

## Cluster container creation:

The screenshot shows the Google Cloud Platform interface for creating a Kubernetes cluster. The main window displays the 'Create a Kubernetes cluster' configuration page. On the left, a sidebar lists various configuration sections: Cluster basics, NODE POOLS (with 'default-pool' selected), CLUSTER (Automation, Networking, Security, Metadata, Features), and Control plane version.

**Cluster Basics:** Name is set to 'my-cluster'. Location type is 'Zonal' (selected). Zone is 'us-central1-a'. Control plane version is set to '1.21.6-gke.1503 (default)'.

**Node Pool Details:** The 'default-pool' node pool is being configured. It has a name of 'default-pool', a size of 1 node, and is using the 'us-central1-a' zone. Automation settings include 'Enable auto-upgrade' (checked) and 'Auto-upgrade is required when using a release channel' (warning message). Other automation options like 'Enable auto-repair' and 'Surge upgrade' are also present.

At the bottom of the configuration pages, there are 'CREATE', 'CANCEL', 'Equivalent REST or COMMAND LINE' buttons, and a status bar indicating the task is in progress ('Creating cluster').

Nataraja of Konerirajapuram (N... | [Update] New Google Cloud Plat... | Create a Kubernetes cluster - K... | +

https://console.cloud.google.com/kubernetes/add?project=zeta-ascent-346400&isCreateAndRegister=false

Google Cloud Platform My Project 35851 Search k

Create a Kubernetes cluster ADD NODE POOL REMOVE NODE POOL USE A SETUP GUIDE HELP ASSISTANT

Cluster basics

NODE POOLS

default-pool

- Nodes
- Security
- Metadata

CLUSTER

- Automation
- Networking
- Security
- Metadata
- Features

Nodes

These node settings will be used when new nodes are created using this node pool.

Image type Container-Optimized OS with containerd (cos\_containerd) (default)

The default Linux node image for newly created clusters and node pools with version 1.21.6-gke.1503 or later is Container-optimized OS with Containerd. For Windows node pools using version 1.21 or later, Containerd is also the recommended runtime. Since Dockershim is being deprecated by Kubernetes project, GKE will deprecate Docker node images. We recommend that you migrate to containerd node images as soon as possible. Learn more about the different node images.

Machine Configuration

Machine family

GENERAL-PURPOSE COMPUTE-OPTIMIZED MEMORY-OPTIMIZED GPU

Machine types for common workloads, optimized for cost and flexibility

Series E2

CPU platform selection based on availability

Machine type e2-medium (2 vCPU, 4 GB memory)

vCPU Memory

1 shared core 4 GB

▼ CPU PLATFORM AND GPU

CREATE CANCEL Equivalent REST or COMMAND LINE

Type here to search

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https://console.cloud.google.com/kubernetes/add?project=zeta-ascent-346400&isCreateAndRegister=false

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Cluster basics

NODE POOLS

default-pool

- Nodes
- Security
- Metadata

CLUSTER

- Automation
- Networking
- Security
- Metadata
- Features

▼ CPU PLATFORM AND GPU

Boot disk type Standard persistent disk

Boot disk size (GB) 100

Enable customer-managed encryption for boot disk

Local SSD disks

Enable preemptible nodes

Networking

The cluster settings specify a maximum of 110 Pods per node, but you can override that setting at the node pool level.

Maximum Pods per node 110

Mask for Pod address range per node: /24

Network tags

Node Pool Pod Address Range

The cluster settings specify a default cluster level pod address range, but you can override that setting at the node pool level.

Automatically create secondary ranges

CREATE CANCEL Equivalent REST or COMMAND LINE

Type here to search

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Nataraja of Konerirajapuram (N... X [Update] New Google Cloud Plat... X Create a Kubernetes cluster - Kl... X +

https://console.cloud.google.com/kubernetes/add?project=zeta-ascent-346400&isCreateAndRegister=false&cloudshell=true

Google Cloud Platform My Project 35851 Search k HELP ASSISTANT

Create a Kubernetes cluster ADD NODE POOL REMOVE NODE POOL USE A SETUP GUIDE

Cluster basics

NODE POOLS

default-pool

Nodes

Security

Metadata

CLUSTER

Automation

Networking

Security

CPU PLATFORM AND GPU

Boot disk type Standard persistent disk

Boot disk size (GB) 100

Enable customer-managed encryption for boot disk

Local SSD disks

Enable preemptible nodes

Note: The cluster settings specify a maximum of 110 Pods per node, but you can override that setting at the node pool level.

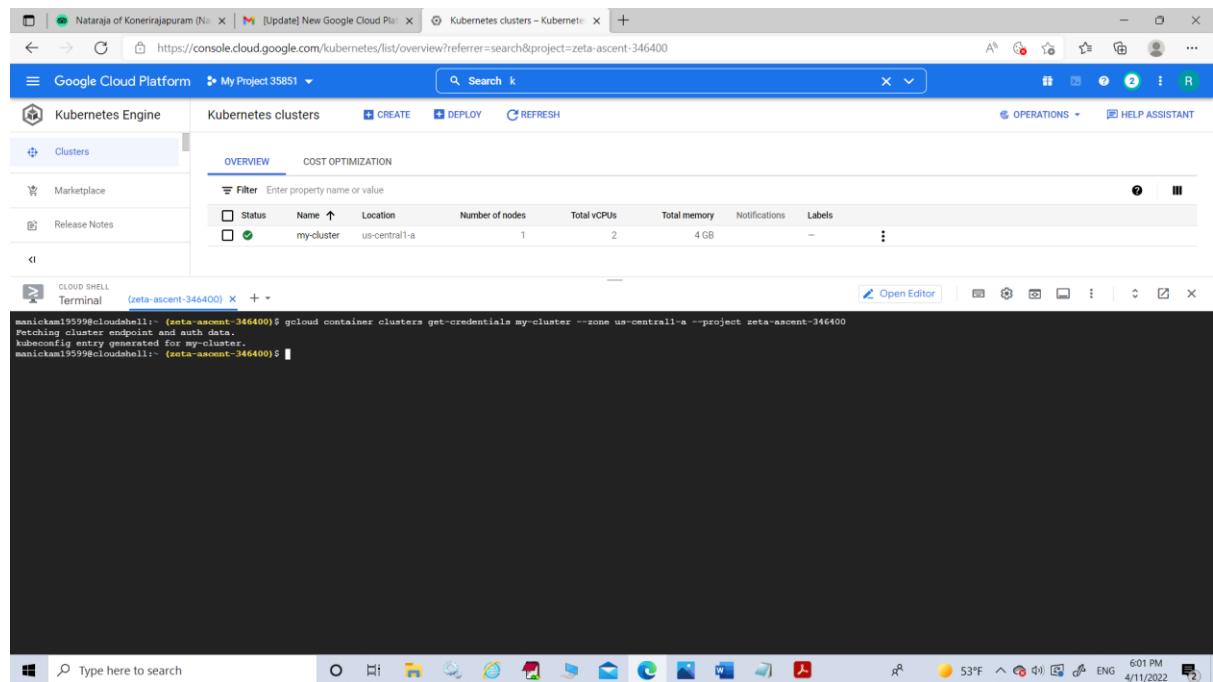
CREATE CANCEL Equivalent REST or COMMAND LINE

CLOUD SHELL Terminal (zeta-ascent-346400) X + v Open Editor

Terminal (zeta-ascent-346400)

```
Note: The Pod address range limits the maximum size of the cluster. Please refer to https://cloud.google.com/kubernetes-engine/docs/how-to/flexible-pod-cidr to learn how to optimize IP address allocation.
Creating cluster my-cluster in us-central1-a... Cluster is being health-checked (master is healthy).
Created [https://container.googleapis.com/v1beta1/projects/zeta-ascent-346400/zones/us-central1-a/clusters/my-cluster].
To inspect the contents of your cluster, go to: https://console.cloud.google.com/kubernetes/workload/gcloud/us-central1-a/my-cluster?project=zeta-ascent-346400
kubectl entry generated for my-cluster.
NAME: my-cluster
LOCATION: us-central1-a
MASTER_VERSION: 1.21.6-gke.1503
MASTER_IP: 35.225.24.129
MASTER_ROLE: e2-medium
NODE_VERSION: 1.21.6-gke.1503
NUM_NODES: 1
STATUS: RUNNING
nani@k8s19599:~$
```

