

## EX.No:4    Installation of a GoogleApp Engine

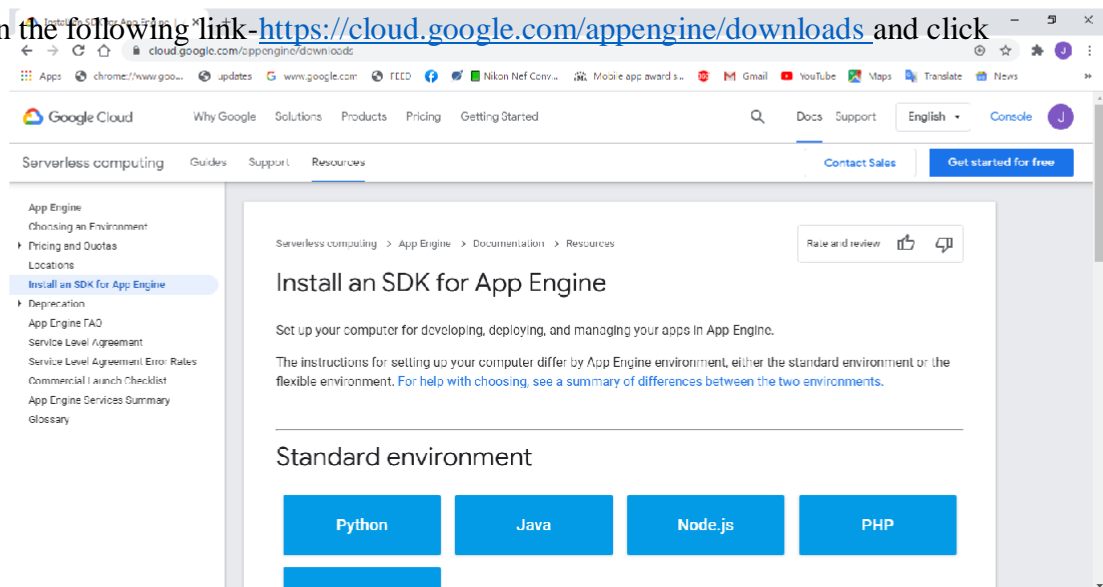
**Date:**

**Aim:**

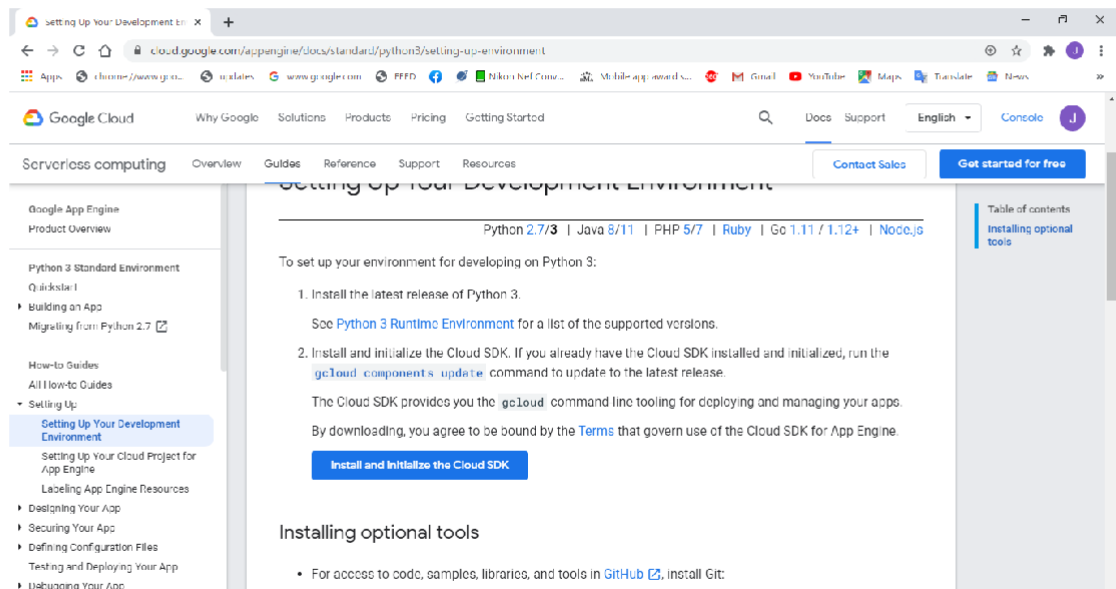
To install the Google app engine in the system.

