Question 3

Step 1 :

Navigate to create instance

Step 2 :

Assign name and select any suitable LinuxOS (Ubuntu 18.04 in this example)

Step 3 :

Allow HTTP Traffic as it is a web server in which Apache will be installed

Step 4 :

In the startup script insert the below code -

```
#! /bin/bash
apt-get update
apt-get install -y apache2
curl -sSO https://dl.google.com/cloudagents/install-monitoring-agent.sh
sudo bash install-monitoring-agent.sh
curl -sSO https://dl.google.com/cloudagents/install-logging-agent.sh
sudo bash install-logging-agent.sh
rm /var/www/html/index.html
echo "<h1>Hi I am Ketav!</h1>" >> /var/www/html/index.html
```

Step 5 :

To stop the instance from CLI -

```
gcloud compute instances stop ketav-gcp2-q3 --zone us-central1-a
```

Step 6 :

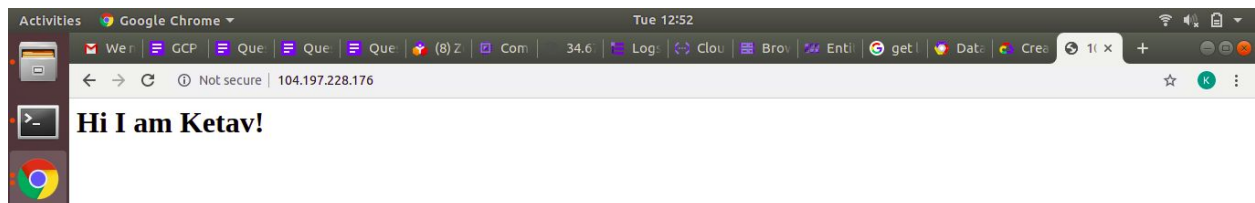This stops the running instance and thus the page can no longer be visited

Step 7 :

To start the instance from CLI -

```
gcloud compute instances start ketav-gcp2-q3 --zone us-central1-a
```

Step 8 :

This makes the startup script rerun and hence once again the startup script runs to install the necessary components and serve the components. And thus we can see the page again

Screenshot 1 (top):

Activities — Google Chrome — Tue 12:47

Google Cloud Platform — Training

Stackdriver Logging

- Logs Viewer
- Logs-based metrics
- Exports
- Logs ingestion

CREATE METRIC   CREATE EXPORT

Filter by label or text search

GCE VM Instance, ketav-gcp2-q3 | All logs | Any log level | Last hour | Jump to now

Showing logs from the last hour ending at 12:46 PM (IST)   Download logs   View Options

```
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 collectd[4863]: plugin_load: plugin "aggregation" successfully …
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 stackdriver-agent[4826]: ...done.
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 systemd[1]: Started LSB: start and stop Stackdriver Agent.
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: ==========================…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: Installation of stackdrive…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 collectd[4864]: Initialization complete, entering read-loop.
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 collectd[4864]: tcpconns plugin: Reading from netlink succeeded…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: Please consult the documen…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: https://cloud.google.com/m…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: You can monitor the monito…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: /var/log/syslog
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: ==========================…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: Starting installation of g…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: ==========================…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: Installing agents for Debi…
2019-07-23 12:43:39.000 IST Jul 23 07:13:39 ketav-gcp2-q3 startup-script: INFO startup-script: Warning: apt-key output sh…
2019-07-23 12:43:40.000 IST Jul 23 07:13:40 ketav-gcp2-q3 startup-script: INFO startup-script: OK
```

Screenshot 2 (bottom):

Activities — Google Chrome — Tue 12:47

Google Cloud Platform — Training

Stackdriver Logging

- Logs Viewer
- Logs-based metrics
- Exports
- Logs ingestion

CREATE METRIC   CREATE EXPORT

Filter by label or text search

GCE VM Instance, ketav-gcp2-q3 | All logs | Any log level | Last hour | Jump to now

