

# CMPE 281 Cloud Technologies

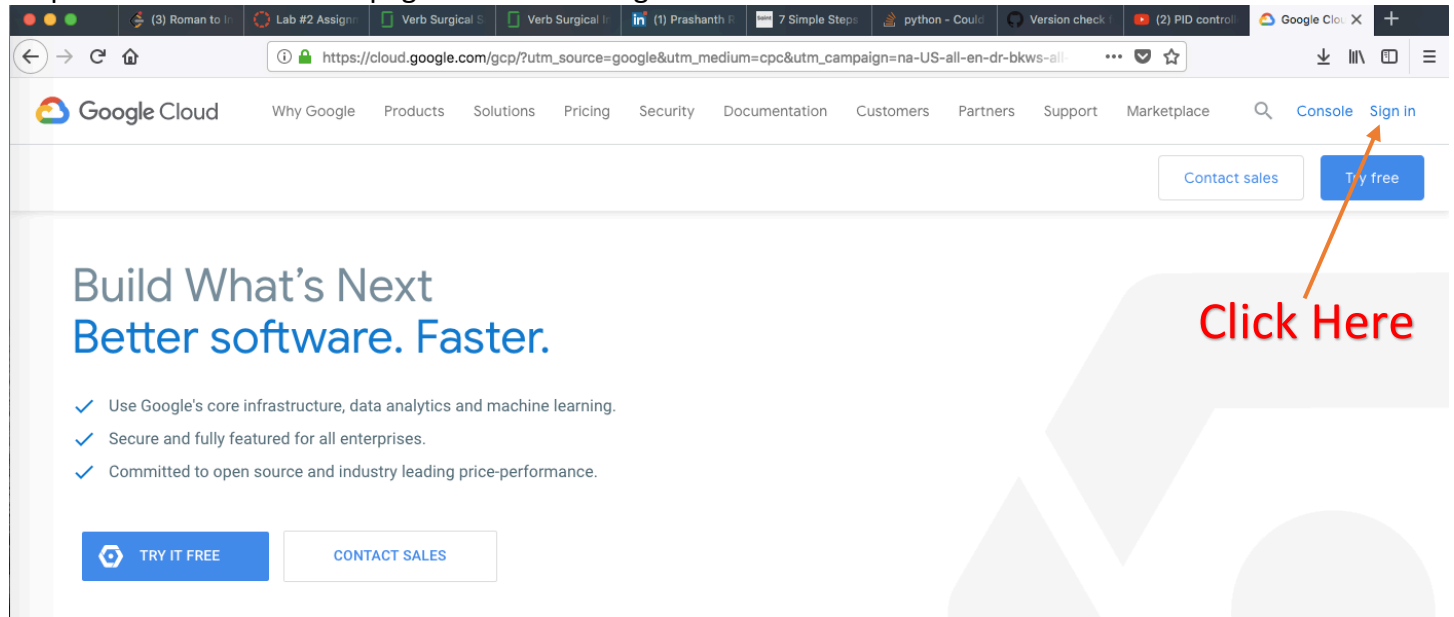
## Lab 2 Assignment Report

Name: Prashanth Rajasekar

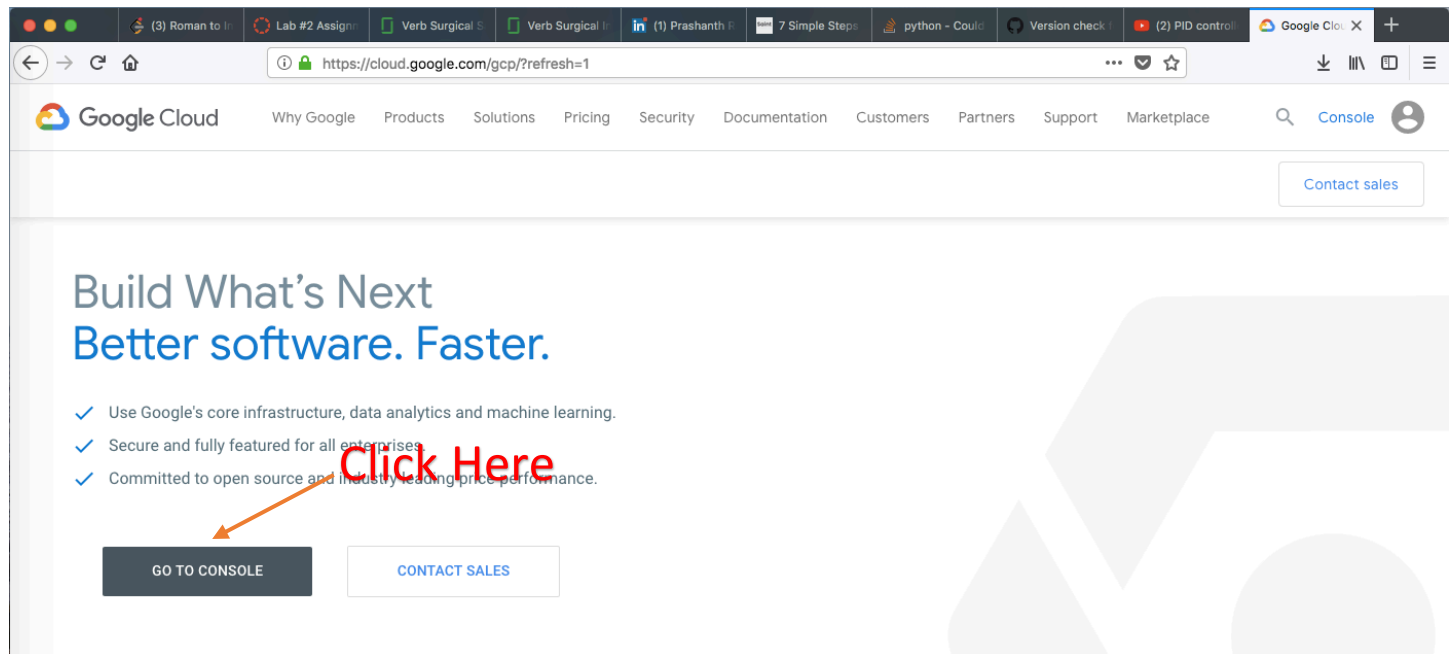
SJSUID:011822460

Email: [prashanth.rajasekar@sjsu.edu](mailto:prashanth.rajasekar@sjsu.edu)

Step 1: Go to the GCP main page. And click on Sign In.



Step 2: Enter your credentials and you reach to the below page.  
Click on GO TO CONSOLE.



Step3: the we will reach to the main page. Click on Compute Engine.

The screenshot shows the Google Cloud Platform console interface. The left-hand navigation menu is open, displaying various categories: Home, Marketplace, Billing, APIs & Services, Support, IAM & admin, Getting started, Security, COMPUTE, App Engine, Compute Engine, Kubernetes Engine, Cloud Functions, STORAGE, and Bigtable. The 'Compute Engine' option is highlighted with a red arrow and the text 'Click Here'.

Step4: Click on VM Instances.

The screenshot shows the Google Cloud Platform console interface. The left-hand navigation menu is open, displaying various categories: Home, Marketplace, Billing, APIs & Services, Support, IAM & admin, Getting started, Security, COMPUTE, App Engine, Compute Engine, Kubernetes Engine, Cloud Functions, STORAGE, and Bigtable. The 'Compute Engine' option is highlighted, and a sub-menu is open showing 'VM instances', 'Instance groups', 'Instance templates', 'Sole tenant nodes', 'Disks', 