**Procedure:**

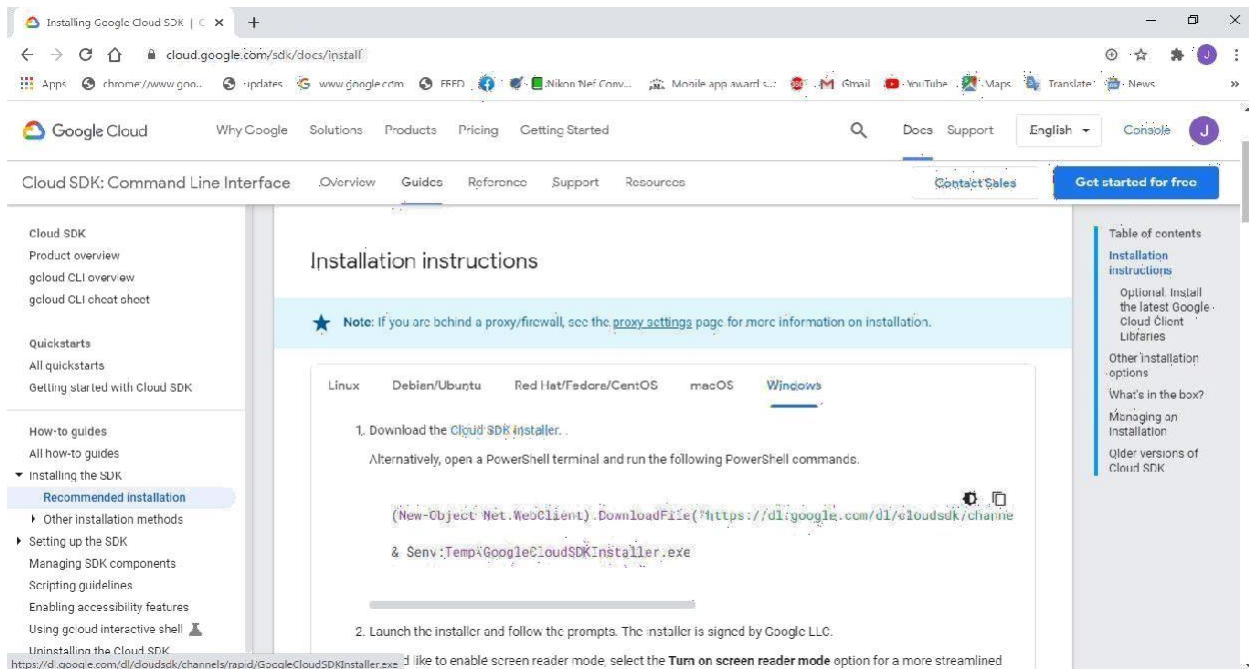
Step1: Open the following link-<https://cloud.google.com/appengine/downloads> and click python.



Step2: Select setting up your environment development and click on install and initialize the cloud sdk.

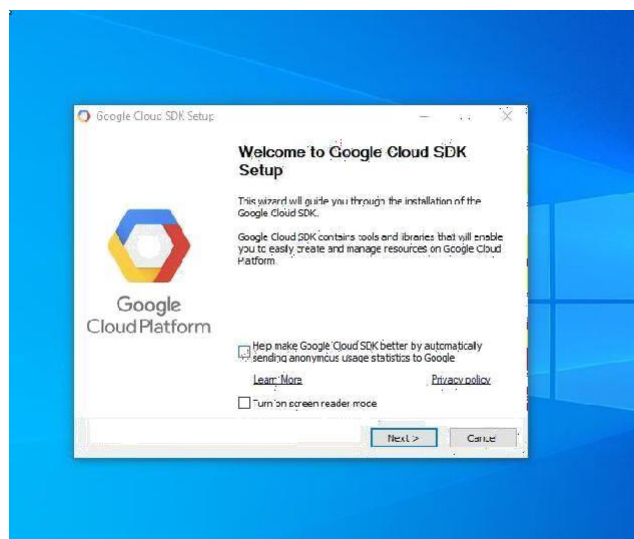


Step3:Download the sdk installer and install it.

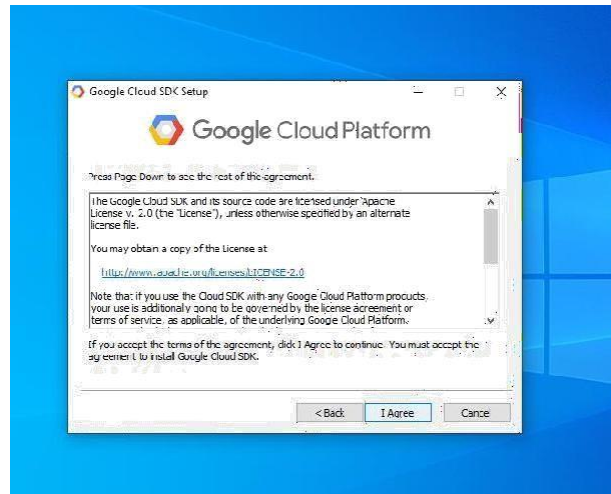


The screenshot shows the Google Cloud SDK installation instructions page in a web browser. The browser's address bar shows the URL `cloud.google.com/sdk/docs/install`. The page has a navigation bar with links like 'Why Google', 'Solutions', 'Products', 'Pricing', 'Getting Started', 'Docs', 'Support', 'English', and 'Console'. Below the navigation bar, the page title is 'Cloud SDK: Command Line Interface'. The main content area is titled 'Installation instructions' and includes a note about proxy/firewall settings. It lists steps for downloading the installer and running PowerShell commands. The commands are: `(New-Object Net.WebClient).DownloadFile('https://dl.google.com/dl/cloudsdk/channel` and `& Senv:Temp\GoogleCloudSDK\installer.exe`. The page also has a sidebar with links to 'Table of contents', 'Installation instructions', 'Optional: Install the latest Google Cloud Client Libraries', 'Other installation options', 'What's in the box?', 'Managing an installation', and 'Older versions of Cloud SDK'.

