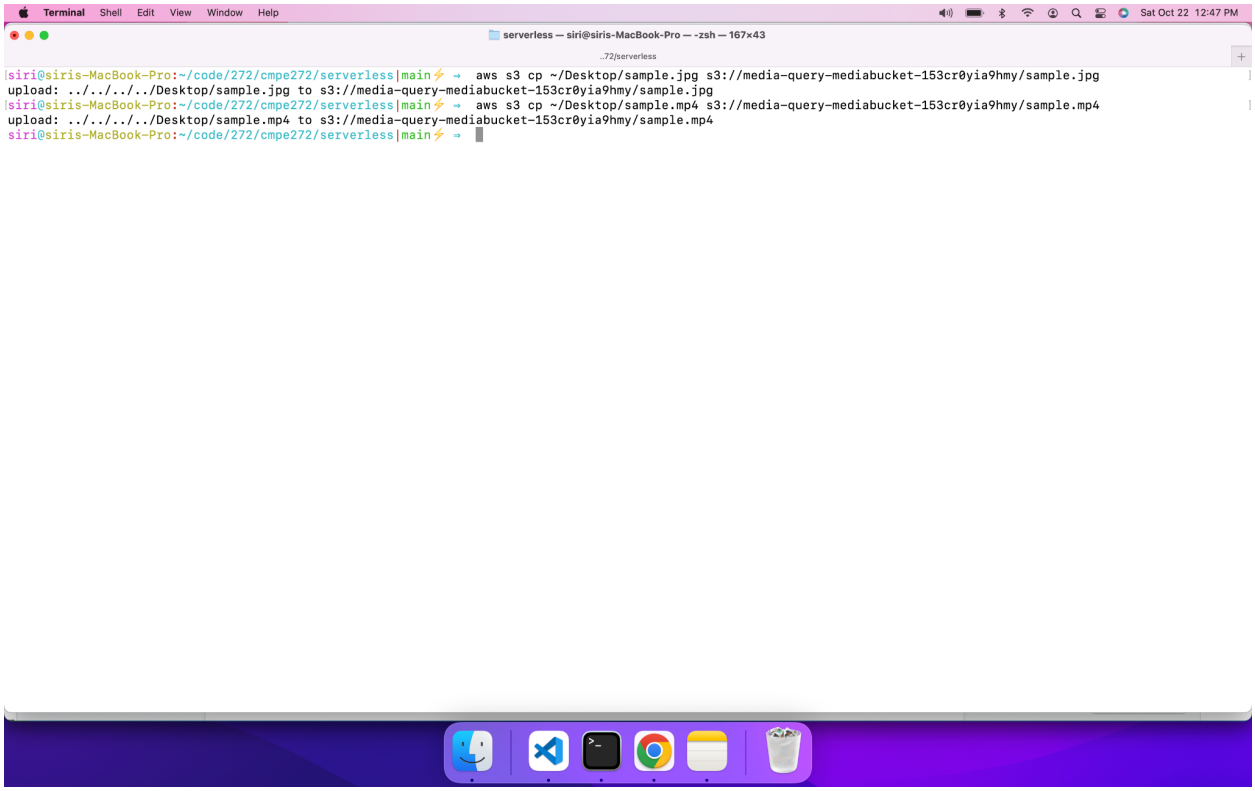


- Use the below command to see the bucket name.

```
siri@siris-MacBook-Pro:~/code/272/cmpe272/serverless|main⚡ ⇒  aws cloudformation describe-stacks --stack-name media-query \
    --query "Stacks[0].Outputs[?OutputKey=='MediaBucketName'].OutputValue" \
    --output text
```


```
media-query-mediabucket-153cr0yia9hmy
(END)
```

- Upload sample files to do the media processing.



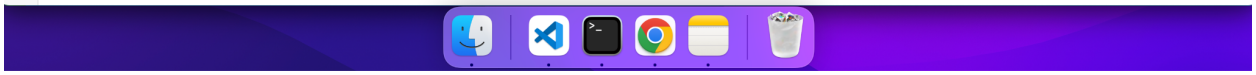
- Open the lambda function using https URL.
- https://w2p71mpvp5.execute-api.us-west-1.amazonaws.com/api?media-type=image
- https://w2p71mpvp5.execute-api.us-west-1.amazonaws.com/api?media-type=video
- https://w2p71mpvp5.execute-api.us-west-1.amazonaws.com/api?startswith=sam
- https://w2p71mpvp5.execute-api.us-west-1.amazonaws.com/api?label=Person

https://w2p71mpvp5.execute-api.us-west-1.amazonaws.com/api

Recent - Google... Trash - Google Dri... Other Bookmarks


```
// 20221022125230
// https://w2p71mpvp5.execute-api.us-west-1.amazonaws.com/api

[
  {
    "name": "sample.jpg",
    "labels": [
      "Dog",
      "Mammal",
      "Animal",
      "Pet",
      "Canine",
      "Outdoors",
      "Nature",
      "Ice",
      "Snow",
      "Adventure",
      "Leisure Activities",
      "Tree",
      "Plant",
      "Fir",
      "Abies",
      "Strap",
      "Mountain"
    ],
    "type": "image"
  },
  {
    "name": "sample.mp4",
    "labels": [
      "Yard",
      "Puppy",
      "Skirt",
      "Chihuahua",
```

https://w2p71mpvp5.execute-api.us-west-1.amazonaws.com/api?startswith=sample.m

Recent - Google... Trash - Google Dri... Other Bookmarks


```
// 20221022125459
// https://w2p71mpvp5.execute-api.us-west-1.amazonaws.com/api?startswith=sample.m

[
  {
    "name": "sample.mp4",
    "labels": [
      "Yard",
      "Puppy",
      "Skirt",
      "Chihuahua",
      "Hound",
      "Female",
      "Wildlife",
      "Labrador Retriever",
      "Grass",
      "Animal",
      "Fence",
      "Nature",
      "Portrait",
      "Photo",
      "Human",
      "Girl",
      "Strap",
      "Person",
      "Pants",
      "Photography",
      "Jacket",
      "Coyote",
      "Clothing",
      "Sheep",
      "Tire",
      "Husky",
      "Mammal",
```


- Delete chalice, s3 bucket and cloud formation stack.