Type here to search



## Download the latest shell script

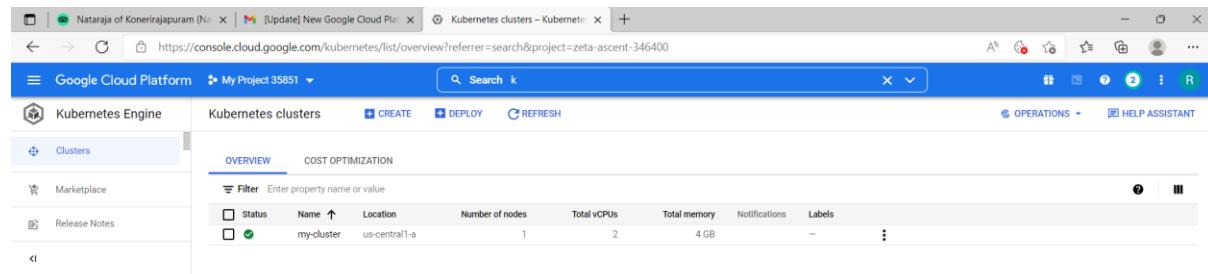
wget [https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86\\_64.sh](https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh)

## Make the miniconda installation script executable

chmod +x Miniconda3-latest-Linux-x86\_64.sh

## Run miniconda installation script

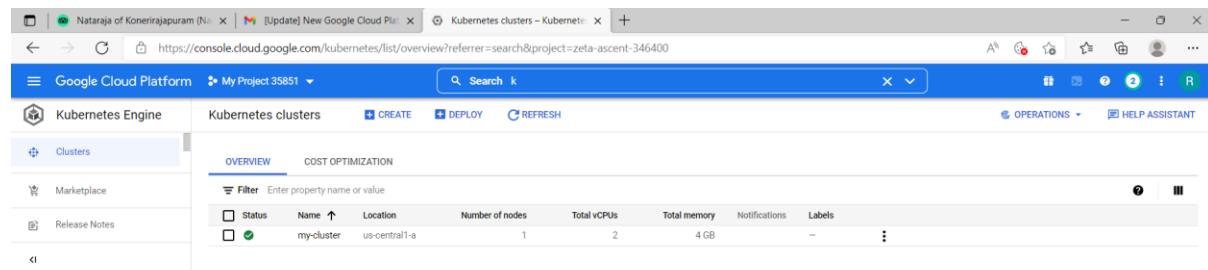
./Miniconda3-latest-Linux-x86\_64.sh



```
manickam19599@cloudshell:~ (zeta-ascent-346400)$ wget https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh
2022-04-12 01:02:31 -> https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh
Resolving repo.anaconda.com (repo.anaconda.com)... 104.16.130.3, 104.16.131.3, 2406:4700:1:6810:8303, ...
Connecting to repo.anaconda.com (repo.anaconda.com)|104.16.130.3|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 7566060 (72M) [application/x-sh]
Saving to: 'Miniconda3-latest-Linux-x86_64.sh'

Miniconda3-latest-Linux-x86_64.sh          100%[=====]   72.16M  113MB/s   in 0.6s
2022-04-12 01:02:31 (113 MB/s) - 'Miniconda3-latest-Linux-x86_64.sh' saved [7566060/7566060]

manickam19599@cloudshell:~ (zeta-ascent-346400)$
```

```
manickam19599@cloudshell:~ (zeta-ascent-346400)$ chmod +x Miniconda3-latest-Linux-x86_64.sh
manickam19599@cloudshell:~ (zeta-ascent-346400)$ ./Miniconda3-latest-Linux-x86_64.sh

Welcome to Miniconda3 py39_4.11.0

In order to continue the installation process, please review the license
agreement.
Please, press ENTER to continue
>>>
```



## Accept license - yes

The screenshot shows the Google Cloud Platform interface for managing Kubernetes clusters. In the terminal window, the user is prompted to accept the license terms for Miniconda. The user types 'yes' to accept the terms.

```
Do you accept the license terms? [yes|no]
[no] >>>
Please answer 'yes' or 'no':'
>>>
Please answer 'yes' or 'no':'
>>> yes
```

The screenshot shows the Google Cloud Platform interface for managing Kubernetes clusters. In the terminal window, the user is prompted to accept the license terms for Miniconda. The user types 'yes' to accept the terms.

```
Do you accept the license terms? [yes|no]
[no] >>>
Please answer 'yes' or 'no':'
>>>
Please answer 'yes' or 'no':'
>>> yes

Miniconda3 will now be installed into this location:
/home/manickam19599/miniconda3

- Press ENTER to confirm the location
- Press CTRL-C to abort the installation
- Or specify a different location below

[~/home/manickam19599/miniconda3] >>>
```

Default path :yes

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Google Cloud Platform My Project 35851 Search k

Kubernetes Engine Kubernetes clusters CREATE DEPLOY REFRESH OPERATIONS HELP ASSISTANT

Clusters Marketplace Release Notes

OVERVIEW COST OPTIMIZATION

Filter Enter property name or value

Status	Name	Location	Number of nodes	Total vCPUs	Total memory	Notifications	Labels
<span style="color: green;">●</span>	my-cluster	us-central1-a	1	2	4 GB	–	–

CLOUD SHELL Terminal (zeta-ascent-346400) + Open Editor

```

libstdc++-ng      pkg/main/linux-64::libstdc++-ng-9.3.0-hd4cf53a_17
ncurses          pkg/main/linux-64::ncurses-6.3-h7f8727e_2
openssl          pkg/main/linux-64::openssl-1.1.1m-h7f8727e_0
pip              pkg/main/linux-64::pip-21.2.4-py39h06a130e_0
pycrypter        pkg/main/noarch:pycrypter-0.1.3-py39h06a130e_0
pycryptper       pkg/main/noarch:pycryptper-21.0.0-py39h06a130e_0
pyopenssl        pkg/main/noarch:pyopenssl-21.0.0-py39h06a130e_1
pysocks          pkg/main/linux-64::pysocks-1.7.1-py39h06a430e_0
python            pkg/main/noarch:python-3.9.12-h7f8727e_0
pytz             pkg/main/noarch:pytz-2021.3-py39h06a430e_0
requests         pkg/main/noarch:requests-2.27.1-pyhd3eb1b0_1
ruamel_yaml      pkg/main/linux-64::ruamel_yaml-0.15.100-py39h27cf2d3_0
setuptools       pkg/main/noarch:setuptools-59.0.1-py39h06a430e_0
six              pkg/main/noarch:six-1.16.0-pyhd3eb1b0_0
sqlite            pkg/main/linux-64::sqlite-3.37.0-hc218d9a_0
tk                pkg/main/linux-64::tk-8.6.11-h1ccab5_0
tkinter           pkg/main/noarch:tkinter-3.9-py39h06a130e_0
tuxdata           pkg/main/noarch:tuxdata-2021.04.17ab7_0
urllib3          pkg/main/noarch:urllib3-1.26.7-pyhd3eb1b0_0
wheel             pkg/main/linux-64::wheel-0.37.1-pyhd3eb1b0_0
xz                pkg/main/linux-64::xz-5.2.5-h7f847c_0
xz-devel          pkg/main/linux-64::xz-devel-0.2.5-h7f847c_0
zlib              pkg/main/linux-64::zlib-1.2.11-h7f8727e_4

Preparing transaction: done
Executing transaction: done
installation finished.
Do you wish the installer to initialize Miniconda3
by running conda init? (yes/no)
[no] >>> yes