'Snapshots', 'Images', 'TPUs', 'Committed use discounts', 'Metadata', 'Health checks', 'Zones', 'Network endpoint groups', 'Operations', 'Quotas', 'Security scans', and 'Settings'. The 'VM instances' option is highlighted with a red arrow and the text 'Click Here'.

Step5: Click on Create

### Compute Engine VM instances

Compute Engine lets you use virtual machines that run on Google's infrastructure. Create micro-VMs or larger instances running Debian, Windows, or other standard images. Create your first VM instance, import it using the migration service, or try the quickstart to build a sample app.

[Click Here](#)

[Create](#) or [Import](#) or [Take the quickstart](#)

Step6: Give a name to the instance, select the Memory and CPU configuration, choose the OS which you need to install. Monthly expenses are listed at the right side of your page. We can even modify the Firewall settings. Once all the modifications are done, then we can click on Create.

Google Cloud Platform

My First Project

Create an instance

To create a VM instance, select one of the options:

New VM instance

Create a single VM instance from scratch

New VM instance from template

Create a single VM instance from an existing template

Marketplace

Deploy a ready-to-go solution onto a VM instance

Name

prashanth

Region

us-east1 (South Carolina)

Zone

us-east1-b

Machine type

Customize to select cores, memory and GPUs.

