1. Download the latest shell script

```
chenghy1017@cloudshell:~/aes (my-project-342502)$ wget https://repo.anaconda.com/mini
conda/Miniconda3-latest-Linux-x86_64.sh
--2022-03-18 03:21:50--  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, 2606:4
700::6810:8303, ...
Connecting to repo.anaconda.com (repo.anaconda.com)|104.16.130.3|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 75660608 (72M) [application/x-sh]
Saving to: 'Miniconda3-latest-Linux-x86_64.sh'

Miniconda3-latest-Lin 100%[=====================>]  72.16M   189MB/s    in 0.4s

2022-03-18 03:21:51 (189 MB/s) - 'Miniconda3-latest-Linux-x86_64.sh' saved [75660608/
75660608]
```

2. Make the miniconda installation script executable

```
chenghy1017@cloudshell:~/aes (my-project-342502)$ chmod +x Miniconda3-latest-Linux-x8
6_64.sh
```

3. Run miniconda installation script

```
==> 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!
```

4. Create and activate a Python environment

```
(base) chenghy1017@cs-344315516339-default:~/aes$ conda create -n myenv python=3.6
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
```

```
(base) chenghy1017@cs-344315516339-default:~/aes$ conda activate myenv
(myenv) chenghy1017@cs-344315516339-default:~/aes$
```

5. Download the project from github

```
(myenv) chenghy1017@cs-344315516339-default:~$  git clone https://github.com/Quan25/f
lask-summary.git aes
Cloning into 'aes'...
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 | 15.45 MiB/s, done.
Resolving deltas: 100% (91/91), done.
```

6. Download rough.zip to the directory

```
(myenv) chenghy1017@cs-344315516339-default:~/aes$ wget --load-cookies /tmp/cookies.t
xt "https://docs.google.com/uc?export=download&confirm=$(wget --quiet --savecookies /
tmp/cookies.txt --keep-session-cookies --no-check-certificate 'https://drive.google.c
om/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/cookie
s.txt
wget: unrecognized option '--savecookies'
Usage: wget [OPTION]... [URL]...
```

7. Unzip rough.zip

```
(myenv) chenghy1017@cs-344315516339-default:~/aes$ unzip rough.zip
Archive:  rough.zip
   creating: RELEASE-1.5.5/
   creating: RELEASE-1.5.5/data/
   creating: RELEASE-1.5.5/data/WordNet-2.0-Exceptions/
```

8. Install libxml-parser-perl, it is essential for installing ROUGE-1.5.5

```
(myenv) chenghy1017@cs-344315516339-default:~/aes$ 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
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes$ sudo cpan install XML::Parser::Per
lSAX
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'
.....................................................................DONE
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 Fri, 18 Mar 2022 03:17:03 GMT
.............
  New CPAN.pm version (v2.29) available.
  [Currently running version is v2.27]
  You might want to try
    install CPAN
    reload cpan
  to both upgrade CPAN.pm and run the new version without leaving
  the current session.
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes$ sudo cpan install XML::RegExp
Loading internal logger. Log::Log4perl recommended for better logging
Reading '/root/.cpan/Metadata'
  Database was generated on Fri, 18 Mar 2022 03:17:03 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
'YAML' not installed, will not store persistent state
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
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 thi
s option we would need 'CPAN::DistnameInfo' installed. Please install 'CPAN::Distname
Info' as soon as possible. As long as we are not equipped with 'CPAN::DistnameInfo' t
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes$ sudo cpan install XML::DOM
Loading internal logger. Log::Log4perl recommended for better logging
Reading '/root/.cpan/Metadata'
  Database was generated on Fri, 18 Mar 2022 03:17:03 GMT
Running install for module 'XML::DOM'
Fetching with LWP:
http://www.cpan.org/authors/id/T/TJ/TJMATHER/XML-DOM-1.46.tar.gz
Checksum for /root/.cpan/sources/authors/id/T/TJ/TJMATHER/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/bin/perl Makefile.PL INSTALLDIRS=site -- OK
Running make for T/TJ/TJMATHER/XML-DOM-1.46.tar.gz
cp lib/XML/DOM/Node.pod blib/lib/XML/DOM/Node.pod
cp lib/XML/DOM/AttDef.pod blib/lib/XML/DOM/AttDef.pod
```