```

Type here to search 53°F ENG 6:05 PM 4/11/2022

Nataraja of Konerirajapuram (N) [Update] New Google Cloud Platform Kubernetes clusters – Kubernetes [+] https://console.cloud.google.com/kubernetes/list/overview?referrer=search&project=zeta-ascent-346400

Google Cloud Platform My Project 35851 Search k

Kubernetes Engine Kubernetes clusters CREATE DEPLOY REFRESH OPERATIONS HELP ASSISTANT

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Status	Name	Location	Number of nodes	Total vCPUs	Total memory	Notifications	Labels
<span style="color: green;">●</span>	my-cluster	us-central1-a	1	2	4 GB	–	–

CLOUD SHELL Terminal (zeta-ascent-346400) + Open Editor

```

zlib              pkg/main/linux-64::zlib-1.2.11-h7f8727e_4

Preparing transaction: done
Executing transaction: done
installation finished.
Do you wish the installer to initialize Miniconda3
by running conda init? (yes/no)
[no] >>> yes
no change   /home/manickam1959/miniconda3/condabin/conda
no change   /home/manickam1959/miniconda3/bin/conda
no change   /home/manickam1959/miniconda3/bin/conda-env
no change   /home/manickam1959/miniconda3/bin/activate
no change   /home/manickam1959/miniconda3/etc/conda/activate
no change   /home/manickam1959/miniconda3/etc/profile.d/conda.sh
no change   /home/manickam1959/miniconda3/etc/fish/conf.d/conda.fish
no change   /home/manickam1959/miniconda3/etc/conda/Conda.psm1
no change   /home/manickam1959/miniconda3/lib/python3.9/site-packages/conda/activate.ps1
no change   /home/manickam1959/miniconda3/lib/python3.9/site-packages/xontrib/conda.xsh
no change   /home/manickam1959/miniconda3/etc/profile.d/conda.csh
modified   /home/manickam1959/.bashrc

=> For changes to take effect, close and re-open your current shell. <=
If you'd prefer that conda's base environment not be activated on startup,
set the auto_activate_base parameter to false:
conda config --set auto_activate_base false

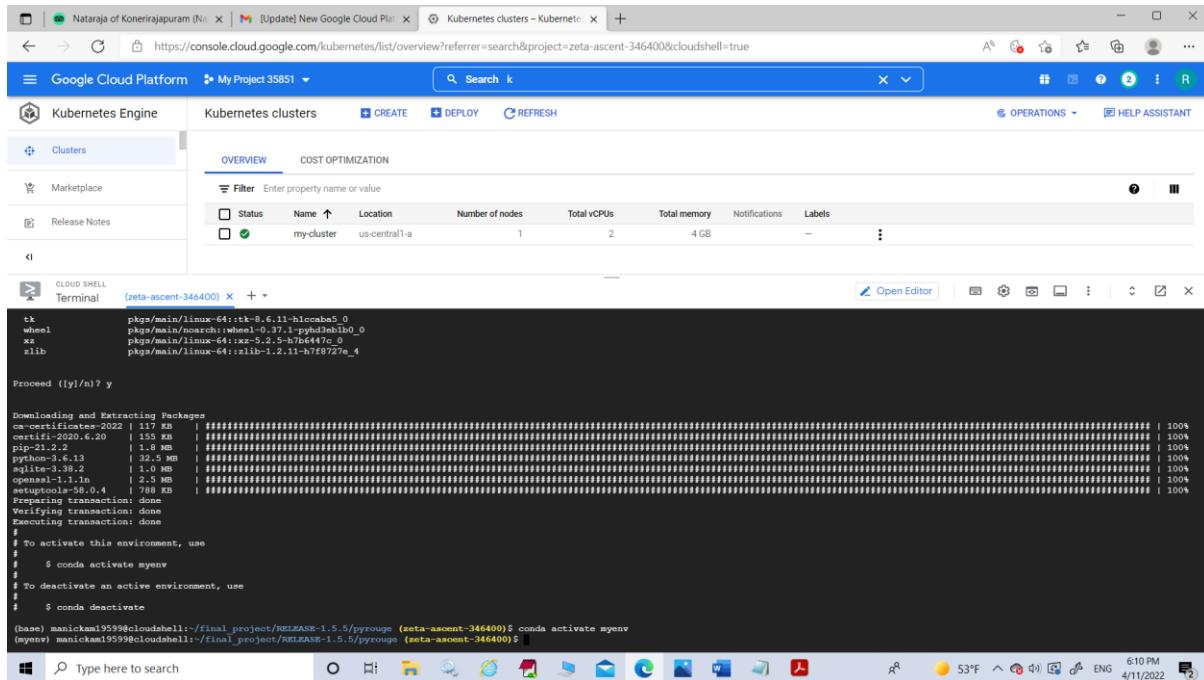
Thank you for installing Miniconda3!
manickam1959@cloudshell:~ (zeta-ascent-346400)$

```

Type here to search 53°F ENG 6:05 PM 4/11/2022

```
conda create -n myenv python=3.6
```

```
conda activate myenv
```



The screenshot shows the Google Cloud Platform interface for Kubernetes Engine. On the left, there's a sidebar with 'Clusters' selected. In the main area, under 'OVERVIEW', a table lists a single cluster named 'my-cluster' located in 'us-central1-a'. Below this is a 'CLOUD SHELL' terminal window titled '(zeta-ascent-346400)'. The terminal output shows the process of activating a Python environment:

```
tk          pkg/main/linux-64::tk-8.6.11-hiccab5_0
wheel      pkg/main/noarch::wheel-0.37.1-py36he650_0
xz          pkg/main/linux-64::xz-5.2.5-h7e44f6c_0
zlib       pkg/main/linux-64::zlib-1.2.11-h7827a_4

Proceed ((y/n)? y

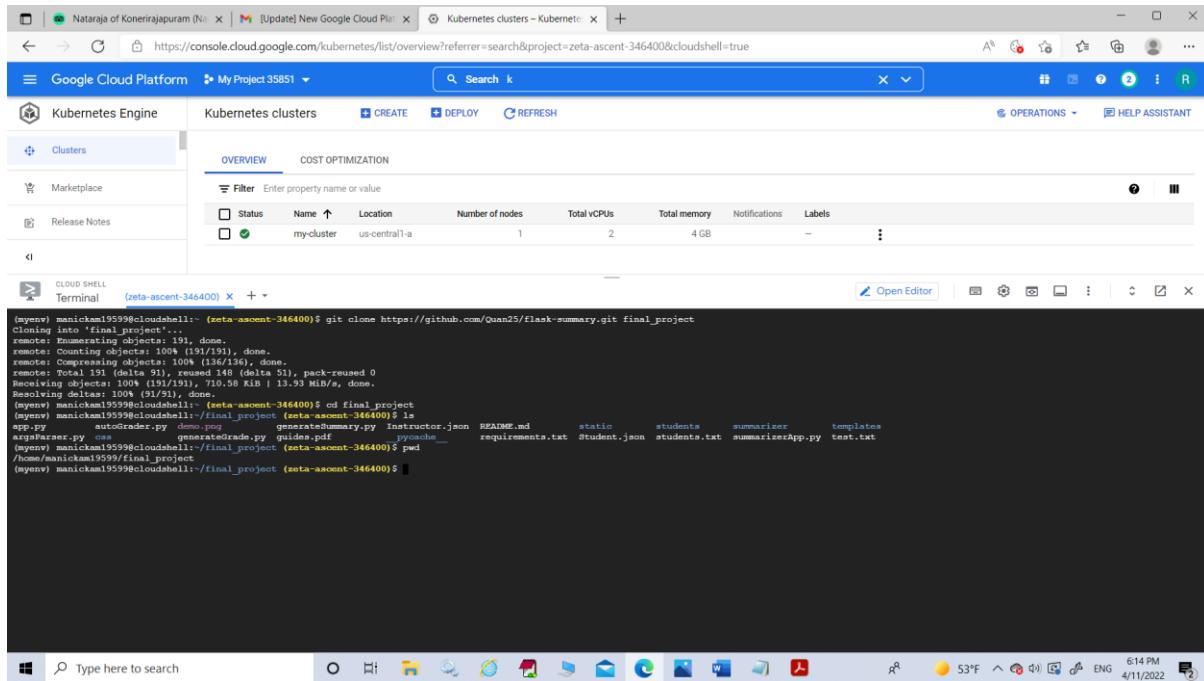
Downloading and Extracting Packages
certifi-2020.6.20 |████████████████████████████████| 155 KB 100%
pip-21.2.2        |████████████████████████████████| 1.8 MB 100%
python-3.6.13     |████████████████████████████████| 32.5 MB 100%
sqlite-3.32.3     |████████████████████████████████| 1.1 MB 100%
openssl-1.1.1n    |████████████████████████████████| 2.9 MB 100%
setuptools-58.0.4 |████████████████████████████████| 788 KB 100%
Preparing transaction: done
Verifying transaction: done
Executing transaction: done

# To activate this environment, use
# $ conda activate myenv
# To deactivate an active environment, use
# $ conda deactivate

(base) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (zeta-ascent-346400)$ conda activate myenv
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (zeta-ascent-346400)$
```

