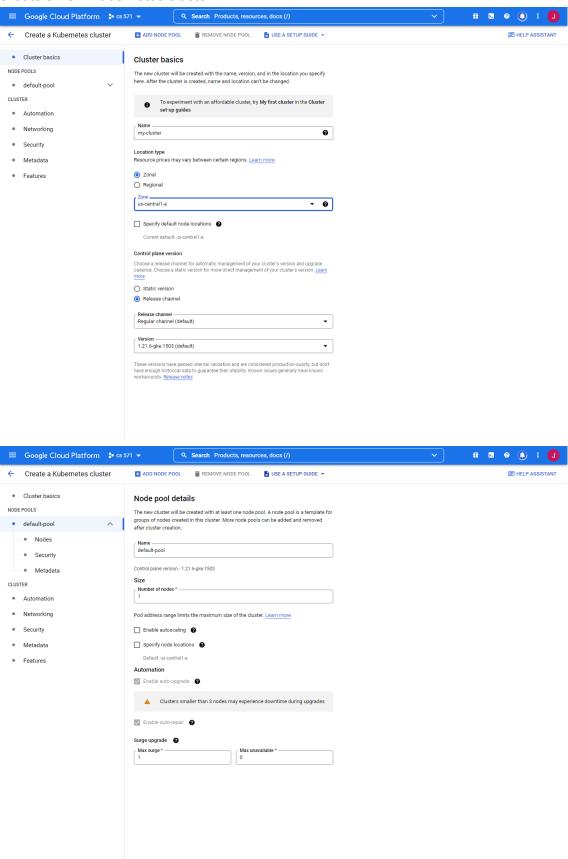
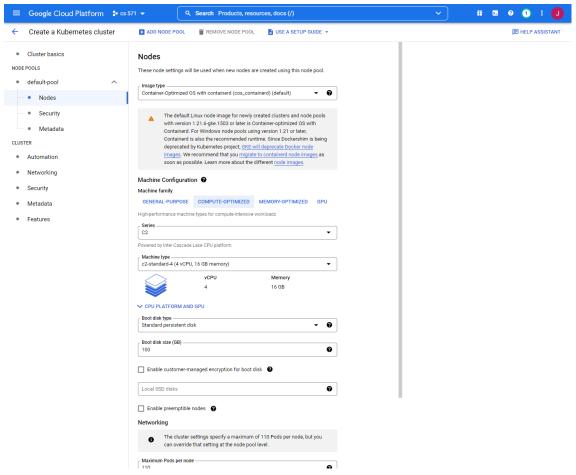
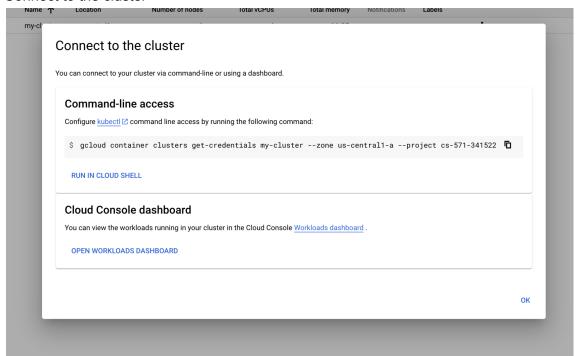
Create a new Kubernetes cluster





Connect to the cluster



```
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
qiani9602@cloudshell:~ (cs-571-341522) § gcloud container clusters get-credentials my-cluster --zone us-centrall-a --project cs-571-341522
Fetching cluster endpoint and auth data.
kubeconfig entry generated for my-cluster.
qiani9602@cloudshell:~ (cs-571-341522)$
```

Download the project from gibhub

```
(base) qian19602@cloudshell:~ (cs-571-341522)$ 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% (136/136), done. remote: Total 191 (delta 91), reused 148 (delta 51), pack-reused 0 Receiving objects: 100% (191/191), 710.58 KiB | 17.33 MiB/s, done. Resolving deltas: 100% (91/91), done. (base) qian19602@cloudshell:~ (cs-571-341522)$
```

Type the following command to download rough.zip to your directory wget --load-cookies /tmp/cookies.txt

