Q4.

1. Create GCP storage bucket

Open the Cloud Storage browser in the Google Cloud Platform Console.

Click Create bucket to open the bucket creation form.

Enter your bucket information and click Continue to complete each step:

Specify a Name, subject to the bucket name requirements.

Click on Create

2. Create Cloud Function

Open the Cloud Functions Overview page in the GCP Console:

Make sure that the project for which you enabled Cloud Functions is selected.

Click Create function.

Name your function.

In the Trigger field, select Clud Storage Trigger.
Select Finalise/Create and Enter The bucket name.

In the Source code field, select Inline editor.

Use the Runtime dropdown to select a runtime.(python)

Add Python code in main.py for object detection and Required packages in Requirements.txt

Deploy the function:

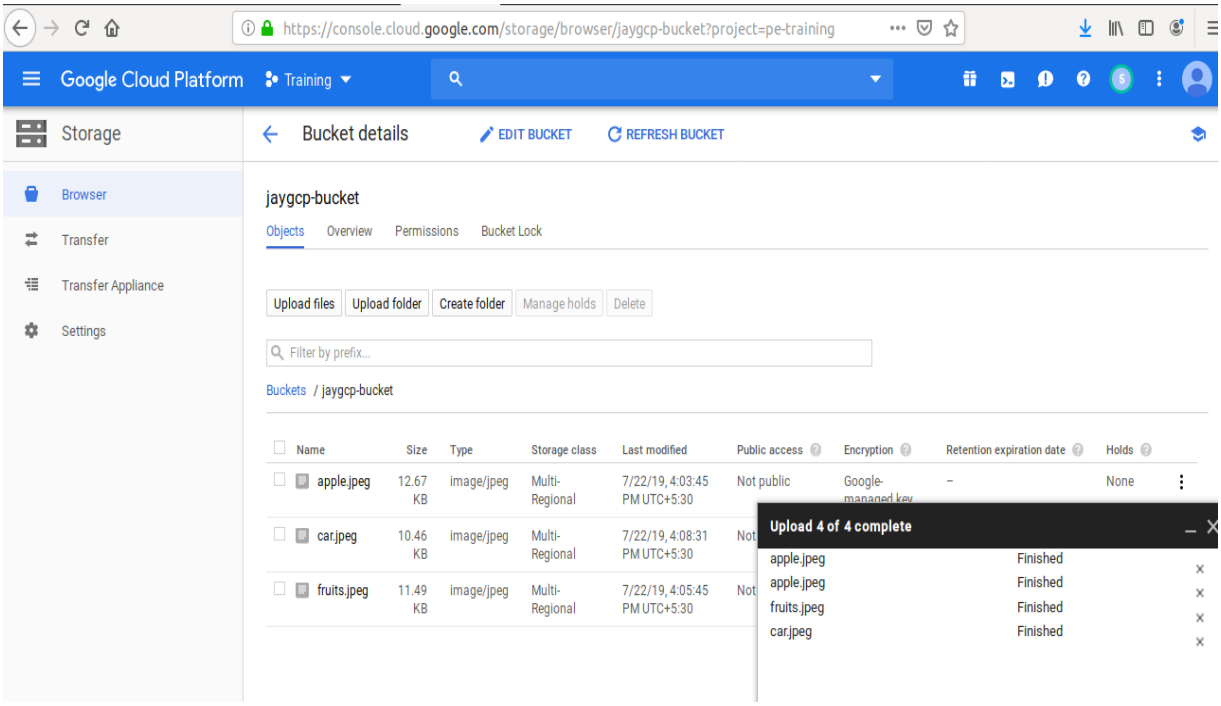
At the bottom of the page, click Create.