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

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/RELEASE-1.5.5$ ./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-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.x
ml > ../sample-output/ROUGE-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 -l 10 -a ROUGE-test.x
ml > ../sample-output/ROUGE-test-c95-2-1-U-r1000-n4-w1.2-l10-a.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -l 10 -a -m ROUGE-tes
t.xml > ../sample-output/ROUGE-test-c95-2-1-U-r1000-n4-w1.2-l10-a-m.out
../ROUGE-1.5.5.pl -e ../data -c 95 -2 -1 -U -r 1000 -n 4 -w 1.2 -l 10 -a -m -s ROUGE-
test.xml > ../sample-output/ROUGE-test-c95-2-1-U-r1000-n4-w1.2-l10-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.x
ml > ../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 ROUGE-tes
t.xml > ../sample-output/ROUGE-test-c95-2-1-U-r1000-n4-w1.2-b75-a-m.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-m-s.out
../ROUGE-1.5.5.pl -e ../data -3 HM -z SIMPLE DUC2002-BE-F.in.26.lst 26 > ../sample-ou
tput/DUC2002-BE-F.in.26.lst.out
../ROUGE-1.5.5.pl -e ../data -3 HM DUC2002-BE-F.in.26.simple.xml 26 > ../sample-outpu
t/DUC2002-BE-F.in.26.simple.out
../ROUGE-1.5.5.pl -e ../data -3 HM -z SIMPLE DUC2002-BE-L.in.26.lst 26 > ../sample-ou
tput/DUC2002-BE-L.in.26.lst.out
../ROUGE-1.5.5.pl -e ../data -3 HM DUC2002-BE-L.in.26.simple.xml 26 > ../sample-outpu
t/DUC2002-BE-L.in.26.simple.out
../ROUGE-1.5.5.pl -e ../data -n 4 -z SPL DUC2002-ROUGE.in.26.spl.lst 26 > ../sample-o
utput/DUC2002-ROUGE.in.26.spl.lst.out
../ROUGE-1.5.5.pl -e ../data -n 4 DUC2002-ROUGE.in.26.spl.xml 26 > ../sample-output/D
UC2002-ROUGE.in.26.spl.out
```

10. Install pyrouge

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/RELEASE-1.5.5$ 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 | 5.13 MiB/s, done.
Resolving deltas: 100% (198/198), done.
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/RELEASE-1.5.5/pyrouge$ pip install -e .
Obtaining file:///home/chenghy1017/aes/RELEASE-1.5.5/pyrouge
Installing collected packages: pyrouge
  Running setup.py develop for pyrouge
Successfully installed pyrouge-0.1.3
```

11. install pytorch 1.1.0 with this command

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/RELEASE-1.5.5/pyrouge$ 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
```

12. Download pretrained-bert-model

```
(myenv) chenghy1017@cs-344315516339-default:~/aes$ wget https://s3.amazonaws.com/models.huggingface.co/bert/bert-large-uncased.tar.gz
--2022-03-18 04:21:26--  https://s3.amazonaws.com/models.huggingface.co/bert/bert-large-uncased.tar.gz
Resolving s3.amazonaws.com (s3.amazonaws.com)... 52.217.98.182
Connecting to s3.amazonaws.com (s3.amazonaws.com)|52.217.98.182|: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.ta 100%[===================>]   1.16G  47.2MB/s    in 29s