"https://docs.google.com/uc?export=download&confirm=\$(wget --quiet --savecookies /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

Unzip rough.zip

```
qian19602@cloudshell:~ (cs-571-341522) $ unzip rough.zip
Archive: rough.zip
    creating: RELEASE-1.5.5/data/
    creating: RELEASE-1.5.5/data/WordNet-2.0-Exceptions/
    inflating: RELEASE-1.5.5/data/WordNet-2.0-Exceptions/exc
    inflating: RELEASE-1.5.5/data/WordNet-2.0-Exceptions/verb.exc
    inflating: RELEASE-1.5.5/data/WordNet-2.0-Exceptions/wordNet-2.0.exc.db
inflating: RELEASE-1.5.5/data/WordNet-2.0-Exceptions/WordNet-2.0.exc.db
inflating: RELEASE-1.5.5/data/WordNet-2.0-Exceptions/WordNet-2.0.exc.db
inflating: RELEASE-1.5.5/data/WordNet-2.0-Exceptions/buildExeptionDB.pl
inflating: RELEASE-1.5.5/data/WordNet-2.0.exc.db
inflating: RELEASE-1.5.5/data/WordNet-2.0.exc.db
inflating: RELEASE-1.5.5/data/WordNet-1.6-exc.db
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/verb.exc
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/wordNet-1.6-exc.db
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/wordNet-1.6-exc.db
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/buildExeptionDB.pl
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/buildExeptionDB.pl
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/buildExeptionDB.pl
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/buildExeptionDB.pl
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/buildExeptionDB.pl
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/buildExeptionDB.pl
inflating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/noun.exc
    creating: RELEASE-1.5.5/data/WordNet-1.6-Exceptions/noun.exc
```

Install libxml-parser-perl, it is essential for installing ROUGE-1.5.5 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 \sim/.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:
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-html-perl libio-socket-ssl-perl libhyp-mediatypes-perl
libhyp-protocol-https-perl libmailtools-perl libnet-http-perl libnet-ssl-perl libnet-ssl-perl
libtry-tiny-perl liburi-perl libwww-perl libwww-robotrules-perl perl-openssl-defaults
Suggested packages:
Suggested packages:
libdigest-hmac-perl libgssapi-perl libcrypt-ssleay-perl libauthen-ntlm-perl
The following NEW 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-html-perl libio-socket-ssl-perl libhup-mediatypes-perl
liblwp-protocol-https-perl libmailtools-perl libnet-http-perl libnet-smtp-ssl-perl libnet-ssleay-perl
```

sudo cpan install XML::Parser::PerlSAX

```
qian19602@cloudshell:~/final_project (cs-571-341522)$ cd RELEASE-1.5.5
qian19602@cloudshell:~/final_project/RELEASE-1.5.5 (cs-571-341522)$ sudo cpan install XML::Parser::PerlSAX
Loading internal logger. Log::Log4perl 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 LWP:
http://www.cpan.org/authors/01mailrc.txt.gz
Reading '/root/.cpan/sources/authors/01mailrc.txt.gz'
Fetching with LWP:
http://www.cpan.org/modules/02packages.details.txt.gz
Reading '/root/.cpan/sources/modules/02packages.details.txt.gz'
Database was generated on Mon, 11 Apr 2022 20:55:46 GMT
```

sudo cpan install XML::RegExp