1 vCPU

3.75 GB memory

Customize

[Upgrade your account](#) to create instances with up to 96 cores

Container

☐ Deploy a container image to this VM instance. [Learn more](#)

Boot disk

New 10 GB standard persistent disk

Image

Debian GNU/Linux 9 (stretch)

Change

Identity and API access

Service account

Compute Engine default service account

Access scopes

☒ Allow default access

☐ Allow full access to all Cloud APIs

☐ Set access for each API

Firewall

Add tags and firewall rules to allow specific network traffic from the Internet

☒ Allow HTTP traffic

☒ Allow HTTPS traffic

[Management, security, disks, networking, disks](#)

Your Free Trial credits, if available, will be used for this instance

Create

Cancel

Equivalent REST or [command line](#)

\$24.67 monthly estimate

That's about \$0.034 hourly

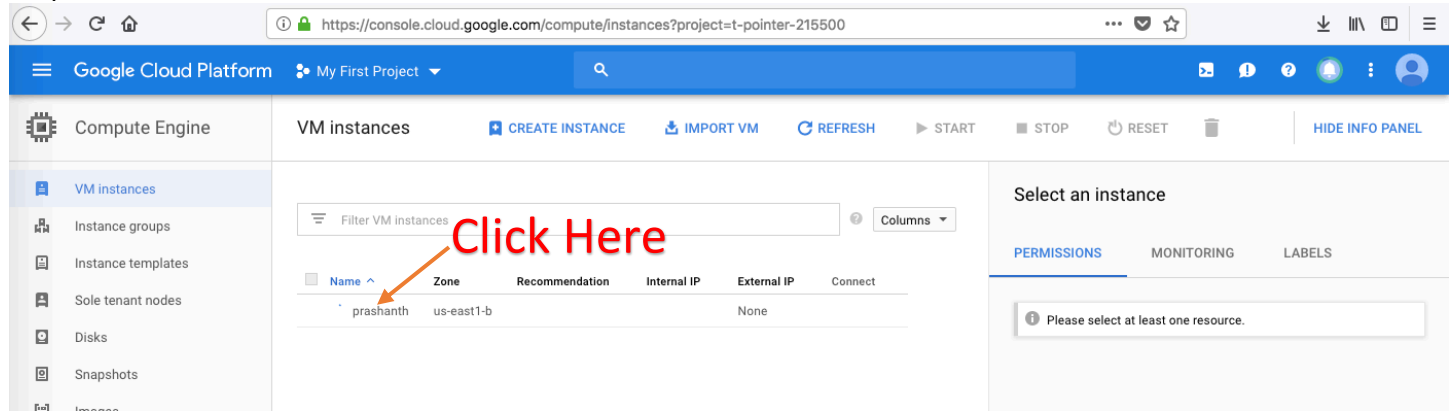
Pay for what you use: No upfront costs and per second billing

| Item                           | Estimated costs      |
|--------------------------------|----------------------|
| 1 vCPU + 3.75 GB memory        | \$34.68/month        |
| 10 GB standard persistent disk | \$0.40/month         |
| Sustained use discount         | - \$10.40/month      |
| <b>Total</b>                   | <b>\$24.67/month</b> |

[Compute Engine pricing](#)

[Less](#)