Showing logs from the last hour ending at 12:46 PM (IST)   Download logs   View Options

```
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 startup-script: INFO startup-script: A test message has been se…
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 startup-script: INFO startup-script: Please consult the documen…
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 startup-script: INFO startup-script: https://cloud.google.com/l…
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 startup-script: INFO startup-script: You can monitor the loggin…
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 startup-script: INFO startup-script: /var/log/google-fluentd/go…
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 startup-script: INFO startup-script: ==========================…
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 startup-script: INFO startup-script: Return code 0.
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 startup-script: INFO Finished running startup scripts.
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 systemd[1]: Started Google Compute Engine Startup Scripts.
2019-07-23 12:43:58.000 IST Jul 23 07:13:58 ketav-gcp2-q3 systemd[1]: Startup finished in 2.550s (kernel) + 1min 23.005s …
2019-07-23 12:44:38.577 IST 59.152.53.203 - - [23/Jul/2019:07:14:38 +0000] "GET / HTTP/1.1" 200 307 "-" "Mozilla/5.0 (X11…
2019-07-23 12:44:38.872 IST 59.152.53.203 - - [23/Jul/2019:07:14:38 +0000] "GET /favicon.ico HTTP/1.1" 404 502 "http://34…
2019-07-23 12:44:39.000 IST Jul 23 07:14:39 ketav-gcp2-q3 collectd[4864]: parse_value: Ignoring trailing garbage ".0" aft…
2019-07-23 12:44:39.000 IST Jul 23 07:14:39 ketav-gcp2-q3 collectd[4864]: parse_value: Ignoring trailing garbage ".0" aft…
2019-07-23 12:45:13.872 IST Compute Engine stop us-central1-a:ketav-gcp2-q3 ketav.bhatt@quantiphi.com {"@type":"type.g…
2019-07-23 12:45:14.535 IST compute.instances.stop {"resource":{"type":"instance","zone":"us-central1-a","id":"264974733…
```

Load newer logs

Google Cloud Platform   ⋮ Training ▾   🔍   26

Stackdriver
Logging

Logs Viewer

Logs-based metrics

Exports

Logs ingestion

II. CREATE METRIC   ⬆ CREATE EXPORT   ⟳   ▶

Filter by label or text search

GCE VM Instance, ketav-gcp2-q3   All logs   Any log level   🕐 Last hour   Jump to now

Showing logs from the last hour ending at 12:50 PM (IST)   Download logs   View Options

▸ ⓘ 2019-07-23 12:47:52.722 IST Compute Engine start us-central1-a:ketav-gcp2-q3 ketav.bhatt@quantiphi.com {"@type":"type…
▸ ⓘ 2019-07-23 12:47:53.557 IST compute.instances.start {"resource":{"zone":"us-central1-a","id":"2649747339234446755","name…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] Linux version 4.15.0-1037-gcp (buildd@lgw01…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] Command line: BOOT_IMAGE=/boot/vmlinuz-4.15…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] KERNEL supported cpus:
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] Intel GenuineIntel
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] AMD AuthenticAMD
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] Centaur CentaurHauls
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] x86/fpu: Supporting XSAVE feature 0x001: 'x…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] x86/fpu: Supporting XSAVE feature 0x002: 'S…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] x86/fpu: Supporting XSAVE feature 0x004: 'A…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] x86/fpu: xstate_offset[2]: 576, xstate_size…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] x86/fpu: Enabled xstate features 0x7, conte…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] e820: BIOS-provided physical RAM map:
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] BIOS-e820: [mem 0x0000000000000000-0x000000…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] BIOS-e820: [mem 0x000000000009fc00-0x000000…
▸ ⊕ 2019-07-23 12:48:29.000 IST Jul 23 07:18:29 ketav-gcp2-q3 kernel: [0.000000] BIOS-e820: [mem 0x00000000000f0000-0x000000…

Hi I am Ketav!