2022-03-18 04:21:55 (40.4 MB/s) - 'bert-large-uncased.tar.gz' saved [1248501532/1248501532]
```

13. Install all the following package

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/summarizer$ pip3 install flask
Collecting flask
  Downloading Flask-2.0.3-py3-none-any.whl (95 kB)
     |████████████████████████████████| 95 kB 3.1 MB/s
Collecting itsdangerous>=2.0
  Downloading itsdangerous-2.0.1-py3-none-any.whl (18 kB)
Collecting click>=7.1.2
  Downloading click-8.0.4-py3-none-any.whl (97 kB)
     |████████████████████████████████| 97 kB 7.0 MB/s
Collecting Jinja2>=3.0
  Downloading Jinja2-3.0.3-py3-none-any.whl (133 kB)
     |████████████████████████████████| 133 kB 32.7 MB/s
Collecting Werkzeug>=2.0
  Downloading Werkzeug-2.0.3-py3-none-any.whl (289 kB)
     |████████████████████████████████| 289 kB 39.4 MB/s
Collecting importlib-metadata
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/summarizer$ pip3 install pandas
Collecting pandas
  Downloading pandas-1.1.5-cp36-cp36m-manylinux1_x86_64.whl (9.5 MB)
     |████████████████████████████████| 9.5 MB 10.1 MB/s
Collecting python-dateutil>=2.7.3
  Downloading python_dateutil-2.8.2-py2.py3-none-any.whl (247 kB)
     |████████████████████████████████| 247 kB 40.5 MB/s
Requirement already satisfied: numpy>=1.15.4 in /home/chenghy1017/miniconda3/envs/mye
nv/lib/python3.6/site-packages (from pandas) (1.19.2)
Collecting pytz>=2017.2
  Downloading pytz-2021.3-py2.py3-none-any.whl (503 kB)
     |████████████████████████████████| 503 kB 35.7 MB/s
Requirement already satisfied: six>=1.5 in /home/chenghy1017/miniconda3/envs/myenv/li
b/python3.6/site-packages (from python-dateutil>=2.7.3->pandas) (1.16.0)
Installing collected packages: pytz, python-dateutil, pandas
Successfully installed pandas-1.1.5 python-dateutil-2.8.2 pytz-2021.3
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/summarizer$ pip3 install sklearn
Collecting sklearn
  Downloading sklearn-0.0.tar.gz (1.1 kB)
Collecting scikit-learn
  Downloading scikit_learn-0.24.2-cp36-cp36m-manylinux2010_x86_64.whl (22.2 MB)
     |████████████████████████████████| 22.2 MB 7.3 MB/s
Collecting joblib>=0.11
  Downloading joblib-1.1.0-py2.py3-none-any.whl (306 kB)
     |████████████████████████████████| 306 kB 34.5 MB/s
Collecting scipy>=0.19.1
  Downloading scipy-1.5.4-cp36-cp36m-manylinux1_x86_64.whl (25.9 MB)
     |████████████████████████████████| 25.9 MB 33.6 MB/s
Requirement already satisfied: numpy>=1.13.3 in /home/chenghy1017/miniconda3/envs/mye
nv/lib/python3.6/site-packages (from scikit-learn->sklearn) (1.19.2)
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/summarizer$ pip3 install nltk
Collecting nltk
  Downloading nltk-3.6.7-py3-none-any.whl (1.5 MB)
     |████████████████████████████████| 1.5 MB 6.9 MB/s
Collecting regex>=2021.8.3
  Downloading regex-2022.3.15-cp36-cp36m-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (749 kB)
     |████████████████████████████████| 749 kB 40.9 MB/s
Requirement already satisfied: click in /home/chenghy1017/miniconda3/envs/myenv/lib/python3.6/site-packages (from nltk) (8.0.4)
Collecting tqdm
  Downloading tqdm-4.63.0-py2.py3-none-any.whl (76 kB)
     |████████████████████████████████| 76 kB 5.3 MB/s
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/summarizer$ pip3 install gensim==3.8.3
Collecting gensim==3.8.3
  Downloading gensim-3.8.3-cp36-cp36m-manylinux1_x86_64.whl (24.2 MB)
     |████████████████████████████████| 24.2 MB 8.1 MB/s
Requirement already satisfied: six>=1.5.0 in /home/chenghy1017/miniconda3/envs/myenv/lib/python3.6/site-packages (from gensim==3.8.3) (1.16.0)
Collecting smart-open>=1.8.1
  Downloading smart_open-5.2.1-py3-none-any.whl (58 kB)
     |████████████████████████████████| 58 kB 7.7 MB/s
Requirement already satisfied: numpy>=1.11.3 in /home/chenghy1017/miniconda3/envs/myenv/lib/python3.6/site-packages (from gensim==3.8.3) (1.19.2)
Requirement already satisfied: scipy>=0.18.1 in /home/chenghy1017/miniconda3/envs/myenv/lib/python3.6/site-packages (from gensim==3.8.3) (1.5.4)
Installing collected packages: smart-open, gensim
Successfully installed gensim-3.8.3 smart-open-5.2.1
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/summarizer$ pip3 install pytorch-pretrained-bert
Collecting pytorch-pretrained-bert
  Downloading pytorch_pretrained_bert-0.6.2-py3-none-any.whl (123 kB)
     |████████████████████████████████| 123 kB 8.2 MB/s
Collecting requests
  Downloading requests-2.27.1-py2.py3-none-any.whl (63 kB)
     |████████████████████████████████| 63 kB 1.9 MB/s
Requirement already satisfied: regex in /home/chenghy1017/miniconda3/envs/myenv/lib/python3.6/site-packages (from pytorch-pretrained-bert) (2022.3.15)
Requirement already satisfied: tqdm in /home/chenghy1017/miniconda3/envs/myenv/lib/python3.6/site-packages (from pytorch-pretrained-bert) (4.63.0)
Requirement already satisfied: numpy in /home/chenghy1017/miniconda3/envs/myenv/lib/python3.6/site-packages (from pytorch-pretrained-bert) (1.19.2)
Collecting boto3
  Downloading boto3-1.21.21-py3-none-any.whl (132 kB)
     |████████████████████████████████| 132 kB 43.6 MB/s
```