## Download the project from gibhub

```
git clone https://github.com/Quan25/flask-summary.git final_project
```



This screenshot shows the same Google Cloud Platform interface as the previous one, but the terminal output is different. It shows the user cloning a GitHub repository named 'final\_project' into their current directory:

```
(myenv) manickam1959@cloudshell:~ (zeta-ascent-346400)$ git clone https://github.com/Quan25/flask-summary.git final_project
Cloning into 'final_project'...
remote: Enumerating objects: 191, done.
remote: Counting objects: 100% (191/191), done.
remote: Compressing objects: 100% (104/104), done.
remote: Total 191 (delta 91), reused 148 (delta 51), pack-reused 0
Receiving objects: 100% (191/191), 710.58 kB | 13.93 MiB/s, done.
Resolving deltas: 100% (31/31), done.
(myenv) manickam1959@cloudshell:~ (zeta-ascent-346400)$ cd final_project
(myenv) manickam1959@cloudshell:~/final_project (zeta-ascent-346400)$ ls
app.py  autoGrader.py  demo.png  generateSummary.py  Instructor.json  README.md  static  students  summarizer  templates
argsParser.py  css  generatedGrade.py  guides.pdf  pycache  requirements.txt  student.json  students.txt  summarizerApp.py  test.txt
(myenv) manickam1959@cloudshell:~/final_project (zeta-ascent-346400)$ pwd
/home/manickam1959/final_project
(myenv) manickam1959@cloudshell:~/final_project (zeta-ascent-346400)$
```

```

wget --load-cookies /tmp/cookies.txt
"https://docs.google.com/uc?export=download&confirm=$(wget --quiet --save-
cookies /tmp/cookies.txt --keep-session-cookies --no-check-certificate
'https://drive.google.com/file/d/1RxfZOYyNvzvCf37_vABfJMkohAsEZKtH/' -O - |
sed -rn 's/.confirm=([0-9A-Za-
z_]+)./\1\n/p')&id=1RxfZOYyNvzvCf37_vABfJMkohAsEZKtH" -O rough.zip &&
rm -rf /tmp/cookies.txt

```

The screenshot shows the Google Cloud Platform interface for Kubernetes Engine. In the terminal window, a user is executing a command to download a file from Google Drive using wget. The command involves loading cookies, specifying a URL, and saving the file as rough.zip. The terminal output shows the progress of the download.

This screenshot continues the terminal session from the previous one. It shows a detailed log of the wget command execution, including multiple redirects and the final successful download of 'rough.zip' from Google Drive. The log includes timestamps, URLs, and status codes.

## Unzip rough.zip

```
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D087.M.100.D.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D119.M.100.I.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D114.M.100.H.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D071.M.100.F.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D093.M.100.C.H.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D078.M.100.B.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D070.M.100.G.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D073.M.100.B.J.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D120.M.100.I..26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D100.M.100.E.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D092.M.100.C.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D091.M.100.C.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D113.M.100.H.T.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D102.M.100.F.D.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D095.M.100.D.H.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D085.M.100.D.H.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D063.M.100.J.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D108.M.100.G..26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D075.M.100.K.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D080.M.100.X.K.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D104.M.100.G.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D106.M.100.G.R.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D077.M.100.B.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D095.M.100.C.H.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D089.M.100.D.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D070.M.100.F.D.26.mini.be
infloating: RELEASE-1.5.5/sample-test/DOC2002/BK-F/D103.M.100.X.26.mini.be
infloating: RELEASE-1.5.5/ROUGE-1.5.5.pl
```

**Install libxml-parser-perl, it is essential for installing ROUGE-1.5.5**  
sudo apt-get install libxml-parser-perl

```
(myenv) manickam1959@cloudshell:~/final_project (zeta-ascent-346400)$ sudo apt-get install libxml-parser-perl
=====
You are running apt-get inside of Cloud Shell. Note that your Cloud Shell
machine is ephemeral and no system-wide change will persist beyond session end.
To suppress this warning, create an empty ~/.cloudshell/no-apt-get-warning file.
The command will automatically proceed in 5 seconds or on any key.
Visit https://cloud.google.com/shell/help for more information.
=====
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
libauthen-sasl-perl libclone-perl libdata-dump-perl libencode-locale-perl libfile-listing-perl libfont-afm-perl libhtml-form-perl libhtml-format-perl libhtml-parser-perl libhtml-tagset-perl libhtml-tree-perl
libhttp-cookies-perl libhttp-daemon-perl libhttp-date-perl libhttp-message-perl libhttp-negotiate-perl libio-httplib-perl libio-socket-ssl-perl liblwp-mediatypes-perl liblwp-protocol-http-perl libmailtools-perl
libnet-HTTP-perl libnet-sasl-perl libnet-sasl-perl libtiny-perl liburi-perl libwww-robotrules-perl perl-openssl-defaults
Suggested packages:
libdigest-hmac-perl libgmpapi-perl libcrypt-asykey-perl libauthen-ntlm-perl
The following NEW packages will be installed:
libclone-perl libdata-dump-perl libencode-locale-perl libfile-listing-perl libfont-afm-perl libhtml-form-perl libhtml-format-perl libhtml-parser-perl libhtml-tagset-perl libhtml-tree-perl
libhttp-cookies-perl libhttp-daemon-perl libhttp-date-perl libhttp-message-perl libhttp-negotiate-perl libio-httplib-perl libio-socket-ssl-perl liblwp-mediatypes-perl liblwp-protocol-http-perl libmailtools-perl
libnet-HTTP-perl libnet-sasl-perl libnet-sasl-perl libtiny-perl liburi-perl libwww-robotrules-perl perl-openssl-defaults
0 upgraded, 0 newly installed, 0 to remove and 14 not upgraded.
Need to get 1,594 B of additional disk space.
After this operation, 5,699 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

sudo cpan install XML::Parser::PerlSAX

Kubernetes Engine

Kubernetes clusters

OVERVIEW COST OPTIMIZATION

Status	Name	Location	Number of nodes	Total vCPUs	Total memory	Notifications	Labels
<input type="checkbox"/>	my-cluster	us-central-1-a	1	2	4 GB	-	<input type="button" value="⋮"/>

CLOUD SHELL Terminal (zeta-ascent-346400) +

```
[myenv] manickam19599@cloudshell:~/final_project [zeta-ascent-346400]$ cpan install XML::Parser::PerlMAX
Loading internal logger. Log::Logperl recommended for better logging
CPAN.pm requires configuration, but most of it can be done automatically.
If you answer 'no' below, you will enter an interactive dialog for each
configuration option instead.