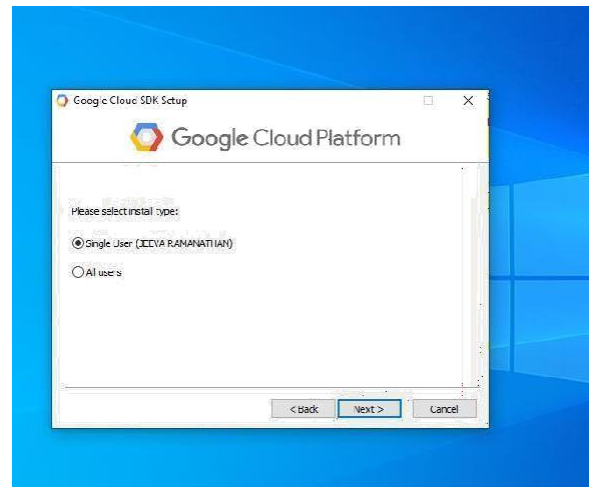
Step4: Click Next.



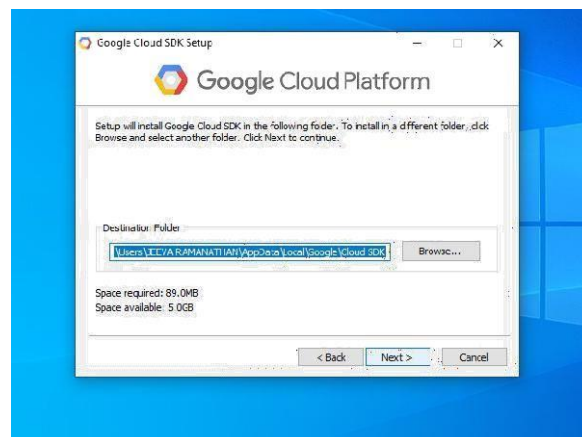
Step5:Click I Agree.



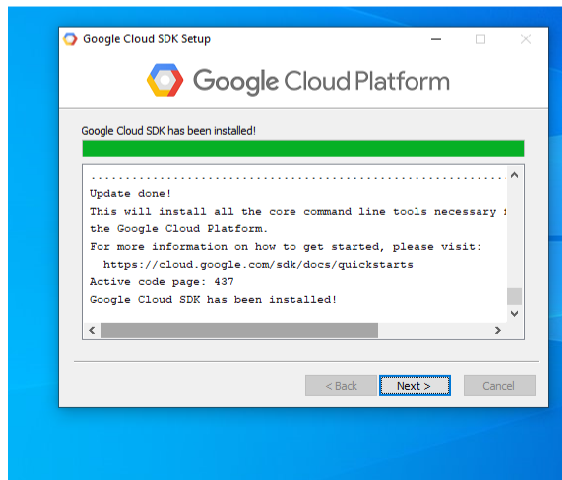
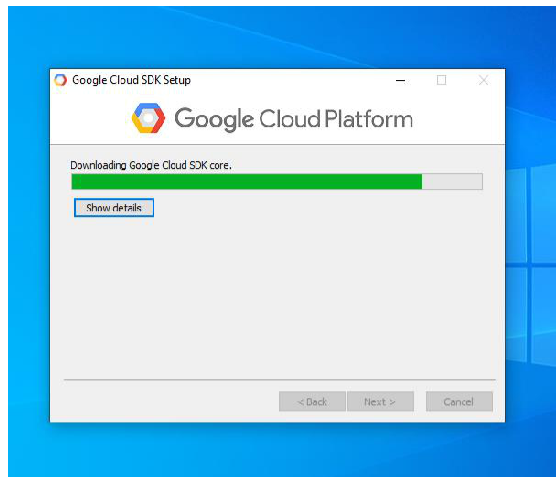
Step6: Select single user and click Next.



Step7: Select the destination location and click Next.



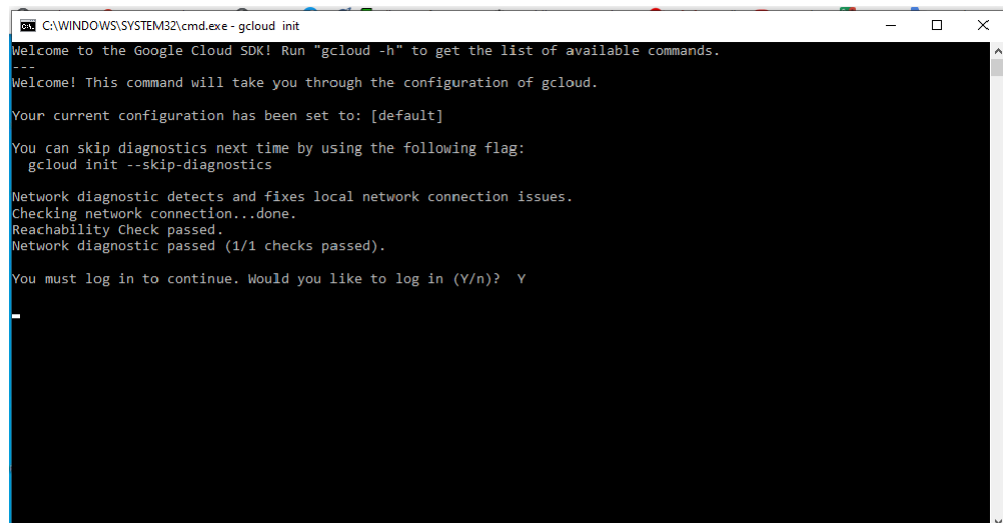
Step8: Downloading all the requirements and installing