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/summarizer$ pip3 install matplotlib
==3.0.0
Collecting matplotlib==3.0.0
  Downloading matplotlib-3.0.0-cp36-cp36m-manylinux1_x86_64.whl (12.8 MB)
     |                                | 12.8 MB 8.1 MB/s
Collecting cycler>=0.10
  Downloading cycler-0.11.0-py3-none-any.whl (6.4 kB)
Requirement already satisfied: numpy>=1.10.0 in /home/chenghy1017/miniconda3/envs/mye
nv/lib/python3.6/site-packages (from matplotlib==3.0.0) (1.19.2)
Requirement already satisfied: python-dateutil>=2.1 in /home/chenghy1017/miniconda3/e
nvs/myenv/lib/python3.6/site-packages (from matplotlib==3.0.0) (2.8.2)
Collecting pyparsing!=2.0.4,!=2.1.2,!=2.1.6,>=2.0.1
  Downloading pyparsing-3.0.7-py3-none-any.whl (98 kB)
     |                                | 98 kB 8.0 MB/s
Collecting kiwisolver>=1.0.1
  Downloading kiwisolver-1.3.1-cp36-cp36m-manylinux1_x86_64.whl (1.1 MB)
     |                                | 1.1 MB 43.4 MB/s
```

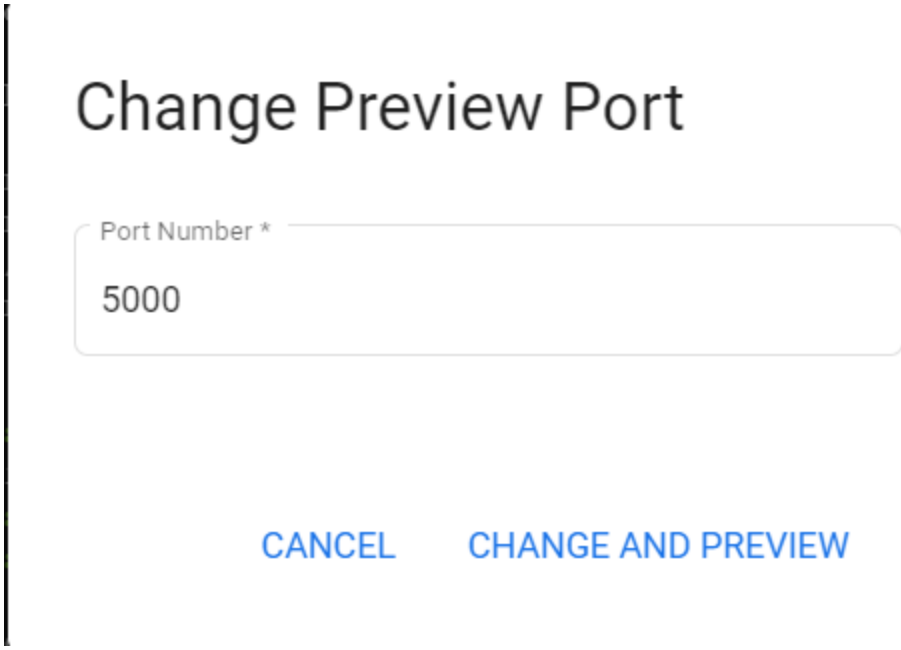
14. Download punkt package with nltk