main.py requirements.txt

```python
class FileNotAnImageException(Exception):
    def __init__(self,message):
        super(FileNotAnImageException,self).__init__(message)
def detect_object(data, context):
    try:
        from google.cloud import storage, vision, datastore
        #from wand.image import Image
        storage_client = storage.Client()
        dsclient = datastore.Client()
        client = vision.ImageAnnotatorClient()
        file_data = data
        file_name = file_data['name']
        bucket_name = file_data['bucket']
        blob = storage_client.bucket(bucket_name).get_blob(file_name)
        blob_uri = f'gs://{bucket_name}/{file_name}'
        print(blob_uri)
        image = vision.types.Image()
        image.source.image_uri=blob_uri
        objects = client.object_localization(image=image).localized_object_annotations
        print('Number of objects found: {}'.format(len(objects)))
        for object_ in objects:
            print('\n{} (confidence: {})'.format(object_.name, object_.score))
            incomplete_key=dsclient.key('Task')
            task=datastore.Entity(key=incomplete_key)
            task.update({
                'object' : object_.name,
                'confidence': object_.score
            })
            dsclient.put(task)
    except FileNotAnImageException as fnaie:
        print(fnaie)
    except Exception as e:
        print(e)
```

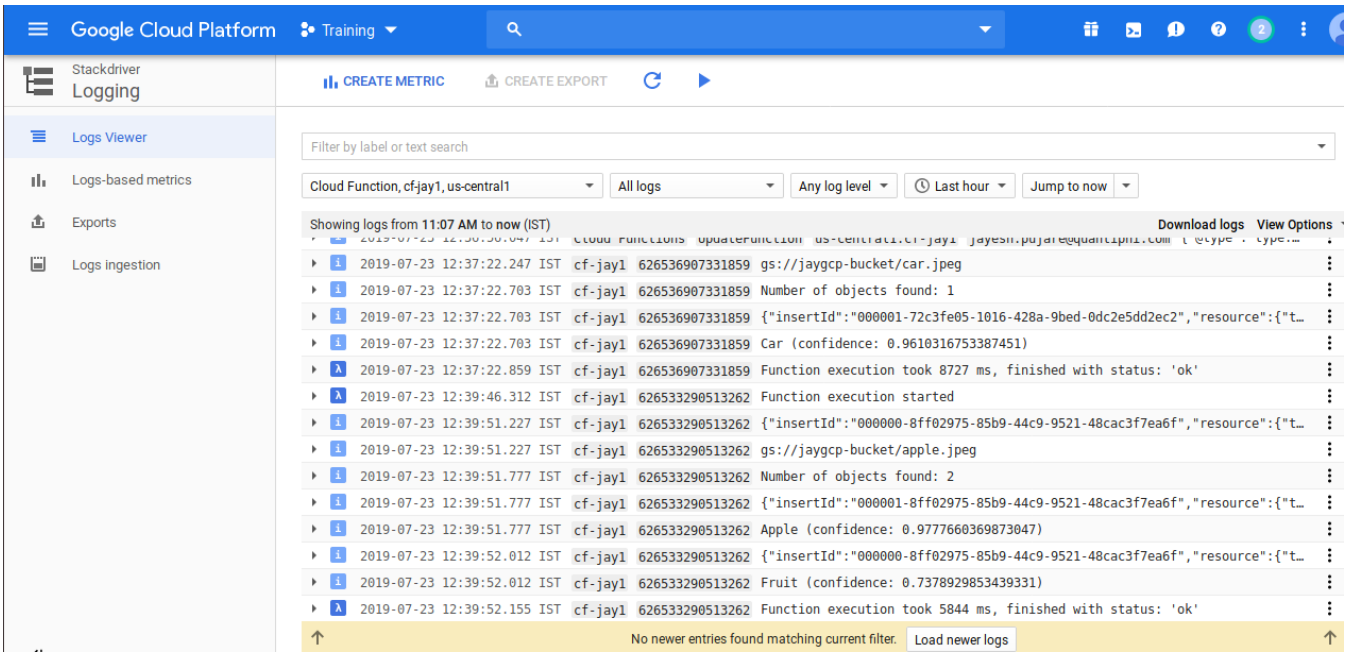
Close

3. Upload a image file in Bucket then It will trigger function and detect objects.



4.View logs

Back on the Cloud Functions Overview page, display the menu for your function, and click View logs.



5.In Datstore