Step9:Click Finish.



Step10:Once successfully installed cmd line in login with your Google account.



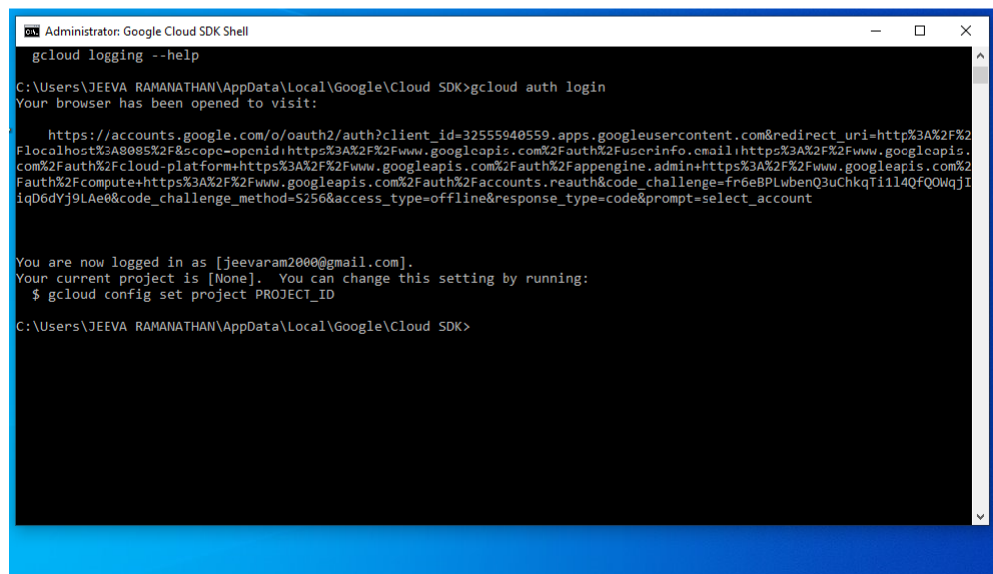
```
C:\WINDOWS\SYSTEM32\cmd.exe - gcloud init
Welcome to the Google Cloud SDK! Run "gcloud -h" to get the list of available commands.
---
Welcome! This command will take you through the configuration of gcloud.

Your current configuration has been set to: [default]

You can skip diagnostics next time by using the following flag:
  gcloud init --skip-diagnostics

Network diagnostic detects and fixes local network connection issues.
Checking network connection...done.
Reachability Check passed.
Network diagnostic passed (1/1 checks passed).

You must log in to continue. Would you like to log in (Y/n)?  Y
-
```



```
Administrator: Google Cloud SDK Shell
gcloud logging --help

C:\Users\JEEVA RAMANATHAN\AppData\Local\Google\Cloud SDK>gcloud auth login
Your browser has been opened to visit:
  https://accounts.google.com/o/oauth2/auth?client_id=32555940559.apps.googleusercontent.com&redirect_uri=http%3A%2F%2Flocalhost%3A8085%2F&scope=openid%2Fhttps%3A%2F%2Fwww.googleapis.com%2Fauth%2Fuserinfo.email%2Fhttps%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcloud-platform%2Fhttps%3A%2F%2Fwww.googleapis.com%2Fauth%2Fappengine.admin%2Fhttps%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcompute%2Fhttps%3A%2F%2Fwww.googleapis.com%2Fauth%2Faccounts.reauth&code_challenge=fr6e8PLwbenQ3uChkqT1114QfQ0WqjIiqD6dYj9LAe0&code_challenge_method=S256&access_type=offline&response_type=code&prompt=select_account

You are now logged in as [jeevaram2000@gmail.com].
Your current project is [None]. You can change this setting by running:
  $ gcloud config set project PROJECT_ID

C:\Users\JEEVA RAMANATHAN\AppData\Local\Google\Cloud SDK>
```

## **Result:**

Thus googleapp engine is installed successfully in the system.

