8. Create an auto scaling instance group that hosts the apache server that displays the name of the instance that has served the current request to the user. Stress the Autoscaling group artificially using the stress tool (sudo apt-get install stress) and demonstrate the group being autoscaled. Use cli/client library

1. Create an instance template with the given startup script:
   a) **startup script**:
      ```
      #!/bin/bash
      apt-get update
      apt-get install -y apache2
      /etc/init.d/apache2 start
      cat <<EOF > /var/www/html/index.html
      <html>
      <body>
      <p>hostname is: $(hostname)</p>
      </body>
      </html>
      EOF
      ```
   b) **command**:
      gcloud compute --project=pe-training instance-templates create av-a1-q8 --machine-type=f1-micro --network=projects/pe-training/global/networks/default --network-tier=PREMIUM --metadata=startup-script=\#\!/bin/bash$'\n'apt-get\ update$'\n'apt-get\ install\ -y\ apache2$'\n'/etc/init.d/apache2\ start$'\n'cat\ \<\<EOF\ \>\ /var/www/html/index.html$'\n'\<html\>$'\n'\<body\>$'\n'\<p\>hostname\ is:\ \$\(hostname\)\</p\>$'\n'\</body\>$'\n'\</html\>$'\n'EOF --maintenance-policy=MIGRATE --service-account=912623308461-compute@developer.gserviceaccount.com --scopes=https://www.googleapis.com/auth/devstorage.read_only,https://www.googleapis.com/auth/logging.write,https://www.googleapis.com/auth/monitoring.write,https://www.googleapis.com/auth/servicecontrol,https://www.googleapis.com/auth/service.management.readonly,https://www.googleapis.com/auth/trace.append --image=debian-9-stretch-v20190618 --image-project=debian-cloud --boot-disk-size=10GB --boot-disk-type=pd-standard –boot-disk-device-name=av-a1-q8

2. Create an instance group using the following commands:
   a) avinash@Quantiphi-929:~/Documents/gcp_assessment_1$ **gcloud compute --project=pe-training instance-groups managed create av-a1-q8-ig --base-instance-name=av-a1-q8-ig --template=av-a1-q8 --size=1 --zone=us-central1-a**

      Created [https://www.googleapis.com/compute/v1/projects/pe-training/zones/us-central1-a/instanceGroupManagers/av-a1-q8-ig].
      NAME   LOCATION   SCOPE BASE_INSTANCE_NAME SIZE TARGET_SIZE INSTANCE_TEMPLATE AUTOSCALED
      av-a1-q8-ig us-central1-a zone av-a1-q8-ig   0   1   av-a1-q8   no

   b) avinash@Quantiphi-929:~/Documents/gcp_assessment_1$ **gcloud beta compute --project "pe-training" instance-groups managed set-autoscaling "av-a1-q8-ig" --zone "us-central1-a" --cool-down-period "60" --max-num-replicas "3" --min-num-replicas "1" --target-cpu-utilization "0.6"**
      Created [https://www.googleapis.com/compute/beta/projects/pe-training/zones/us-central1-a/autoscalers/av-a1-q8-ig-0dqn].
      ---
      autoscalingPolicy:
        coolDownPeriodSec: 60
        cpuUtilization:

    utilizationTarget: 0.6
  maxNumReplicas: 3
  minNumReplicas: 1
creationTimestamp: '2019-07-19T06:56:45.957-07:00'
id: '1190444656100143858'
kind: compute#autoscaler
name: av-a1-q8-ig-0dqn
selfLink: https://www.googleapis.com/compute/beta/projects/pe-training/zones/us-central1-a/autoscalers/av-a1-q8-ig-0dqn
status: ACTIVE
target: https://www.googleapis.com/compute/beta/projects/pe-training/zones/us-central1-a/instanceGroupManagers/av-a1-q8-ig
zone: https://www.googleapis.com/compute/beta/projects/pe-training/zones/us-central1-a

3. Install stress tool and test your auto-scaling group:
   a) SSH into your primary instance.
   b) Then, install stress tool using the following command:
      sudo apt-get stress
   c) Now, run the following command:
      avinash_sidhwani@av-a1-q8-ig-cvlr:~$ **stress --cpu 1 --timeout 60**
      stress: info: [2949] dispatching hogs: 1 cpu, 0 io, 0 vm, 0 hdd

⚠ **av-a1-q8-ig**

Members   Details   Monitoring

Zone: **us-central1-a**   Template: **av-a1-q8**   Autoscaling: **On**   Target: **CPU usage 60%**   In use by:

⚠ The number of instances in the instance group has reached the max_num_replicas. The autoscaler cannot add more instances.

Filter group members						

	Name	Creation time	Template	Internal IP	External IP	Connect
☐ ✅	av-a1-q8-ig-6bln	Jul 19, 2019, 7:33:32 PM	av-a1-q8	10.128.0.124 (nic0)	34.66.104.89	SSH ▾
☐ ✅	av-a1-q8-ig-cvlr	Jul 19, 2019, 7:26:05 PM	av-a1-q8	10.128.0.122 (nic0)	34.67.18.201	SSH ▾
☐ ✅	av-a1-q8-ig-m8nz	Jul 19, 2019, 7:33:22 PM	av-a1-q8	10.128.0.123 (nic0)	104.198.63.209	SSH ▾