```
qian19602@cloudshell:~/final_project/RELEASE-1.5.5 (cs-571-341522)$ sudo cpan install XML::RegExp Loading internal logger. Log::Log4perl recommended for better logging Reading '/root/.cpan/Metadata' Database was generated on Mon, 11 Apr 2022 20:55:46 GMT Running install for module 'XML::RegExp' Fetching with LWP:
http://www.cpan.org/authors/id/T/TJ/TJMATHER/XML-RegExp-0.04.tar.gz
Fetching with LWP:
 http://www.cpan.org/authors/id/T/TJ/TJMATHER/CHECKSUMS
Checksum for /root/.cpan/sources/authors/id/T/TJ/TJMATHER/XML-RegExp-0.04.tar.gz ok
 Configuring T/TJ/TJMATHER/XML-RegExp-0.04.tar.gz with Makefile.PL Checking if your kit is complete...
 Looks good
Generating a Unix-style Makefile
Writing Makefile for XML::RegExp
Writing MYMETA.yml and MYMETA.json
TJMATHER/XML-RegExp-0.04.tar.gz
/usr/bin/perl Makefile.PL INSTALLDIRS=site -- OK
/usr/bin/perl Makefile.PL INSTALLDRS=Site -- OK
Running make for T/TJ/TJMATHER/XML-RegExp-0.04.tar.gz
cp lib/XML/RegExp.pm blib/lib/XML/RegExp.pm
Manifying 1 pod document
TJMATHER/XML-RegExp-0.04.tar.gz
/usr/bin/make -- OK
The current configuration of allow_installing_outdated_dists is 'ask/no', but for this option we would need 'C PAN::DistnameInfo' installed. Please install 'CPAN::DistnameInfo' as soon as possible. As long as we are not e quipped with 'CPAN::DistnameInfo' this option does not take effect Running make test for TJMATHER/XML-RegExp-0.04.tar.gz
PERL DL NONLAZY=1 "/usr/bin/perl" "-Iblib/lib" "-Iblib/arch" test.pl
```

Sudo cpan install XML::DOM

```
qianl9602@cloudshell:~/final project/RELEASE-1.5.5 (cs-571-341522)$ sudo cpan install XML::DOM
Loading internal logger. Log::Log4perl recommended for better logging
Reading '/root/.cpan/Metadata'

Database was generated on Mon, 11 Apr 2022 20:55:46 GMT
Running install for module 'XML::DOM'
Fetching with LWP:
http://www.cpan.org/authors/id/T/J/JMATHER/XML-DOM-1.46.tar.gz
Checksum for /root/.cpan/sources/authors/id/T/JJ/JMATHER/XML-DOM-1.46.tar.gz ok
'YAML' not installed, will not store persistent state
Configuring T/TJ/TJMATHER/XML-DOM-1.46.tar.gz with Makefile.PL
Checking if your kit is complete...
Looks good
Generating a Unix-style Makefile
Writing Makefile for XML::DOM
Writing MYMETA.yml and MYMETA.json
TJMATHER/XML-DOM-1.46.tar.gz
/usr/bi/perl Makefile.Pl INSTALLDIRS=site -- OK
Running make for T/TJ/TJMATHER/XML-DOM-1.46.tar.gz
cp lib/XML/DOM/NamedNodeMap.pod blib/lib/XML/DOM/NamedNodeMap.pod
cp lib/XML/DOM/NamedNodeMap.pm blib/lib/XML/DOM/CharacterData.pod
cp lib/XML/DOM/NamedNodeMap.pm blib/lib/XML/DOM/NamedNodeMap.pm
cp lib/XML/DOM/NamedNodeMap.pm blib/lib/XML/DOM/NamedNodeMap.pm
cp lib/XML/DOM/Stx.pod blib/lib/XML/DOM/Element.pod
cp lib/XML/DOM/DomException.pm blib/lib/XML/DOM/DMException.pm
cp lib/XML/DOM/DOMException.pm blib/lib/XML/DOM/DMException.pm
cp lib/XML/DOM/DOMException.pm blib/lib/XML/DOM/DATASection.pod
cp lib/XML/DOM/DOMCDATASection.pod blib/lib/XML/DOM/DATASection.pod
cp lib/XML/DOM/DOMCDATASection.pod blib/lib/XML/DOM/ALT.pod
cp lib/XML/DOM/ProcessingInstruction.pod blib/lib/XML/DOM/ProcessingInstruction.pod
```

Make sure you can run this, which means the ROUGE is successfully installed ./runROUGE-test.pl