## EX.No:4

## Launch a web application using GAE launcher

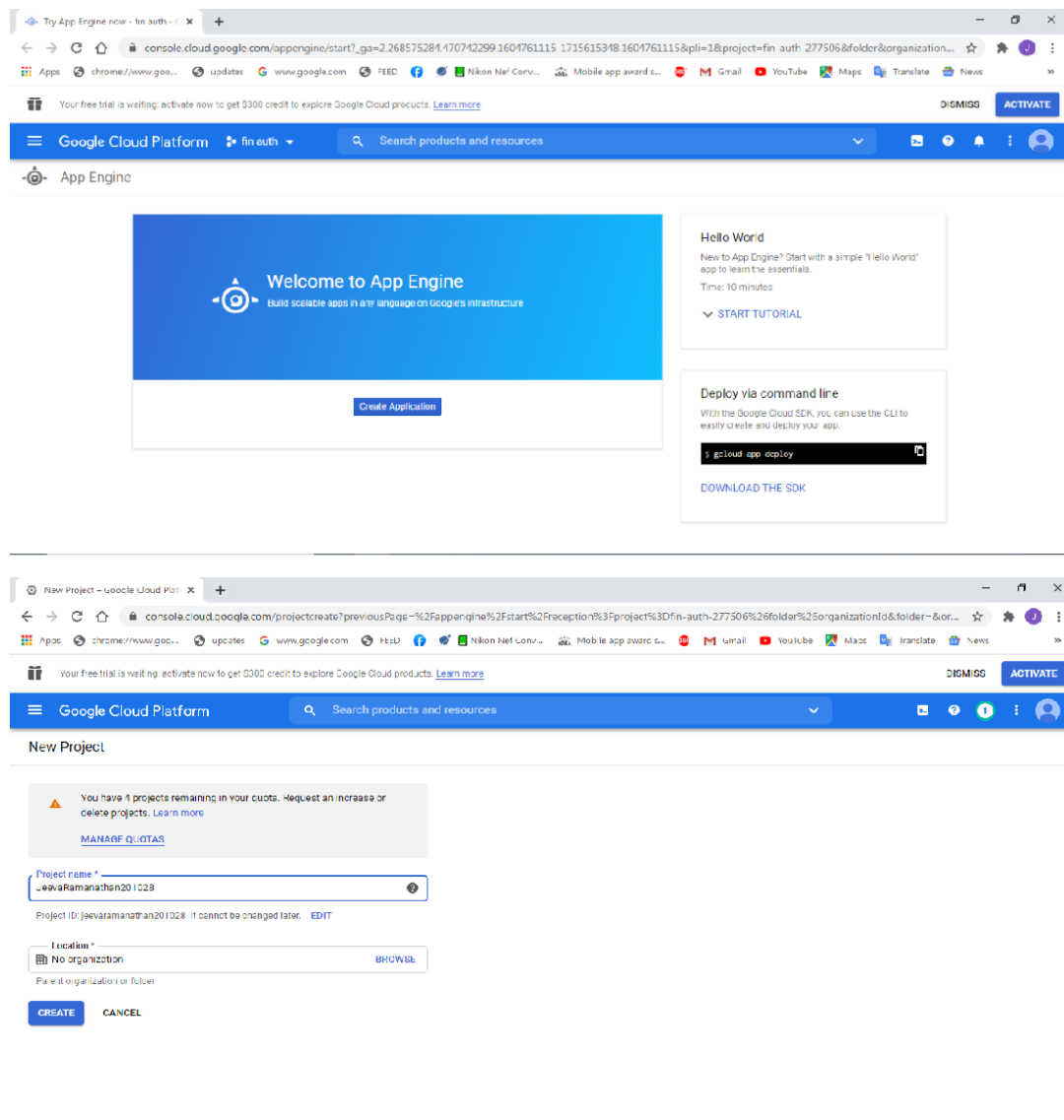
### Aim:

To launch the web applications by using the GAE launcher.

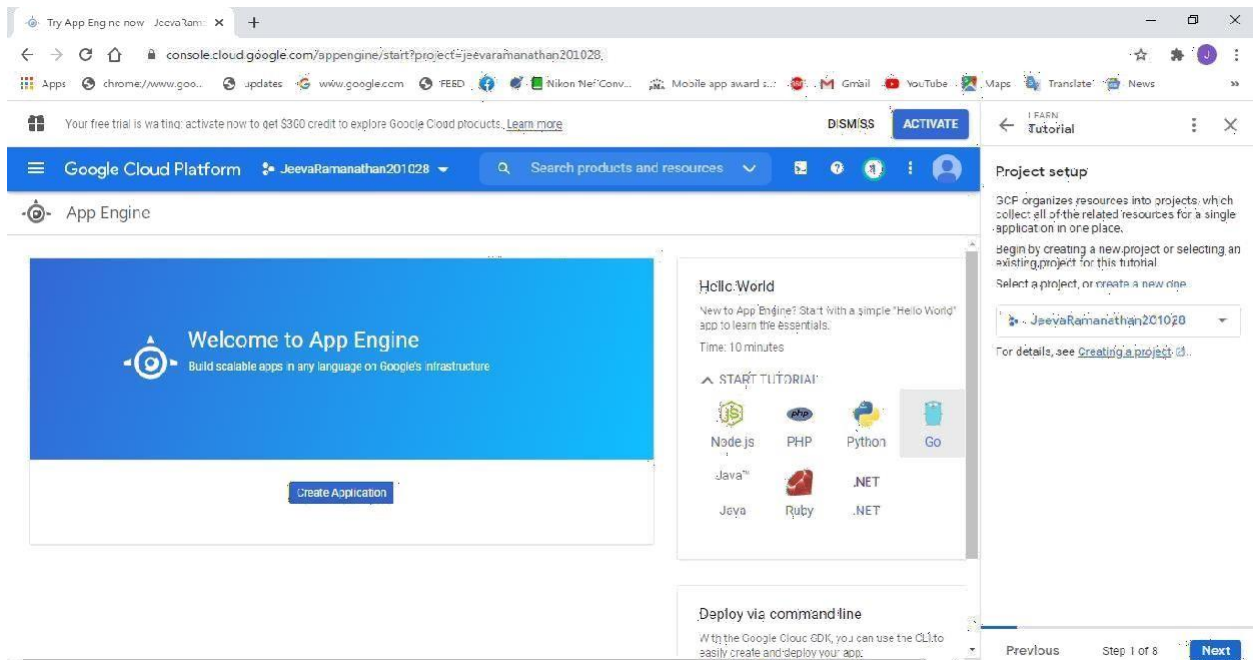
### Procedure:

Step 1: Go to the following website

[https://console.cloud.google.com/start/appengine?\\_ga=2.268575284.470742299.1604761115-1715615348.1604761115&pli=1](https://console.cloud.google.com/start/appengine?_ga=2.268575284.470742299.1604761115-1715615348.1604761115&pli=1) and create a new project.

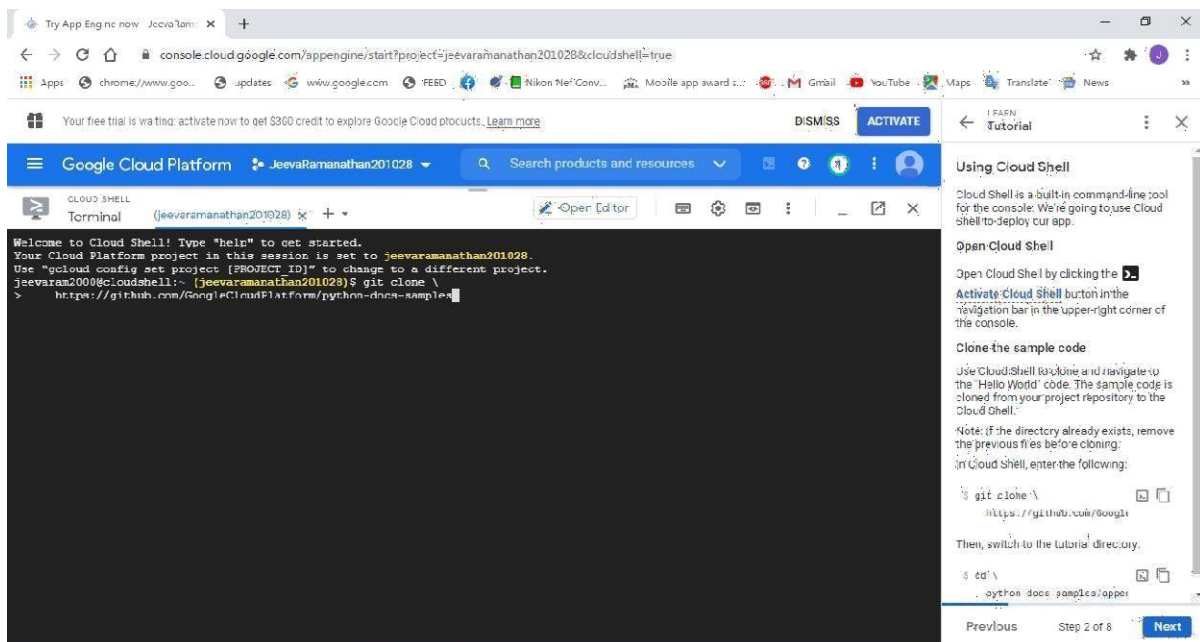


Step2:Select python and click next.