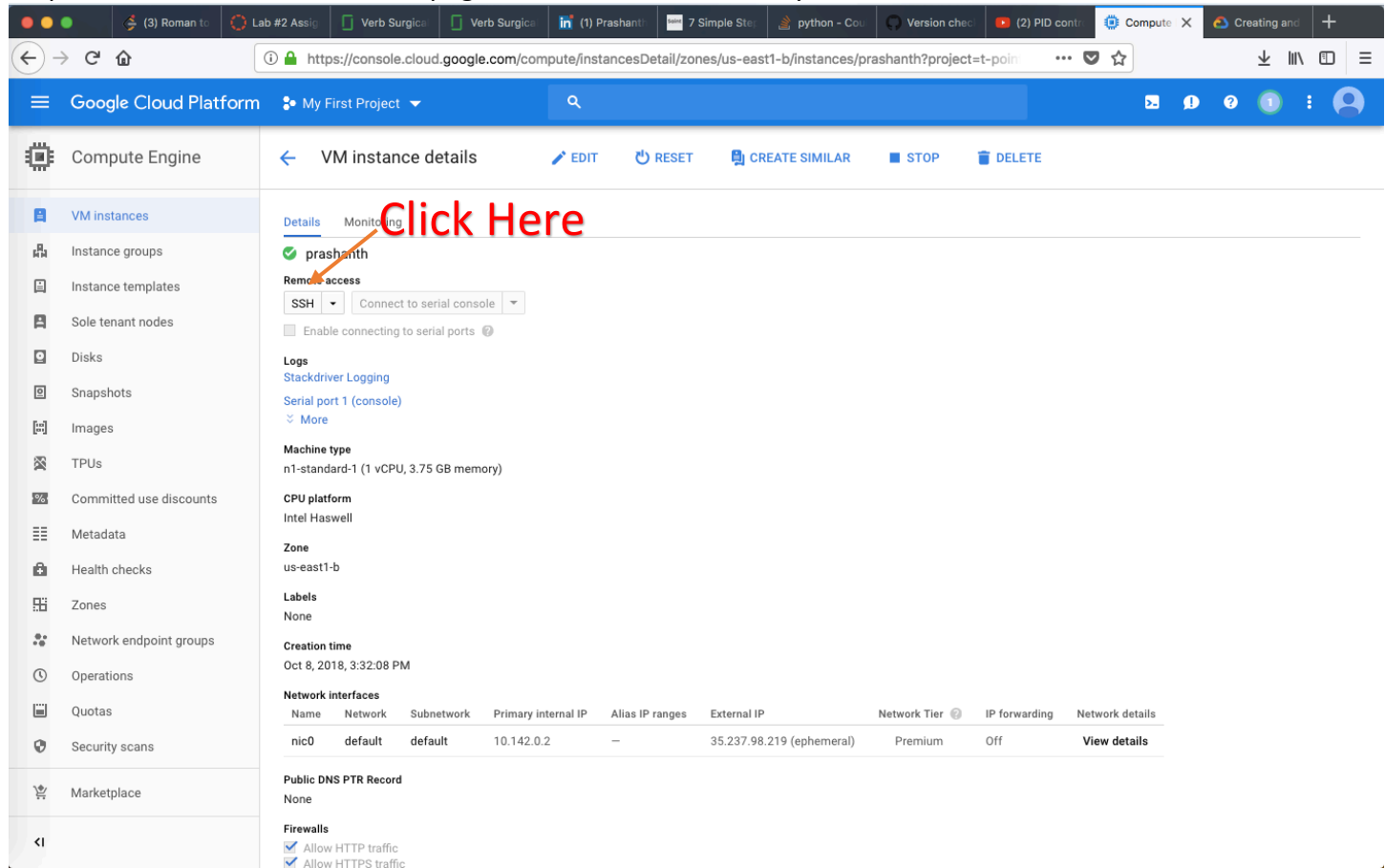
Step7: It will take some time to Create the instance. And then click on the instance name.



The screenshot shows the Google Cloud Platform console for 'My First Project'. The 'VM instances' page is active, displaying a table of instances. An orange arrow points to the 'prashanth' instance name in the table, with the text 'Click Here' in red. The table has columns for Name, Zone, Recommendation, Internal IP, External IP, and Connect. The 'prashanth' instance is in the 'us-east1-b' zone and has no external IP. On the right, the 'Select an instance' panel shows tabs for PERMISSIONS, MONITORING, and LABELS, with a message: 'Please select at least one resource.'

| Name      | Zone       | Recommendation | Internal IP | External IP | Connect |
|-----------|------------|----------------|-------------|-------------|---------|
| prashanth | us-east1-b |                |             | None        |         |

Step8: we will reach to the below page. Click on SSH to remotely access the instance.



The screenshot shows the 'VM instance details' page for the 'prashanth' instance. An orange arrow points to the 'SSH' option under 'Remote access', with the text 'Click Here' in red. The page displays various details about the instance, including its machine type, CPU platform, zone, labels, creation time, network interfaces, and public DNS PTR record. The 'SSH' option is selected, and the 'Connect to serial console' option is also visible.

**Details** | Monitoring

✓ prashanth

**Remote access**

SSH | Connect to serial console

☐ Enable connecting to serial ports

**Logs**

Stackdriver Logging

Serial port 1 (console)

More

**Machine type**

n1-standard-1 (1 vCPU, 3.75 GB memory)

**CPU platform**

Intel Haswell

**Zone**

us-east1-b

**Labels**

None

**Creation time**

Oct 8, 2018, 3:32:08 PM

**Network interfaces**

| Name | Network | Subnetwork | Primary internal IP | Alias IP ranges | External IP               | Network Tier | IP forwarding | Network details              |
|------|---------|------------|---------------------|-----------------|---------------------------|--------------|---------------|------------------------------|
| nic0 | default | default    | 10.142.0.2          | —               | 35.237.98.219 (ephemeral) | Premium      | Off           | <a href="#">View details</a> |

