Challenge #1

A 3-tier environment is a common setup. Use a tool of your choosing/familiarity create these

resources on a cloud environment (Azure/AWS/GCP). Please remember we will not be judged

on the outcome but more focusing on the approach, style and reproducibility.

--->Prerequisites:

1.A Google Cloud Platform (GCP) account.

2.Google Cloud SDK (gcloud) installed and configured.

3.Basic knowledge of GCP services.

Approach:

Step 1: Define Infrastructure as Code (IaC) TerraformConfiguration

**Presentation Tier**: Use Google Cloud's Compute Engine for the presentation tier. Create a managed instance group behind a load balancer using TF.

resource "google\_compute\_instance\_template" "presentation\_template" {

// Define instance properties

}

resource "google\_compute\_instance\_group\_manager" "presentation\_instance\_group" {

// Define instance group properties

}

resource "google\_compute\_backend\_service" "presentation\_backend\_service" {

// Define backend service properties

}

resource "google\_compute\_url\_map" "presentation\_url\_map" {

// Define URL map properties

}

resource "google\_compute\_target\_http\_proxy" "presentation\_http\_proxy" {

// Define HTTP proxy properties

}

**Application Tier**: Use Google App Engine for the application tier. Specify your application configuration, deployment settings, and scaling policies.

// For App Engine:

resource "google\_app\_engine\_standard\_app\_version" "app\_version" {

// Define App Engine settings

}

**Data Tier**: Use Google Cloud SQL for the data tier. Define the database instance, schema, and access control.

// For Cloud SQL:

resource "google\_sql\_database\_instance" "database\_instance" {

// Define Cloud SQL settings

}

resource "google\_sql\_database" "database" {

// Define database schema and access control

}

Step 2: Deploy the Infrastructure

Run terraform init and terraform apply for each of the three configurations to provision the infrastructure.

Step 3: Configure Communication Between Tiers

Set up the necessary firewall rules, network routes, and IAM roles to allow communication between the tiers.

Step 4: Application Deployment

Deploy your application code to the App Engine .

**Not able to complete challenge 2 and 3 as I don’t have scripting Knowledge**

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