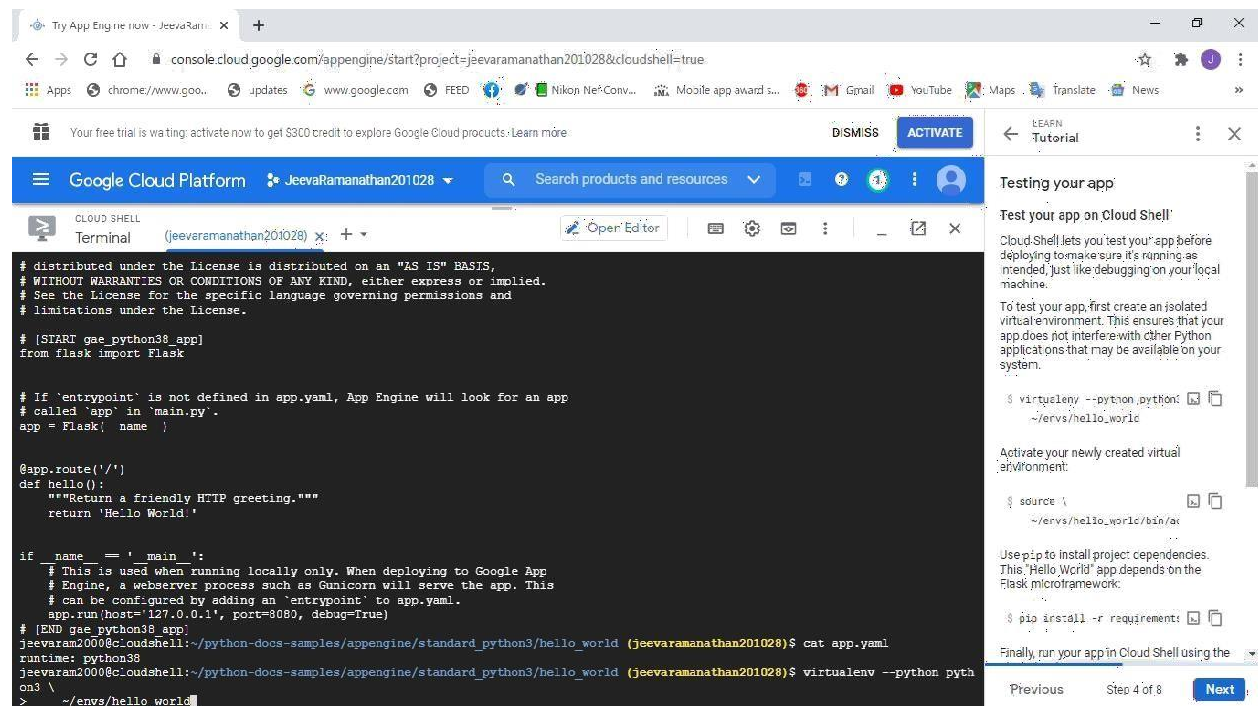
Step3: Open the cloud shell and follow the steps in the tutorial.

Clone the repository by using the given command





## Step4: Create the virtual environment



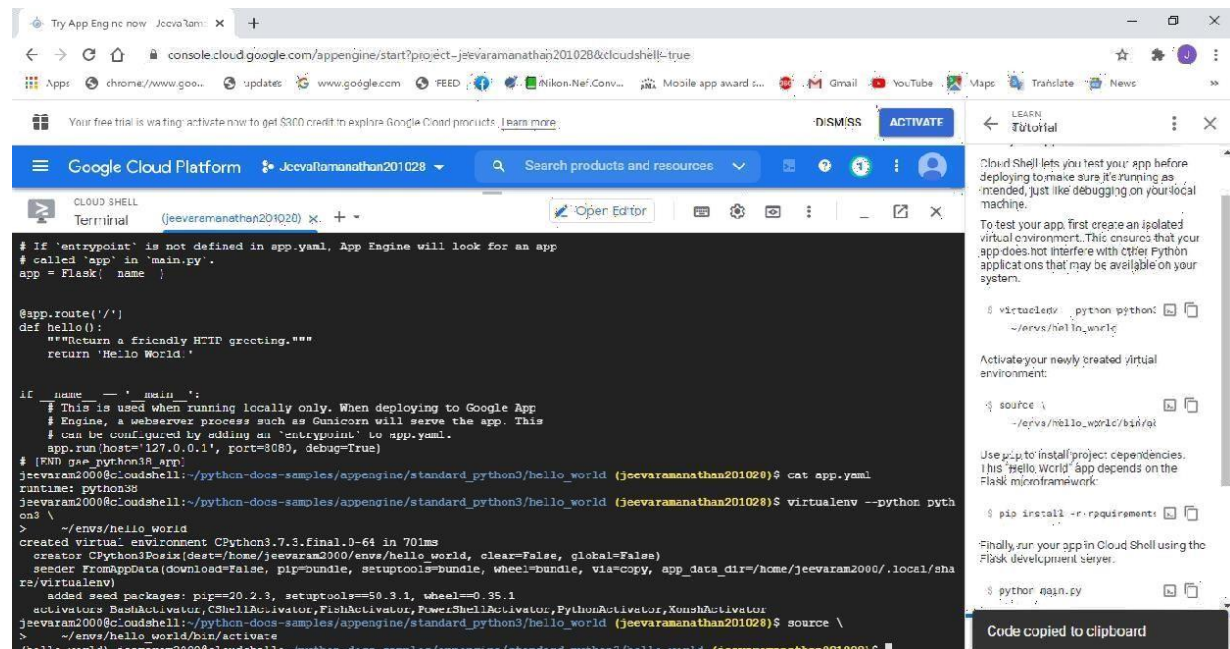
The screenshot shows the Google Cloud Platform console with the Cloud Shell terminal open. The terminal displays the contents of the `app.yaml` file and the command to create a virtual environment. The sidebar on the right shows a tutorial titled "Testing your app" with steps for creating a virtual environment and installing dependencies.

```
# distributed under the License is distributed on an "AS IS" BASIS,  
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
# See the License for the specific language governing permissions and  
# limitations under the License.  
  
# [START gae_python38_app]  
from flask import Flask  
  
# If 'entrypoint' is not defined in app.yaml, App Engine will look for an app  
# called 'app' in 'main.py'.  
app = Flask(__name__)  
  
@app.route('/')  
def hello():  
    """Return a friendly HTTP greeting."""  
    return 'Hello World'   
  
if __name__ == '__main__':  
    # This is used when running locally only. When deploying to Google App  
    # Engine, a webserver process such as Gunicorn will serve the app. This  
    # can be configured by adding an 'entrypoint' to app.yaml.  
    app.run(host='127.0.0.1', port=8080, debug=True)  
# [END gae_python38_app]  
jeevaram2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaramathan201028)$ cat app.yaml  
runtime: python38  
jeevaram2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaramathan201028)$ virtualenv --python pyth  
on3 \   
> ~/envs/hello_world
```