```
qian19602@cloudshell:~/final project/RELEASE-1.5.5 (cs-571-341522)$ ./runROUGE-test.pl
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -a ROUGE-test.xml > ../sample-output/ROUGE-test
t-c95-2-1-U-r1000-n4-w1.2-a.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -a -m ROUGE-test.xml > ../sample-output/ROUGE-test-c95-2-1-U-r1000-n4-w1.2-a-m.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -a -m -s ROUGE-test.xml > ../sample-output/ROU
GE-test-c95-2-1-U-r1000-n4-w1.2-a-m-s.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -1 10 -a ROUGE-test.xml > ../sample-output/ROU
GE-test-c95-2-1-U-r1000-n4-w1.2-110-a.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -1 10 -a -m ROUGE-test.xml > ../sample-output/
ROUGE-test-c95-2-1-U-r1000-n4-w1.2-110-a-m.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -1 10 -a -m -s ROUGE-test.xml > ../sample-output/
ROUGE-test-c95-2-1-U-r1000-n4-w1.2-110-a-m-s.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -1 10 -a -m -s ROUGE-test.xml > ../sample-output/
CGE-test-c95-2-1-U-r1000-n4-w1.2-10-a-m-s.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -b 75 -a ROUGE-test.xml > ../sample-output/ROU
GE-test-c95-2-1-U-r1000-n4-w1.2-b75-a.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -b 75 -a -m ROUGE-test.xml > ../sample-output/
ROUGE-test-c95-2-1-U-r1000-n4-w1.2-b75-a.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -b 75 -a -m -s ROUGE-test.xml > ../sample-output/
ROUGE-test-c95-2-1-U-r1000-n4-w1.2-b75-a.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -b 75 -a -m -s ROUGE-test.xml > ../sample-output/
ROUGE-test-c95-2-1-U-r1000-n4-w1.2-b75-a.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -b 75 -a -m -s ROUGE-test.xml > ../sample-output/
```

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

```
qian19602@cloudshell:~/final_project/RELEASE-1.5.5 (cs-571-341522)$ 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 | 5.35 MiB/s, done.
Resolving deltas: 100% (198/198), done.
qian19602@cloudshell:~/final_project/RELEASE-1.5.5 (cs-571-341522)$ cd pyrouge
qian19602@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (cs-571-341522)$ ls
bin CHANGES.txt LICENSE.txt PKG-INFO pyrouge README.rst setup.cfg setup.py
```

Download the latest shell script wget

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

Create and activate a Python environment conda create -n myenv python=3.6

```
qian19602@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (cs-571-341522)$ conda activate base
(base) qian19602@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (cs-571-341522)$ conda create -n myenv pytho
n=3.6
WARNING: A conda environment already exists at '/home/qian19602/miniconda3/envs/myenv'
Remove existing environment (y/[n])? y

Collecting package metadata (current_repodata.json): done
Solving environment: done

==> WARNING: A newer version of conda exists. <==
    current version: 4.11.0
    latest version: 4.12.0

Please update conda by running
$ conda update -n base -c defaults conda</pre>
```

conda activate myenv

```
(base) qian19602@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (cs-571-341522)$ conda activate myenv (myenv) qian19602@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (cs-571-341522)$ pip3 install -e .
```

pip install -e.

```
(myenv) qian19602@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (cs-571-341522)$ pip3 install -e .

Obtaining file:///home/qian19602/final_project/RELEASE-1.5.5/pyrouge
Installing collected packages: pyrouge
Running setup.py develop for pyrouge
Successfully installed pyrouge-0.1.3
```

install pytorch 1.1.0 with this comand conda install pytorch-cpu==1.1.0 torchvision-cpu==0.3.0 cpuonly -c pytorch

```
(myenv) qian19602@cloudshell:~/final_project/RELEASE-1.5.5/pyrouge (cs-571-341522)$ conda install pytorch-cpu==1.1.0 torchvision-cpu==0.3.0 cpuonly -c pytorch
Collecting package metadata (current_repodata.json): done
Solving environment: failed with initial frozen solve. Retrying with flexible solve.
Solving environment: failed with repodata from current_repodata.json, will retry with next repodata source.
Collecting package metadata (repodata.json): done
Solving environment: done
==> WARNING: A newer version of conda exists. <== current version: 4.11.0 latest version: 4.12.0
Please update conda by running
       $ conda update -n base -c defaults conda
## Package Plan ##
   environment location: /home/qian19602/miniconda3/envs/myenv
   added / updated specs:
       - cpuonly
- pytorch-cpu==1.1.0
- torchvision-cpu==0.3.0
The following packages will be downloaded:
                                                                               build
       blas-1.0
       certifi-2021.5.30
                                                              py36h06a4308_0
py36h400218f_0
                                                                                                        139 KB
       cffi-1.14.6
                                                                                                        220 KB
       cpuonly-2.0
freetype-2.11.0
                                                                                                        2 KB
618 KB
                                                                 h70c0345 0
```

Go back to your final project folder and download pretrained-bert-model wget https://s3.amazonaws.com/models.huggingface.co/bert/bert-largeuncased.tar.gz

Change the path in BertParent.py in summarizer folder self.model = BertModel.from_pretrained('YOUR_PROJECT_Directory/bert-largeuncased.tar.gz')