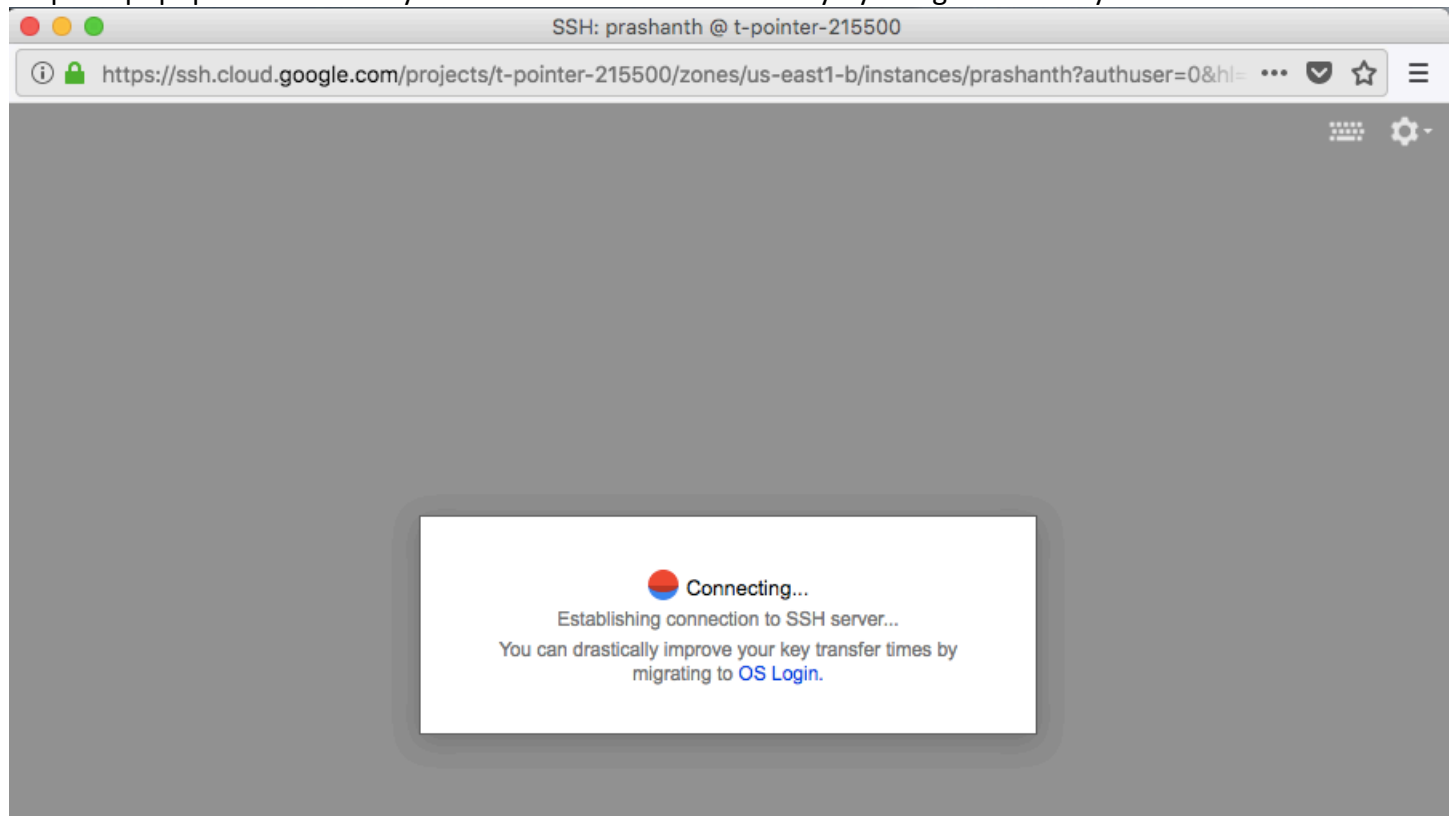
**Public DNS PTR Record**

None

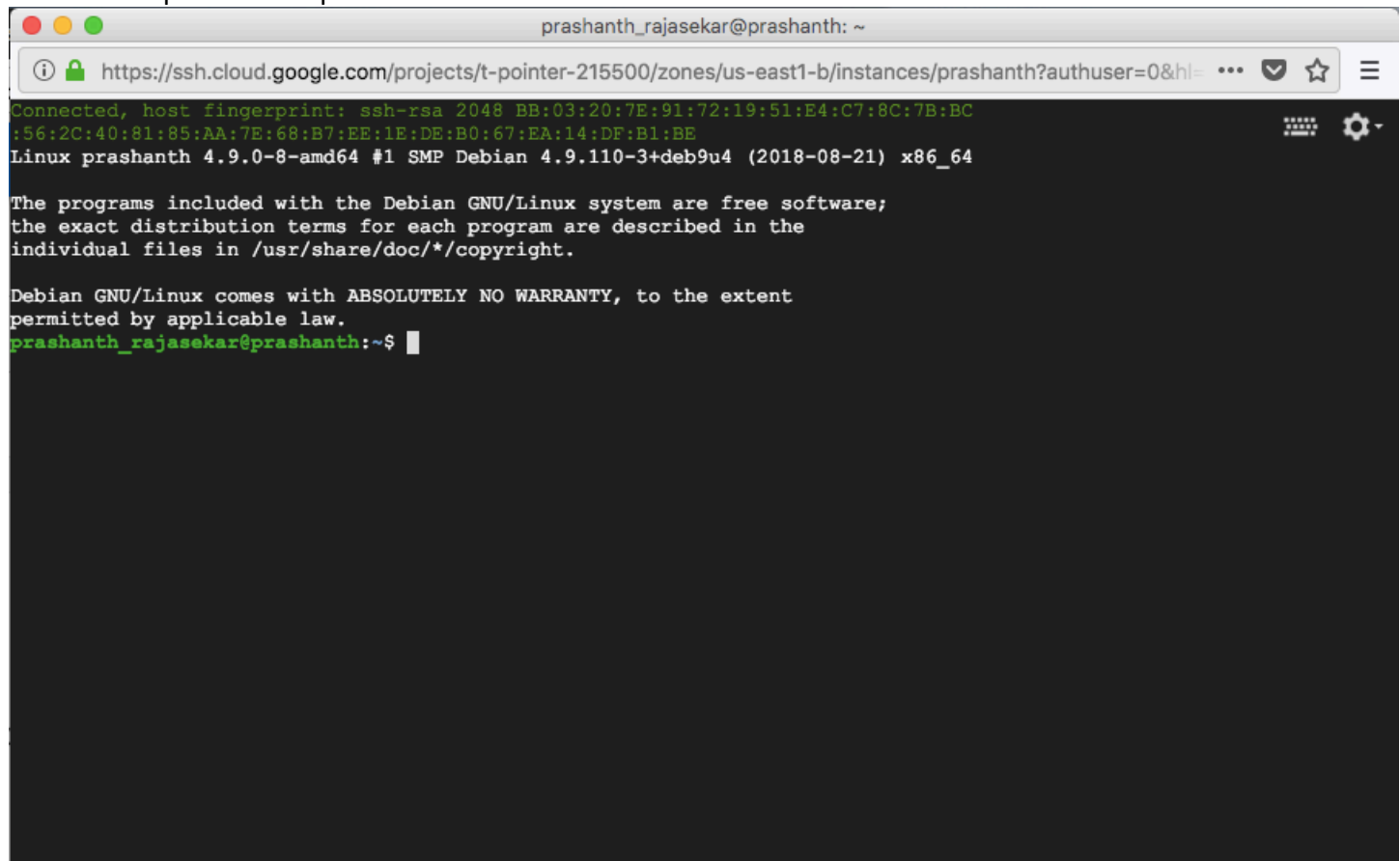
**Firewalls**

- ☒ Allow HTTP traffic
- ☒ Allow HTTPS traffic

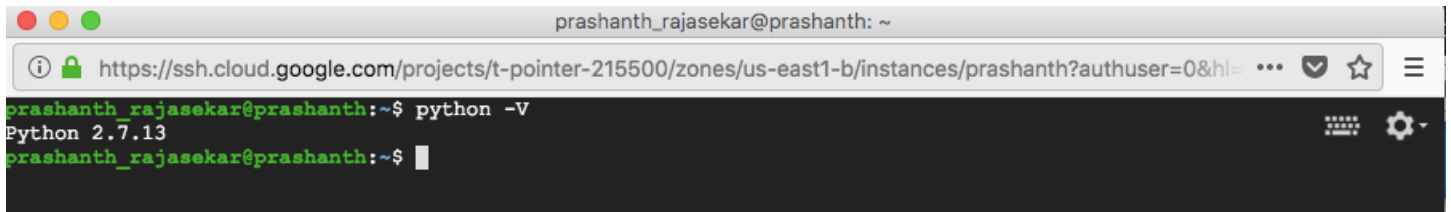
Step9: A popup window will try to access the instance remotely by using the SSH keys.



Wait till the process completes.