Would you like to configure as much as possible automatically? [yes] yes
Fetching with IMW...
http://www.cpan.org/authors/0malleyrc.txt.gz
Reading '/root/.cpan/sources/authors/0malleyrc.txt.gz'
.....done

Fetching with IMW...
http://www.cpan.org/modules/02packages.details.txt.gz
Reading '/root/.cpan/sources/modules/02packages.details.txt.gz'
Database was generated on Tue, 12 Apr 2022 00:17:03 GMT
.....done

New CPAN.pm version (v2.33) available.
[Currently running version is v2.27]
You have the option to try
  install CPAN
  reload cpan
to both upgrade CPAN.pm and run the new version without leaving
the current session.
```

```
sudo cpan install XML::ReqExp
```

The screenshot shows the Google Cloud Platform interface for managing Kubernetes clusters. The top navigation bar includes tabs for 'Nataraja of Konerirajapuram (Na)' and '[Update] New Google Cloud Platform'. The main title is 'Kubernetes clusters - Kubernetes'. The left sidebar has a 'Clusters' section selected, showing 'my-cluster' listed under 'Kubernetes clusters'. The main content area displays an 'OVERVIEW' table with one row for 'my-cluster'. The table columns are: Status, Name ↑, Location, Number of nodes, Total vCPUs, Total memory, Notifications, Labels, and a three-dot menu. The 'Status' column shows a green checkmark. The 'Name' column shows 'my-cluster'. The 'Location' column shows 'us-central1-a'. The 'Number of nodes' column shows '1'. The 'Total vCPUs' column shows '2'. The 'Total memory' column shows '4 GB'. The 'Notifications' column shows a minus sign. The 'Labels' column is empty. Below the table is a search bar with the placeholder 'Enter property name or value'. A 'Filter' icon is also present. On the far right of the table, there are icons for 'OPERATIONS' and 'HELP ASSISTANT'. At the bottom of the page, there is a 'CLOUD SHELL' terminal window titled '(zeta-ascent-346400)'. The terminal output shows the deployment of a Perl module named 'TJMATHER/XML-RegExp-0.04'. The module is successfully installed in the '/usr/lib/perl5/5.32/XML/RegExp.pm' file. The terminal also shows the configuration of 'allow\_installing\_outdated\_dists' to 'ask/no'. The bottom status bar indicates the user is connected via 'cloudshell' at port 55998.

**sudo cpan install XML::DOM**

The screenshot shows the Google Cloud Platform interface with the title 'Kubernetes clusters - Kubernetes Engine'. A search bar at the top has 'Search k' typed into it. Below the search bar, there are tabs for 'OVERVIEW' and 'COST OPTIMIZATION'. A table lists one cluster: 'my-cluster' located in 'us-central1-a'. The table includes columns for Status, Name, Location, Number of nodes, Total vCPUs, Total memory, Notifications, and Labels. The status of 'my-cluster' is shown as green. The terminal window below shows the output of a Perl module installation process.

```
Installing /usr/local/share/perl5/32.1/XML/DOM/Notation.pm
Installing /usr/local/share/perl5/32.1/XML/DOM/DOMException.pm
Installing /usr/local/man/man3/XML::DOM::PerlMAX.3pm
Installing /usr/local/man/man3/XML::DOM::ProcessingInstruction.3pm
Installing /usr/local/man/man3/XML::DOM::Text.3pm
Installing /usr/local/man/man3/XML::DOM::Entity.3pm
Installing /usr/local/man/man3/XML::DOM::XMLDecl.3pm
Installing /usr/local/man/man3/XML::DOM::Document.3pm
Installing /usr/local/man/man3/XML::DOM::ElementDef.3pm
Installing /usr/local/man/man3/XML::DOM::Character.3pm
Installing /usr/local/man/man3/XML::DOM::Element.3pm
Installing /usr/local/man/man3/XML::DOM::Attr.3pm
Installing /usr/local/man/man3/XML::DOM::Text.3pm
Installing /usr/local/man/man3/XML::DOM::Implementation.3pm
Installing /usr/local/man/man3/XML::Handler::BuildDOM.3pm
Installing /usr/local/man/man3/XML::EntityReference.3pm
Installing /usr/local/man/man3/XML::DOM::ListAttributeCl.3pm
Installing /usr/local/man/man3/XML::DOM::TextDataOp.3pm
Installing /usr/local/man/man3/XML::DOM::Node.3pm
Installing /usr/local/man/man3/XML::DOM::Text.3pm
Installing /usr/local/man/man3/XML::DOM::CharacterData.3pm
Installing /usr/local/man/man3/XML::DOM::CDATASection.3pm
Installing /usr/local/man/man3/XML::DOM::DocumentType.3pm
Installing /usr/local/man/man3/XML::DOM::DocumentFragment.3pm
Installing /usr/local/man/man3/XML::Notation.3pm
Appending installation info to /usr/local/lib/x86_64-linux-gnu/perl5.32.1/perllocal.pod
TOMMYEN/XML-DOM-1.16.tar.gz
/usr/bin/make install ... OR
(myself) mina@minam19559@cloudshell:~/final_project (zeta-ascent-346400)$
```

**Make sure you can run this, which means the ROUGE is successfully installed**

```
./runROUGE-test.pl
```

## Install pyrouge

```
git clone https://github.com/bheinzerling/pyrouge.git  
cd pyrouge
```

The screenshot shows the Google Cloud Platform interface. The top navigation bar has tabs for 'Nataraja of Konerirajapuram Na' (active), '[Update] New Google Cloud Platform', and 'Kubernetes clusters - Kubernetes'. Below the navigation bar, the main header says 'Google Cloud Platform' and 'My Project 35851'. A search bar is present above the left sidebar.

The left sidebar includes sections for 'Kubernetes Engine', 'Clusters' (selected), 'Marketplace', 'Release Notes', and a 'Cloud Shell' section with a terminal tab labeled '(zeta-ascent-346400)'.

The main content area displays 'Kubernetes clusters' with an 'OVERVIEW' tab selected. It lists one cluster named 'my-cluster' located in 'us-central1-a'. The cluster details are as follows:

Status	Name	Location	Number of nodes	Total vCPUs	Total memory	Notifications	Labels
Green checkmark	my-cluster	us-central1-a	1	2	4 GB	-	-

Below the cluster table, there is a 'CLOUD SHELL' terminal window. The terminal output shows the user cloning a GitHub repository into their local project directory:

```
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5 (zeta-ascent-346400)$ pwd  
/home/manickam1959/final_project/RELEASE-1.5.5  
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5 (zeta-ascent-346400)$ git clone https://github.com/bheinzerling/pyrouge.git  
remote: Enumerating objects: 551, done.  
remote: Total 551 (delta 0), reused 0 (delta 0), pack-reused 551  
Receiving objects: 100% (551/551), 123.17 KiB | 5.60 MiB/s, done.  
Receiving deltas: 100% (198/198), done.  
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5 (zeta-ascent-346400)$
```

The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray.

The screenshot shows the Google Cloud Platform interface. In the top navigation bar, there are tabs for 'Nataraja of Konerirajapuram (N...)', '[Update] New Google Cloud Plat...', and 'Kubernetes clusters - Kubernetes'. Below the navigation bar, the main content area displays the 'Kubernetes Engine' section under 'Clusters'. A table lists one cluster: 'my-cluster' located in 'us-central1-a'. The 'OVERVIEW' tab is selected. At the bottom of the page is a 'CLOUD SHELL' terminal window titled '(zeta-ascent-346400)'. The terminal output shows the user cloning a GitHub repository and switching to the 'pyrouge' directory:

```
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5 (zeta-ascent-346400)$ pwd  
/home/manickam1959/final_project/RELEASE-1.5.5  
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5 (zeta-ascent-346400)$ git clone https://github.com/bheinzerling/pyrouge.git  
Cloning into 'pyrouge'...  
remote: Enumerating objects: 551, done.  
remote: Total 551 (delta 0), reused 0 (delta 0), pack-reused 551  
Receiving objects: 100% (551/551), 123.17 Kib | 5.60 MiB/s, done.  
Resolving deltas: 100% (198/198), done.  
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5 (zeta-ascent-346400)$ cd pyrouge  
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (zeta-ascent-346400)$
```

**pip3 install -e .**

The screenshot shows the Google Cloud Platform interface, identical to the previous one, but with a different terminal command. The terminal output shows the user running 'pip3 install -e .' in the 'pyrouge' directory:

```
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (zeta-ascent-346400)$ pip3 install -e .  
Collecting file:///home/manickam1959/final_project/RELEASE-1.5.5/pyrouge  
  Installing collected packages: pyrouge  
    Running setup.py develop for pyrouge  
      Successfully installed pyrouge-0.1.3  
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (zeta-ascent-346400)$
```

**install pytorch 1.1.0 with this comand**

**conda install pytorch-cpu==1.1.0 torchvision-cpu==0.3.0 cpuonly -c pytorch**

```

freetype-3.1.1.0           | 410 KB
pytorch-mutex-1.0           | 3 KB
libpng-1.6.37                | 270 KB
olefile-0.46                 | 48 KB
blosc-1.0.6                  | 4 KB
mkl-lft-1.3.0                | 170 KB
zstd-1.4.9                   | 480 KB
cpymem-2.0                   | 2 KB
pytorch-cpu-1.1.0           | 530 KB
pyyaml-6.4                   | 232 KB
torchvision-cpu-0.3          | 3.8 MB
openjpeg-2.4.0                | 331 KB
libwebp-cpu-1.2.2            | 1.8 MB
pillow-8.3.1                  | 637 KB
libtiff-4.2.0                 | 502 KB
numpy-base-1.19.2             | 4.1 MB
ninja-1.10.0                  | 52 KB
mkl-service-2.3.0             | 52 KB
mkl_random-1.1.1              | 327 KB
intel-openmp-2022.0            | 4.2 MB
numpy-1.19.2                  | 1.8 MB
caesar-f12315.30               | 13.9 KB
six-1.16.0                    | 18 KB
lz4-1.9.3                     | 185 KB
lmodern-2.6.10                 | 313 KB
cffi-1.14.6                   | 170 KB
mkl-2020.2                     | 138.3 MB
Preparing transaction: done
Verifying transaction: done
Executing transaction: done
(myenv) manickam1959@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (zeta-ascent-346400)$

```

**Go back to your final project folder and download pretrained-bert-model**

wget <https://s3.amazonaws.com/models.huggingface.co/bert/bert-large-uncased.tar.gz>

```

(myenv) manickam1959@cloudshell:~/final_project (zeta-ascent-346400)$ wget https://s3.amazonaws.com/models.huggingface.co/bert/bert-large-uncased.tar.gz
--2022-04-12 01:34:06-- https://s3.amazonaws.com/models.huggingface.co/bert/bert-large-uncased.tar.gz
Resolving s3.amazonaws.com (s3.amazonaws.com)... 52.216.129.157
Connecting to s3.amazonaws.com (s3.amazonaws.com)|52.216.129.157|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1248501532 (1.2G) [application/x-tar]
Saving to: 'bert-large-uncased.tar.gz'

bert-large-uncased.tar.gz      100%[=====] 1.16G 32.3MB/s   in 34s
2022-04-12 01:34:40 (35.2 MB/s) - `bert-large-uncased.tar.gz' saved [1248501532/1248501532]
(myenv) manickam1959@cloudshell:~/final_project (zeta-ascent-346400)$

```

**Change the path in BertParent.py in summarizer folder**

self.model = BertModel.from\_pretrained('YOUR\_PROJECT\_Directory/bert-large-uncased.tar.gz')

Screenshot of the Google Cloud Platform Kubernetes Engine interface showing a cluster named "my-cluster".

**Kubernetes Engine** sidebar:

- Clusters
- Marketplace
- Release Notes

**Kubernetes clusters** table:

Status	Name	Location	Number of nodes	Total vCPUs	Total memory	Notifications	Labels
Green	my-cluster	us-central1-a	1	2	4 GB	-	-

**CLOUD SHELL** terminal (zeta-ascent-346400):

```
def __init__(self, model_type: str, size: str):
    # If, and only if, self.model_type is 'large', from pretrained(self.size_handler(size))[model_type]
    self.model = BertForSequenceClassification.from_pretrained('bert-large-uncased', local_files_only=True)
    self.tokenizer = BertTokenizer.from_pretrained('bert-large-uncased')
    self.vector_size = self.token_handler(model_type).from_pretrained(self.size_handler(size))[model_type]
    self.model_type = model_type
    self.model.eval()

def tokenize(self, text) -> torch.Tensor:
    if self.model_type == 'openAi':
        indexed_tokens = self.tokenizer.encode(text)
    else:
        tokenized_text = self.tokenizer.tokenize(text)
        indexed_tokens = self.tokenizer.convert_tokens_to_ids(tokenized_text)
    return torch.tensor([indexed_tokens])

def extract_embeddings(self, text: str, use_hidden=True, squeeze=False) -> ndarray:
    tokens_tensor = self.tokenize(text)
    hidden_states = self.model(tokens_tensor)
    if use_hidden:
        pooled = hidden_states[-2].mean(dim=1)
    if self.model_type == 'openAi':
        pooled = hidden_states.mean(dim=1)
    if squeeze:
        return pooled.detach().numpy().squeeze()
    return pooled