```
def __init__(self, model_type: str, size: str):
    #self.model = self.model handler[model_type].from pretrained(self.size handler[size][model_type])
    self.model = BertModel.from_pretrained(/home/glan19602/final_project//part=large=uncased.tar.c]])
    self.tokenizer = self.token handler[model_type].from_pretrained(self.size_handler[size][model_type])
    self.vector_size = self.vector_handler[size][model_type]
    self.model_type = model_type
    self.model.eval()
```

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

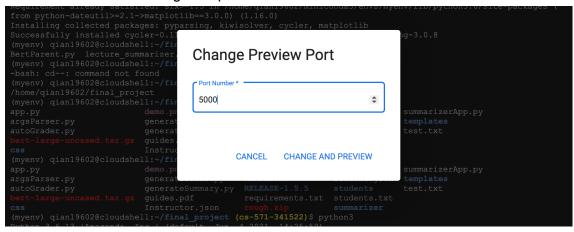
Download punkt package with nltk

```
(myenv) qian19602@cloudshell:~/final_project (cs-571-341522)$ 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 /home/qian19602/nltk_data...
[nltk_data] Unzipping tokenizers/punkt.zip.
True
>>> exit()
(myenv) qian19602@cloudshell:~/final_project (cs-571-341522)$
```

Run app.py

```
(myenv) qianl9602@cloudshell:~/final_project (cs-571-341522)$ python3 app.py
* Serving Flask app 'app' (lazy loading)
* Environment: production
MARNING: This is a development server. Do not use it in a production deployment.
Use a production WSGI server instead.
* Debug mode: on
WARNING: werkzeug: * Running on all addresses.
    WARNING: This is a development server. Do not use it in a production deployment.
INFO:werkzeug: * Running on http://172.17.0.4:5000/ (Press CTRL+C to quit)
INFO:werkzeug: * Restarting with stat
WARNING:werkzeug: * Debugger is active!
INFO:werkzeug: * Debugger PIN: 100-114-127
```

se Web Preview and change the port number to 5000

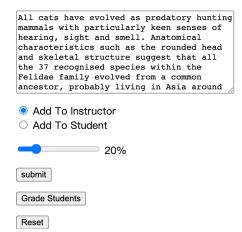


Click change and preview

Please paste the contents that you want to summarize:	Potential Summary:
Add To InstructorAdd To Student	
20%	
submit	
Grade Students	
Reset	

Test app

Please paste the contents that you want to summarize:



Potential Summary:

All cats have evolved as predatory hunting mammals with particularly keen senses of hearing, sight and smell. The rise and fall of sea levels over many millennia helped both to create conditions where Felidae species could migrate and occupy other geographical locations (when sea levels were low) and isolate the

Total Time cost:34.37s

Deploy this app on Kubernetes.

Create a Dockerfile:

```
FROM python:3.9-buster

COPY . /app

WORKDIR /app

RUN pip3 install -r requirements.txt

ENV PORT 5000

EXPOSE 5000

EXTRYPOINT ["python3"]

CMD ["app.py"]
```

buliding a docker image.

