4.Create a scalable serverless architecture to detect objects from the images immediately after being uploaded to a GCS bucket. The extracted information about the objects should be logged [optional: stored to datastore database]. The designed architecture should also have error handling

```
from google.cloud import vision
def hello_gcs(event, context):
''' This function is used to identify the objects in the image that is uploaded to the bucket
'''
    try:
        file = event #Put the JSON string into variable file
        print(f"Processing file: {file['name']}.")
        path="gs://"+file['bucket'] +"/"+ file['name'] #From the JSON obtain the name of
                                                        #bucket and file
        print(path)

        client = vision.ImageAnnotatorClient()
        image = vision.types.Image()
        image.source.image_uri = path

        objects = client.object_localization(
            image=image).localized_object_annotations
    '''
        From the below code we use Vision API to obtain the different objects in the
        image
    '''
        print('Number of objects found: {}'.format(len(objects)))
        for object_ in objects:
            print('\n{} (confidence: {})'.format(object_.name, object_.score))
            print('Normalized bounding polygon vertices: ')
            for vertex in object_.bounding_poly.normalized_vertices:
                print(' - ({}, {})'.format(vertex.x, vertex.y))
    except Exception as e:
        print("Error")
        raise e
```

Output:-

Screenshot 1

≡ Google Cloud Platform ⋮ Training ▾   🔍 [search]   ▾ ⊞ 🖼 💬 ❓ 🔔 ⋮ 👤

Stackdriver
Logging

📊 CREATE METRIC   ⬆ CREATE EXPORT   ↻   ▶

≡ Logs Viewer

📊 Logs-based metrics

⬆ Exports

🖼 Logs ingestion

Filter by label or text search   ▾ ❓

Cloud Function, austin-object-detect, us-centr... ▾   All logs ▾   Any log level ▾   🕐 Last hour ▾   Jump to now ▾

Showing logs from the last hour ending at 11:15 AM (IST)   Download logs View Options ▾

▸ λ 2019-06-24 11:15:30.399 IST austin-object-detect 595030758897417 Function execution started   ⋮
▸ ℹ 2019-06-24 11:15:30.402 IST austin-object-detect 595030758897417 Processing file: cat-dog.jep.   ⋮
▸ ℹ 2019-06-24 11:15:30.402 IST austin-object-detect 595030758897417 gs://austin-object-detect/cat-dog.j... 📌 ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 Number of objects found: 2   ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 {"insertId":"000001-0401016f-8bd2-4c20... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 Dog (confidence: 0.9706438779830933)   ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 Normalized bounding polygon vertices: ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.05903004854917526, 0.227867960929... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.984264075756073, 0.22786796092987... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.984264075756073, 0.77213203907012... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.05903004854917526, 0.772132039070... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 {"insertId":"000008-0401016f-8bd2-4c20... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 Cat (confidence: 0.6922953724861145)   ⋮

📄 cat-dog.jep   ^   🖼 cat-dog.webp   ^   🖼 puppy-dog.jpg   ^   Show all ✕

Screenshot 2

≡ Google Cloud Platform ⋮ Training ▾   🔍 [search]   ▾ ⊞ 🖼 💬 ❓ 🔔 ⋮ 👤

Stackdriver
Logging

📊 CREATE METRIC   ⬆ CREATE EXPORT   ↻   ▶

≡ Logs Viewer

📊 Logs-based metrics

⬆ Exports

🖼 Logs ingestion

Filter by label or text search   ▾ ❓

Cloud Function, austin-object-detect, us-centr... ▾   All logs ▾   Any log level ▾   🕐 Last hour ▾   Jump to now ▾

Showing logs from the last hour ending at 11:15 AM (IST)   Download logs View Options ▾

▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.05903004854917526, 0.227867960929... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.984264075756073, 0.22786796092987... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.984264075756073, 0.77213203907... 📌 ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.05903004854917526, 0.772132039070... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 {"insertId":"000008-0401016f-8bd2-4c20... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 Cat (confidence: 0.6922953724861145)   ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 Normalized bounding polygon vertices: ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.5079855918884277, 0.5041692852973... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.9995437860488892, 0.5041692852973... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.9995437860488892, 0.8160660862922... ⋮
▸ ℹ 2019-06-24 11:15:30.946 IST austin-object-detect 595030758897417 - (0.5079855918884277, 0.8160660862922... ⋮
▸ λ 2019-06-24 11:15:30.949 IST austin-object-detect 595030758897417 Function execution took 551 ms, finish... ⋮

⬆   No newer entries found matching current filter. Load newer logs   ⬆

📄 cat-dog.jep   ^   🖼 cat-dog.webp   ^   🖼 puppy-dog.jpg   ^   Show all ✕

Storage

Browser

Transfer

Transfer Appliance

Settings

← Object details   ⬇ DOWNLOAD   ⠒⠒ EDIT PERMISSIONS   🗑 DELETE

Buckets / austin-object-detect / cat-dog.jep

Access	Not public
Type	application/octet-stream
Size	29.71 KB
Created	June 24, 2019 at 11:15:29 AM UTC+5:30
Last modified	June 24, 2019 at 11:15:29 AM UTC+5:30
URI	gs://austin-object-detect/cat-dog.jep ⧉
Link URL	https://storage.cloud.google.com/austin-object-detect/cat-dog.jep

| cat-dog.jep | ^ | cat-dog.jep | ^ | ■ cat-dog.webp | ^ | ■ puppy-dog.jpg | ^ | | Show all | × |