```
(myenv) chenghy1017@cs-344315516339-default:~/aes/summarizer$ 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/chenghy1017/nltk_data...
[nltk_data]   Unzipping tokenizers/punkt.zip.
True
>>> exit()
```

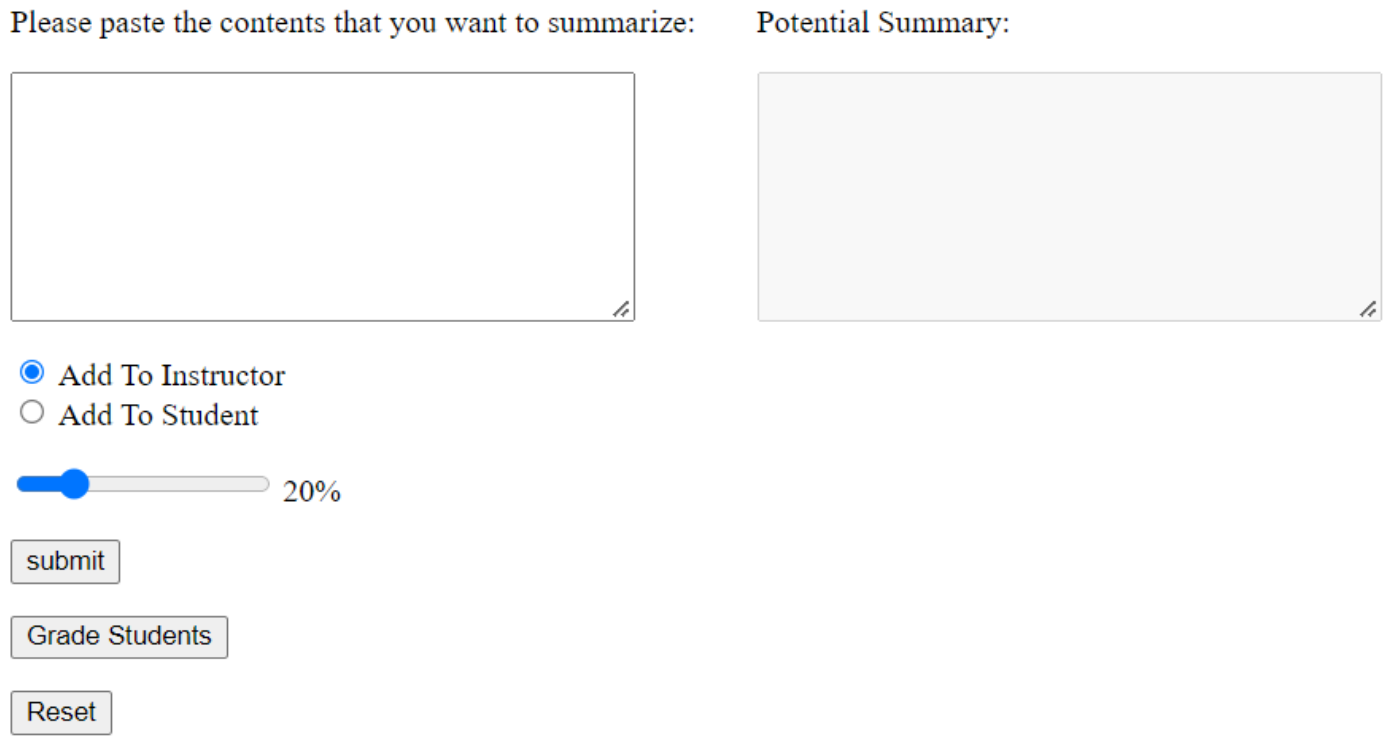
15. Run app.py

```
(myenv) chenghy1017@cs-344315516339-default:~/aes$ python3 app.py
 * Serving Flask app 'app' (lazy loading)
 * Environment: production
   WARNING: 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: 818-867-689
```

16. Use Web Preview and change the port number to 5000



17. Preview



18. Test the app

19. Freeze a requirement.txt

```
(myenv) chenghy1017@cloudshell:~/aes (my-project-342502)$ pip freeze > requirements.t
xt
(myenv) chenghy1017@cloudshell:~/aes (my-project-342502)$ cat requirements.txt
boto3==1.21.21
botocore==1.24.21
certifi==2021.5.30
cffi @ file:///tmp/build/80754af9/cffi_1625814693874/work
charset-normalizer==2.0.12
click==8.0.4
cycler==0.11.0
dataclasses==0.8
Flask==2.0.3
gensim==3.8.3
idna==3.3
importlib-metadata==4.8.3
importlib-resources==5.4.0
itsdangerous==2.0.1
Jinja2==3.0.3
jmespath==0.10.0
joblib==1.1.0
kiwisolver==1.3.1
MarkupSafe==2.0.1
```

20. Create a Dockerfile

```
FROM python:alpine3.7
COPY . /app
WORKDIR /app
RUN pip install --upgrade pip
RUN pip install -r requirements.txt
ENV PORT 5000
EXPOSE 5000
ENTRYPOINT [ "python3" ]
CMD [ "app.py" ]
```

21. Build and push image to docker file.