```
gian19602@cloudshell:~/final_project (cs-571-341522)$ sudo docker build -t qian19602/automated_essay_s .
Sending build context to Docker daemon 1.342GB
Step 1/8 : FROM python:3.9-buster
3.9-buster: Pulling from library/python
b28lebec60d2: Pull complete
74dae484504b: Pull complete
e8d46b51c7c: Pull complete
517ebafd9747: Pull complete
517ebafd9747: Pull complete
510232170046: Pull complete
c5be29056a71: Pull complete
ef34a4fcd9c7: Pull complete
ef34a4fcd9c7: Pull complete
stsatus: Downloaded newer image for python:3.9-buster
---> blce4d348e6a
Step 2/8 : COPY . /app
---> lccb7408e2ea
Step 3/8 : WORKDIR /app
---> Running in be4cbb90c7b
Removing intermediate container be4cbb90c7b
---> e1164fdf3437
Step 4/8 : RUN pip3 install -r requirements.txt
---> Running in 73b7aed0b716
Collecting gensim==3.8.3
```

sudo docker push qian19602/automated_essay_s

```
qian19602@cloudshell:~/final project (cs-571-341522)$ sudo docker push qian19602/automated essay s
 Using default tag: latest
The push refers to repository [docker.io/qian19602/automated_essay_s] 293ca305blb7: Pushed
d55bc8b90600: Pushed 4c9efc7d50b2: Mounted from library/python
5fffd512537b: Mounted from library/python fef7b0285d08: Mounted from library/python
dad95716bb70: Mounted from library/python 627d03f17169: Mounted from library/python
627d03f17169: Mounted from library/python 6b9b07bf46f5: Mounted from library/python 88139fe969ab: Mounted from library/python 83f556e4c108: Mounted from library/python 7362f7f77851: Mounted from library/python latest: digest: sha256:a0b9bf6bf278b0led776e300eed94a7f9fde2cdda86e4fc49def5fb325a07149 size: 2645 qian19602@cloudshell:~/final_project (cs-571-341522)$
```

create aes-deployment.ymal

```
piVersion: apps/V1
ind: Deployment
         aes-deployment
    app: aes-deployment
        app: aes-deployment
 app. aes-deployment
template:
metadata:
labels:
app: aes-deployment
             imagePullPolicy: Alwa
name: aes-deployment
ports:
                                      y: Always
```

create aes-service.ymal

```
Service
   bookshelf-service
app aes-deployment
```

minikube start

```
qiani96028cloudsheil:-/final_project (cs-5/1-341522)$ minikube start

* minikube v1.25.2 on Debian 11.2 (amd64)

- MINIKUBE_FORCE_SYSTEMD=true

- MINIKUBE_HOME=/google/minikube

- MINIKUBE_MANTUPDATENOTIFICATION=false

* Automatically selected the docker driver. Other choices: none, ssh

* Starting control plane node minikube in cluster minikube

* Pulling base image ...

* Downloading Kubernetes v1.23.3 preload ...

> preloaded-images-k8s-v17-v1...: 505.68 MiB / 505.68 MiB 100.00% 264.56 M

* Creating docker container (CPUs=2, Memory=4000MB) ...

* Preparing Kubernetes v1.23.3 on Docker 20.10.12 ...

- kubelet.cgroups-per-qos-false

- kubelet.enforce-node-allocatable=""

- kubelet.housekeeping-interval=5m

- Generating certificates and keys ...

- Booting up control plane ...

- Configuring RBAC rules ...

* Verifying Kubernetes components...
    - Configuring Rober Tutes ...
- Verifying Kubernetes components...
- Using image gcr.io/k8s-minikube/storage-provisioner:v5
* Enabled addons: default-storageclass, storage-provisioner
* Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
```

minikube addons enable ingress

kubectl apply -f aes-deployment.yaml

```
qian19602@cloudshell:~/final_project (cs-571-341522)$ kubectl apply -f aes-deployment.yaml
deployment.apps/aes-deployment created
qian19602@cloudshell:~/final_project (cs-571-341522)$ kubectl apply -f aes-service.ya
```

kubectl apply -f aes-service.yaml

qian19602@cloudshell:~/final_project (cs-571-341522)\$ kubectl apply -f aes-service.yaml service/aes-service created qian19602@cloudshell:~/final_project (cs-571-341522)\$	
qian19602@cloudshell:~/final_project (cs-571-341522)	
qian19602@cloudshell:~/final_project (cs-571-341522)\$ kubectl get pods NAME READY STATUS RESTARTS AGE aes-deployment-6d855d84b-7j51g 1/1 Running 0 10m	
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