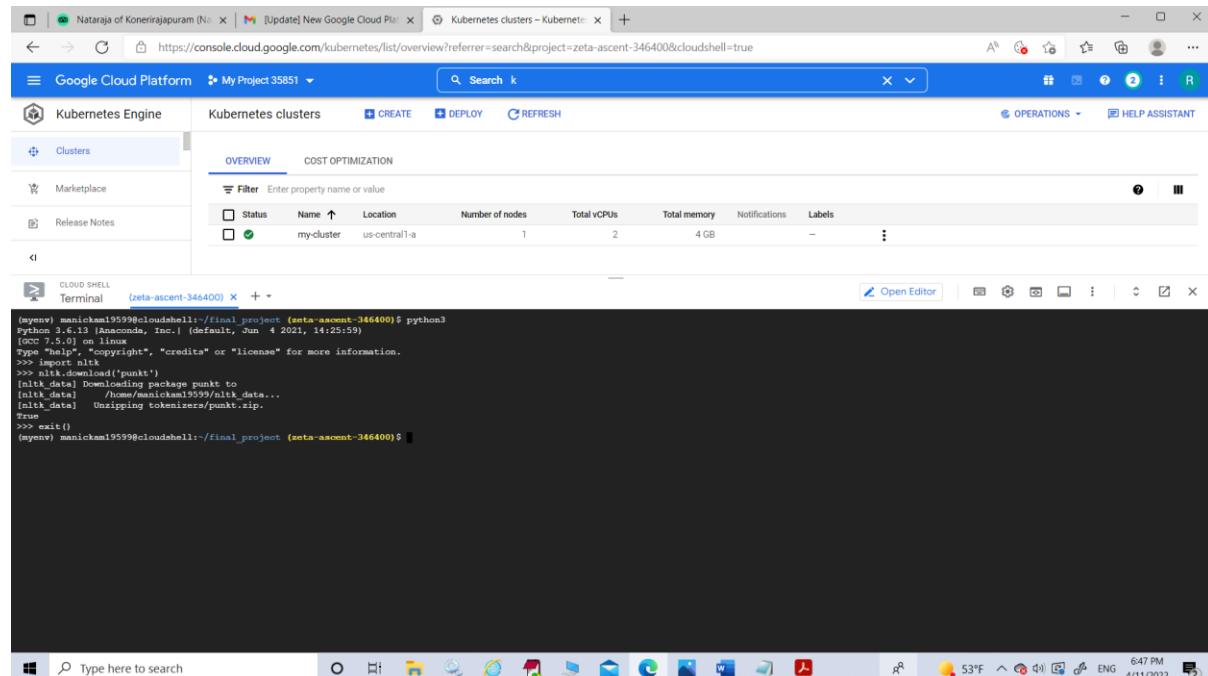
def create_matrix(self, content: list[str], use_hidden=False) -> ndarray:
    train_vec = np.zeros((len(content), self.vector_size))
    for i, t in enumerate(content):
        for i, t in tqdm(enumerate(content)):
```

System tray icons include: battery, signal, 53°F, ENG, 6:41 PM, 4/11/2022.

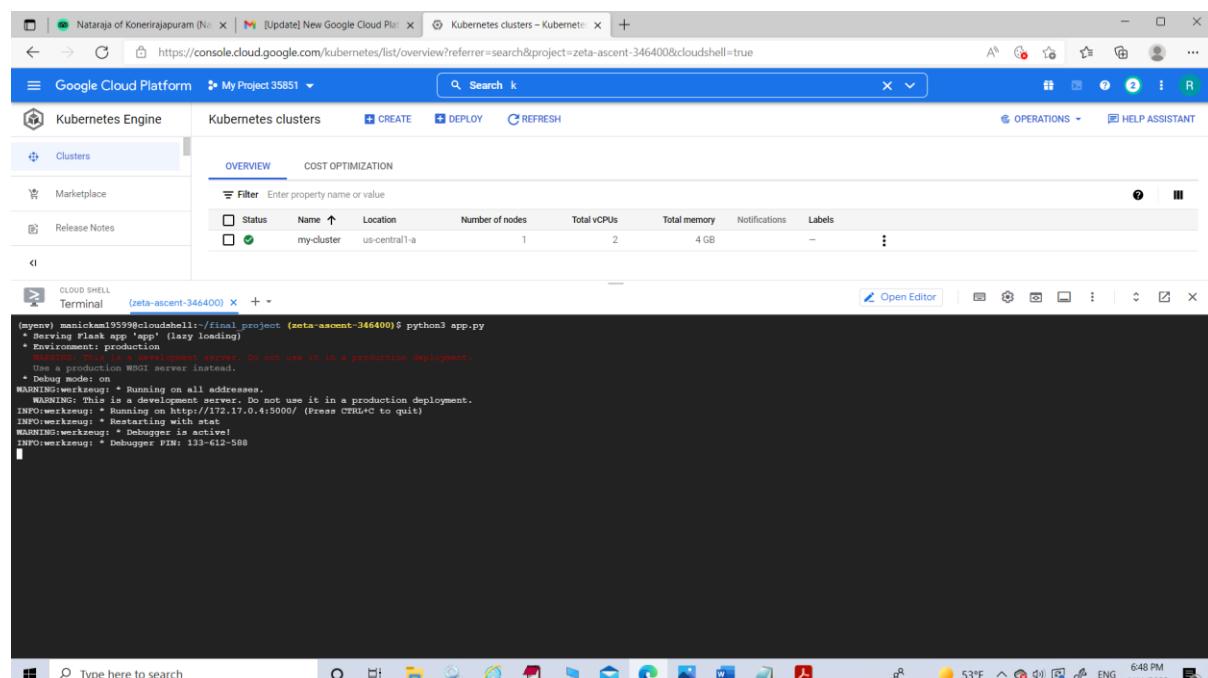
## Install all the following package

```
pip3 install flask  
pip3 install pandas  
pip3 install sklearn  
pip3 install nltk  
pip3 install gensim==3.8.3  
pip3 install pytorch-pretrained-bert  
pip3 install matplotlib==3.0.0
```

## Download punkt

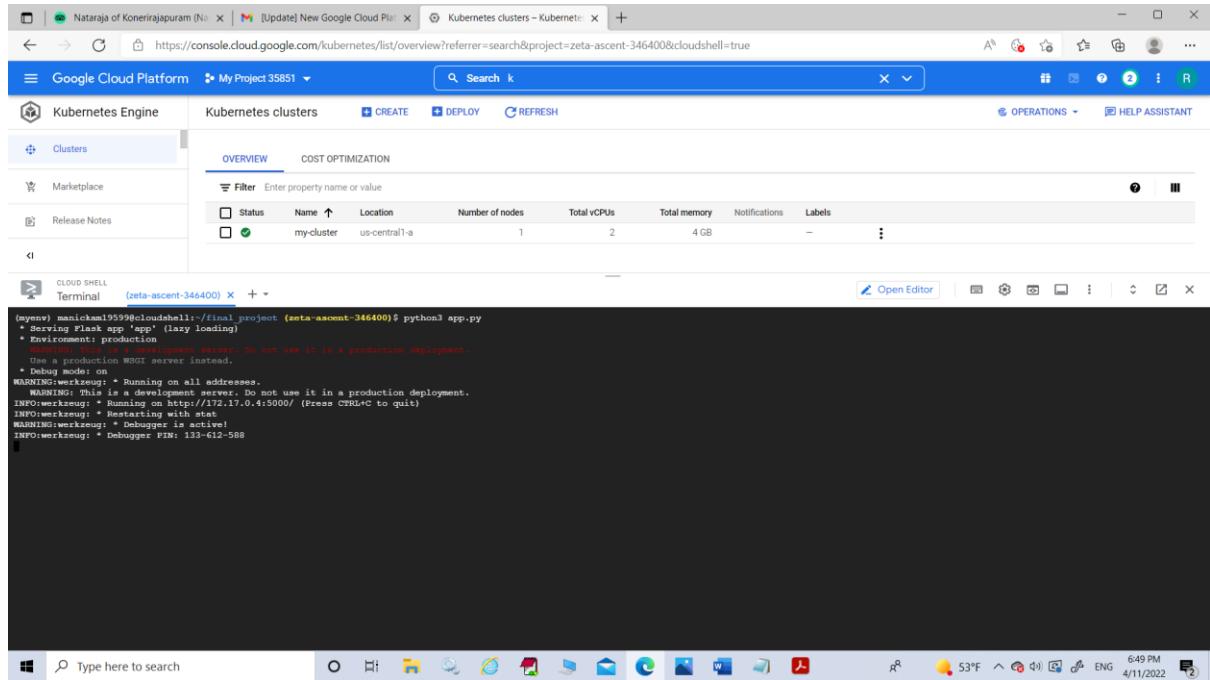