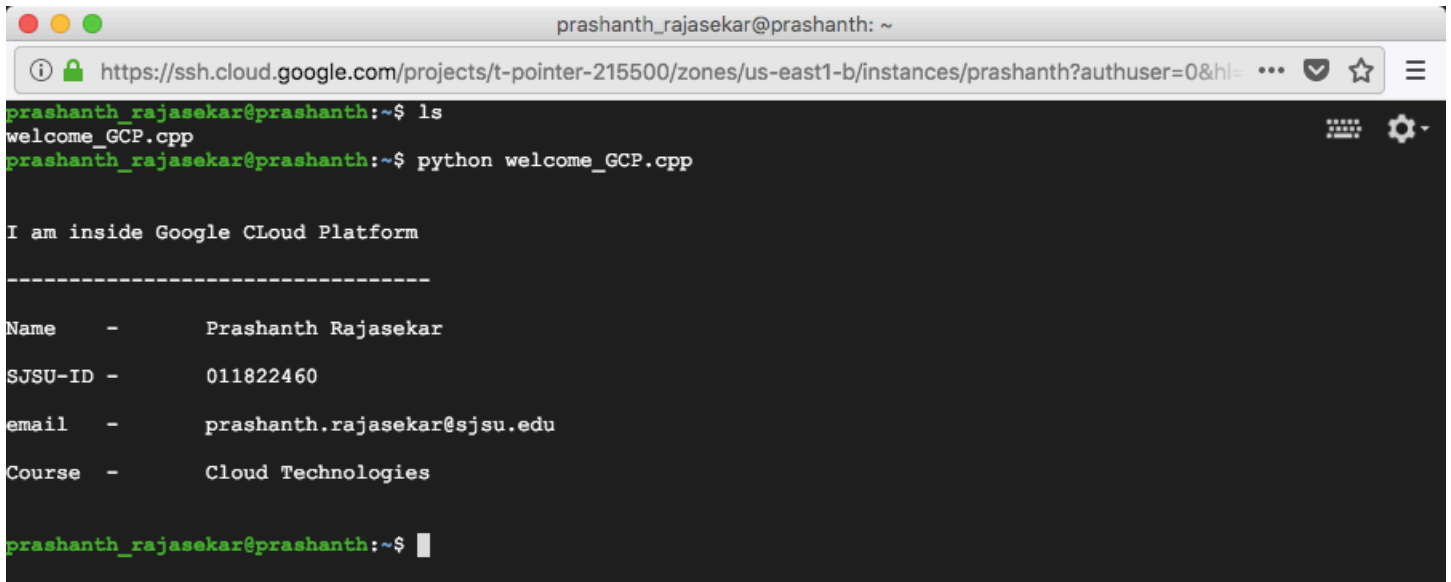


Step10: Lets install essential software to run a simple python application.

A terminal window with a dark background and light green text. The window title is 'prashanth\_rajasekar@prashanth: ~'. The address bar shows 'https://ssh.cloud.google.com/projects/t-pointer-215500/zones/us-east1-b/instances/prashanth?authuser=0&hl=...'. The terminal shows the command 'python -V' being executed, resulting in the output 'Python 2.7.13'.

```
prashanth_rajasekar@prashanth:~$ python -V
Python 2.7.13
prashanth_rajasekar@prashanth:~$
```

Step11: A python application has been created and was me to run in the Google Cloud.