```
(myenv) chenghy1017@cloudshell:~/aes (my-project-342502)$ sudo docker build -t haruora
nge/aes .
Sending build context to Docker daemon  1.266GB
Step 1/9 : FROM python:alpine3.7
alpine3.7: Pulling from library/python
48ecbb6b270e: Pull complete
692f29ee68fa: Pull complete
6439819450d1: Pull complete
3c7be240f7bf: Pull complete
ca4b349df8ed: Pull complete
Digest: sha256:35f6f83ab08f98c727dbefd53738e3b3174a48b4571ccb1910bae480dcdba847
Status: Downloaded newer image for python:alpine3.7
 ---> 00be2573e9f7
```

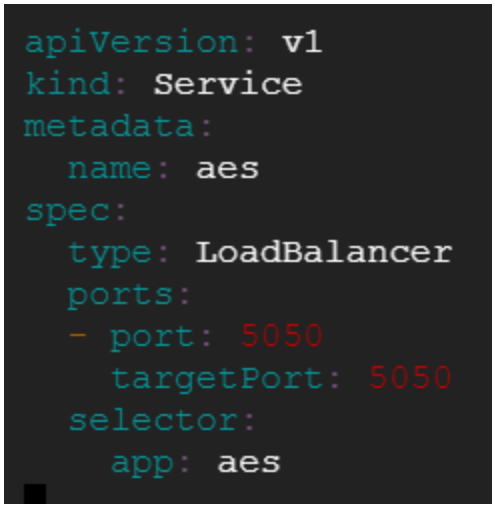
22. Create a configmap yaml file

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: aes-config
data:
  MONGO_URL: 34.83.212.124
  MONGO_DATABASE: mydb
```

23. Create a deployment yaml file

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: aes
  labels:
    app: aes-deploy
spec:
  replicas: 1
  selector:
    matchLabels:
      app: aes
  template:
    metadata:
      labels:
        app: aes
    spec:
      containers:
        - image: haruorange/aes
          imagePullPolicy: Always
          name: aes
          ports:
            - containerPort: 5050
          env:
            - name: MONGO_URL
              valueFrom:
                configMapKeyRef:
                  name: aes-config
                  key: MONGO_URL
            - name: MONGO_DATABASE
              valueFrom:
                configMapKeyRef:
                  name: aes-config
                  key: MONGO_DATABASE
```

24. Create a service yaml file



```yaml
apiVersion: v1
kind: Service
metadata:
  name: aes
spec:
  type: LoadBalancer
  ports:
  - port: 5050
    targetPort: 5050
  selector:
    app: aes
```

25. Apply the above yaml file and add the configurate to the ingress service just as the last project.

```yaml
kind: Ingress
metadata:
  name: server
  annotations:
    nginx.ingress.kubernetes.io/rewrite-target: /$2
spec:
  rules:
    - host: cs571.project.com
      http:
        paths:
          - path: /studentserver(/|$)(.*)
            pathType: Prefix
            backend:
              service:
                name: web
                port:
                  number: 8080
          - path: /bookshelf(/|$)(.*)
            pathType: Prefix
            backend:
              service:
                name: bookshelf-service
                port:
                  number: 5000
          - path: /aes(/|$)(.*)
            pathType: Prefix
            backend:
              service:
                name: aes-service
                port:
                  number: 5050
```

26. Apply the ingress service using the above yaml file

```
chenghy1017@cloudshell:~/signature (my-project-342502)$ kubectl apply -f studentserve
rmongoIngress.yaml
ingress.networking.k8s.io/server created
```

27. Check the web application

Please paste the contents that you want to summarize:

Kubernetes (/ˌk(j)uːbərˈnɛtɪs, -ˈneɪtɪs, -ˈneɪtiːz, -ˈnɛtiːz/, commonly stylized as K8s[4]) is an open-source container orchestration system for automating software deployment, scaling, and management.[5][6] Google originally designed Kubernetes, but the Cloud Native Computing Foundation now

- (•) Add To Instructor
- ( ) Add To Student

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Reset

Potential Summary:

Kubernetes (/ˌk(j)uːbərˈnɛtɪs, -ˈneɪtɪs, -ˈneɪtiːz, -ˈnɛtiːz/, commonly stylized as K8s[4]) is an open-source container orchestration system for automating software deployment, scaling, and management.

Total Time cost:30.87s