```
(myenv) manickam1959@cloudshell:~/final_project (zeta-ascent-346400)$ python3  
Python 3.6.13 |Anaconda, Inc.| (default, Jun  4 2021, 14:25:59)  
[GCC 7.5.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> import nltk  
>>> nltk.download('punkt')  
[nltk_data] Downloading package punkt to  
[nltk_data]     /home/manickam1959/nltk_data...  
(nltk_data)  Unzipping ./punkt.zip...  
True  
>>> exit()  
(myenv) manickam1959@cloudshell:~/final_project (zeta-ascent-346400)$
```

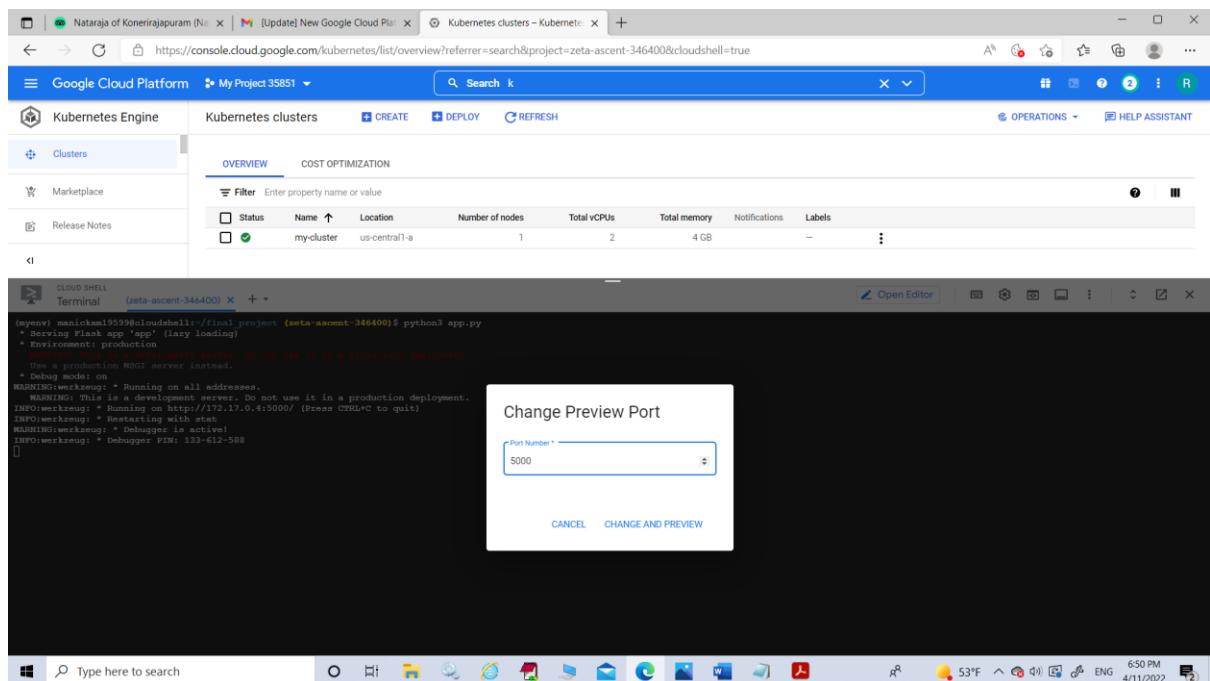


```
(myenv) manickam1959@cloudshell:~/final_project (zeta-ascent-346400)$ python3 app.py  
* Serving Flask app 'app' (lazy loading)  
* Environment: production  
WARNING:werkzeug: * Development mode: do not use it in a production deployment.  
Use a production WSGI server instead.  
* Debug mode: on  
WARNING:werkzeug: * Running on all addresses.  
WARNING:werkzeug: * Run on https://172.17.0.4:5000/ (Press CTRL+C to quit)  
INFO:werkzeug: * Restarting with stat  
WARNING:werkzeug: * Debugger is active!  
INFO:werkzeug: * Debugger PIN: 133-612-508
```

## To Test the text summary Run : app.py



## Use Web Preview and change the port number to 5000



**Copy the text summary you wish to test as given following next page**

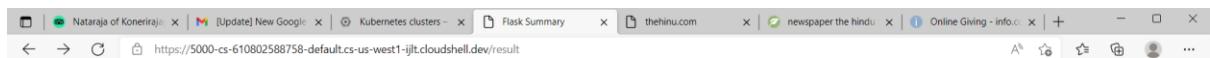
Please paste the contents that you want to summarize:

Potential Summary:

Add To Instructor  
 Add To Student

 20%





Please paste the contents that you want to summarize:

Your donation can help people in areas including Ukraine, Afghanistan, Syria and more. The IRC helps people affected by humanitarian crises recover and rebuild their lives. Help IRC Provide Aid. Every Gift Counts. Charity Watch A Rated. Humanitarian Needs Rising. Any Gift Can Help. Services: Global Health, Disaster

Add To Instructor  
 Add To Student

20%

Potential Summary:

Your donation can help people in areas including Ukraine, Afghanistan, Syria and more.

Total Time cost:59.87s





## Instructor Essay Summary

- Instructor:

Essay Summary: Your donation can help people in areas including Ukraine, Afghanistan, Syria and more.

## Student Grade Rank (From High to Low)

### Student Score Percentile

Name	Student 5	Student 3	Student 1	Student 2	Student 4
student percentile	1.0	0.8	0.6	0.4	0.2

- Student Name: Student 5

Essay Summary: Your donation can help people in areas including Ukraine, Afghanistan, Syria and more.

- Student Name: Student 3

Essay Summary: the cdc recommend that all people wear cloth face masks in public places where it is difficult to maintain a 6-foot (2-meter) distance from others. this will help slow the spread of the virus from asymptomatic people and people who do not know that they have contracted it.

- Student Name: Student 1

Essay Summary: the contagious respiratory illness continues to spread worldwide. health and government officials have asked every one of us to help slow the spread in our communities

- Student Name: Student 2

Essay Summary: the first us deaths related to coronavirus might have occurred weeks earlier than previously thought

- Student Name: Student 4

Essay Summary: the entire speech requires about 10 minutes to read. there are two sections i wish to draw to your attention. the first principle is that you must not fool yourself





Please paste the contents that you want to summarize:

Potential Summary:

A group of UK institutions is going to build a prototype "brain" to control the world's biggest radio telescope.

The Square Kilometre Array (SKA) will initially comprise 197 dishes and 130,000 antennas spread across South Africa and Australia.

Add To Instructor

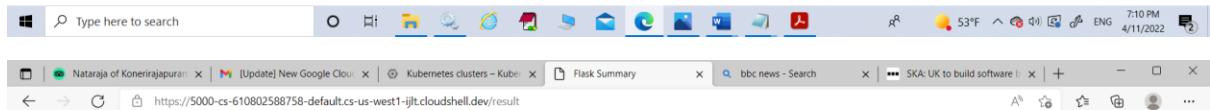
Add To Student

20%

submit

Grade Students

Reset



Please paste the contents that you want to summarize:

A group of UK institutions is going to build a prototype "brain" to control the world's biggest radio telescope.

The Square Kilometre Array (SKA) will initially comprise 197 dishes and 130,000 antennas spread across South Africa and Australia.

Add To Instructor

Add To Student

20%

submit

Grade Students

Reset

Potential Summary:

A group of UK institutions is going to build a prototype "brain" to control the world's biggest radio telescope. "We're talking something like 600 petabytes (600 million gigabytes) per year of data coming out of the SKA, to be delivered to astronomers worldwide," he told BBC News.

Total Time cost:57.55s





## Add To Instructor

Please paste the contents that you want to summarize:

A group of UK institutions is going to build a prototype "brain" to control the world's biggest radio telescope. The Square Kilometre Array (SKA) will initially comprise 197 dishes and 130,000 antennas spread across South Africa and Australia.

Add To Instructor  
 Add To Student

Potential Summary:

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Total Time cost:57.55s





## Add to Student



Please paste the contents that you want to summarize:

```
A group of UK institutions is going to
build a prototype "brain" to control the
world's biggest radio telescope.

The Square Kilometre Array (SKA) will
initially comprise 197 dishes and 130,000
antennas spread across South Africa and
Australia.
```

Potential Summary:

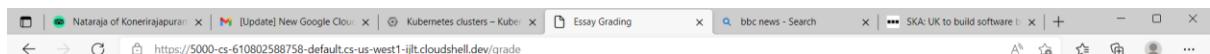
```
A group of UK institutions is going to
build a prototype "brain" to control the
world's biggest radio telescope. "We're
talking something like 600 petabytes (600
million gigabytes) per year of data coming
out of the SKA, to be delivered to
astronomers worldwide," he told BBC News.
```

Total Time cost: 27.49s

- Add To Instructor  
 Add To Student

 20%





## Instructor Essay Summary

- Instructor:

**Essay Summary:** A group of UK institutions is going to build a prototype "brain" to control the world's biggest radio telescope. "We're talking something like 600 petabytes (600 million gigabytes) per year of data coming out of the SKA, to be delivered to astronomers worldwide," he told BBC News.

**Student Grade Rank (From High to Low)**

**Student Score Percentile**

Name Student 1  
**student percentile** 1.0  
• Student Name: Student 1

**Essay Summary:** A group of UK institutions is going to build a prototype "brain" to control the world's biggest radio telescope. "We're talking something like 600 petabytes (600 million gigabytes) per year of data coming out of the SKA, to be delivered to astronomers worldwide," he told BBC News.