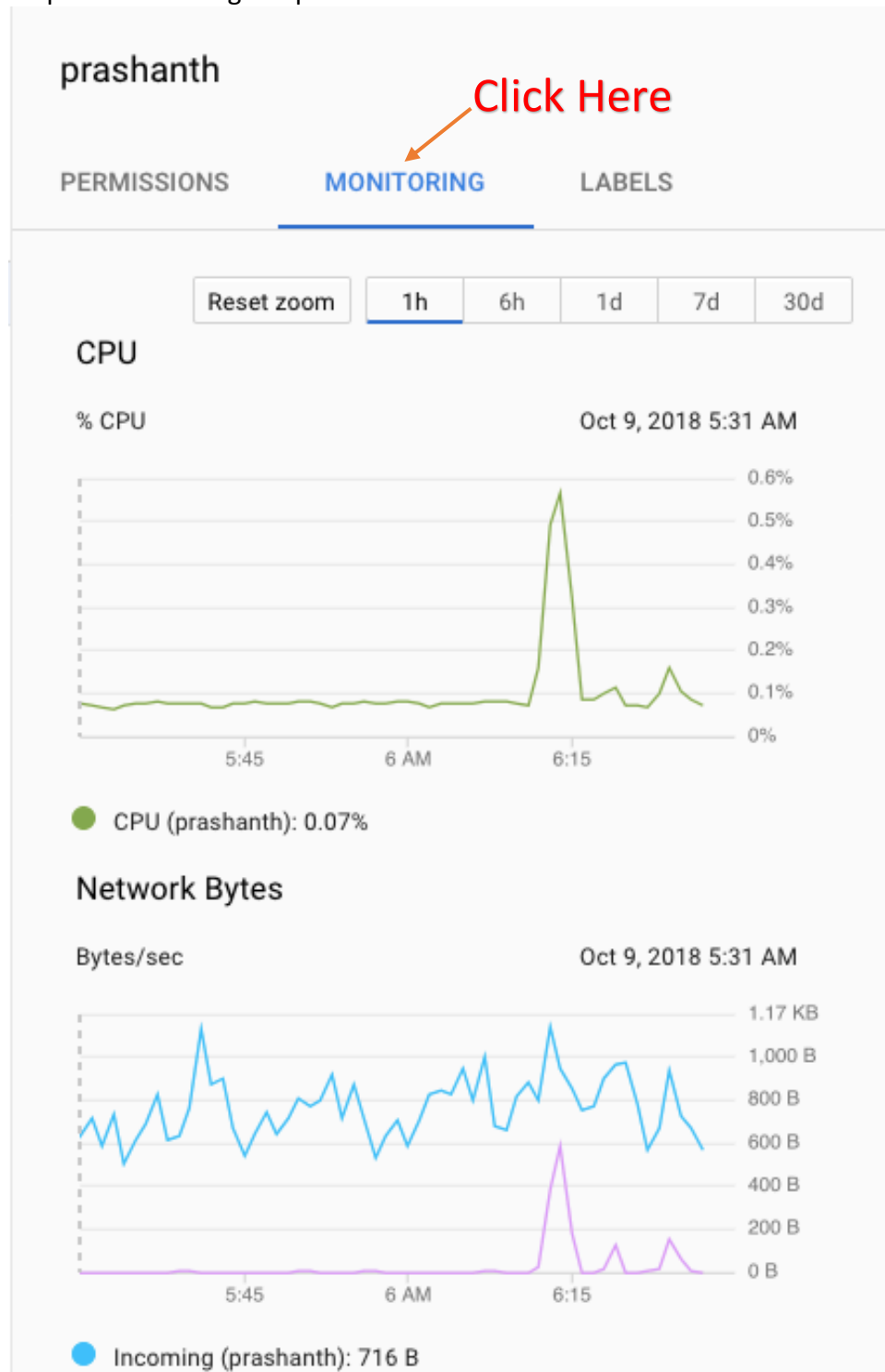
A terminal window with a dark background and light green text. The window title is 'prashanth\_rajasekar@prashanth: ~'. The address bar shows 'https://ssh.cloud.google.com/projects/t-pointer-215500/zones/us-east1-b/instances/prashanth?authuser=0&hl=...'. The terminal shows the command 'ls' being executed, resulting in the output 'welcome\_GCP.cpp'. Then, the command 'python welcome\_GCP.cpp' is executed, resulting in the output 'I am inside Google CCloud Platform' followed by a separator line and a list of personal details.

```
prashanth_rajasekar@prashanth:~$ ls
welcome_GCP.cpp
prashanth_rajasekar@prashanth:~$ python welcome_GCP.cpp

I am inside Google CCloud Platform
-----
Name      -      Prashanth Rajasekar
SJSU-ID   -      011822460
email     -      prashanth.rajasekar@sjsu.edu
Course    -      Cloud Technologies

prashanth_rajasekar@prashanth:~$
```

Step12: Monitoring the performance and resource utilization of the instance.

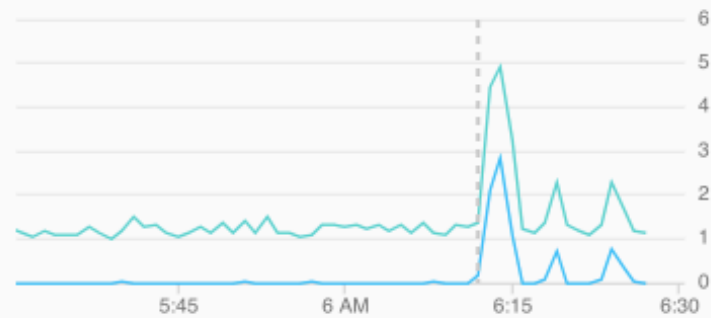


Outgoing (prashanth): 25 B

## Network Packets

Packets/sec

Oct 9, 2018 6:11 AM



Incoming (prashanth): 1.37

Outgoing (prashanth): 0.15

## Disk I/O (bytes)

Bytes/sec

Oct 9, 2018 6:11 AM



Read (prashanth): 2.87 KB

Write (prashanth): 1.54 KB

## Disk I/O (operations)

Operations/sec

Oct 9, 2018 5:32 AM



Read (prashanth): 0

Write (prashanth): 0.15



THANK YOU