Testing your app  
Test your app on Cloud Shell  
Cloud Shell lets you test your app before deploying to make sure it's running as intended, just like debugging on your local machine.  
To test your app, first create an isolated virtual environment. This ensures that your app does not interfere with other Python applications that may be available on your system.  
\$ virtualenv --python python3  
~/envs/hello\_world  
Activate your newly created virtual environment:  
\$ source \   
~/envs/hello\_world/bin/act  
Use pip to install project dependencies. This 'Hello World' app depends on the Flask microframework.  
\$ pip install -r requirements  
Finally, run your app in Cloud Shell using the

Previous Step 4 of 8 Next

## Step5: Activate your virtual environment.



The screenshot shows the Google Cloud Platform console with the Cloud Shell terminal open. The terminal displays the command to activate the virtual environment. The sidebar on the right shows a tutorial titled "Testing your app" with steps for activating the virtual environment and running the application.

```
# If 'entrypoint' is not defined in app.yaml, App Engine will look for an app  
# called 'app' in 'main.py'.  
app = Flask(__name__)  
  
@app.route('/')  
def hello():  
    """Return a friendly HTTP greeting."""  
    return 'Hello World'   
  
if __name__ == '__main__':  
    # This is used when running locally only. When deploying to Google App  
    # Engine, a webserver process such as Gunicorn will serve the app. This  
    # can be configured by adding an 'entrypoint' to app.yaml.  
    app.run(host='127.0.0.1', port=8080, debug=True)  
# [END gae_python38_app]  
jeevaram2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaramathan201028)$ cat app.yaml  
runtime: python38  
jeevaram2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaramathan201028)$ virtualenv --python pyth  
on3 \   
> ~/envs/hello_world  
created virtual environment CPython3.7.3.final.0-64 in 701ms  
creator CPython3Posix(dest=/home/jeevaram2000/envs/hello_world, clear=False, global=False)  
sender FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app_data_dir=/home/jeevaram2000/.local/sha  
re/virtualenv)  
added seed packages: pip==20.2.3, setuptools==50.3.1, wheel==0.35.1  
activators BashActivator,CShellActivator,FishActivator,PowerShellActivator,PythonActivator,XonshActivator  
jeevaram2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaramathan201028)$ source \   
~/envs/hello_world/bin/activate  
(hello_world) jeevaram2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaramathan201028)$
```

Testing your app  
Test your app on Cloud Shell  
Cloud Shell lets you test your app before deploying to make sure it's running as intended, just like debugging on your local machine.  
To test your app, first create an isolated virtual environment. This ensures that your app does not interfere with other Python applications that may be available on your system.  
\$ virtualenv --python python3  
~/envs/hello\_world  
Activate your newly created virtual environment:  
\$ source \   
~/envs/hello\_world/bin/act  
Use pip to install project dependencies. This 'Hello World' app depends on the Flask microframework.  
\$ pip install -r requirements  
Finally, run your app in Cloud Shell using the  
\$ python main.py  
Code copied to clipboard



## Step6: Installing requirements and run the app.

The screenshot shows the Google Cloud Platform console with a Cloud Shell terminal open. The terminal displays the following commands and output:

```
created virtual environment CPython3.7.3.final.0-64 in 701ms
creator CPython3Posix(dest=/home/jeevaran2000/envs/hello_world, clear=False, global=False)
seeder FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app data dir=/home/jeevaran2000/.local/share/virtualenv)
added seed packages: pip==20.2.3, setuptools==50.9.1, wheel==0.35.1
activators BashActivator,CShellActivator,FishActivator,PowerShellActivator,PythonActivator,XonshActivator
jeevaran2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaranathan201028)$ source \
~/envs/hello_world/bin/activate
(hello_world) jeevaran2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaranathan201028)$ pip instal
l -r requirements.txt
Collecting Flask==1.1.2
  Downloading Flask-1.1.2-py2.py3-none-any.whl (94 kB)
    |#####| 94 kB 2.6 MB/s
Collecting click==5.1
  Downloading click-7.1.2-py2.py3-none-any.whl (82 kB)
    |#####| 82 kB 1.3 MB/s
Collecting itsdangerous==0.24
  Downloading itsdangerous-1.1.0-py2.py3-none-any.whl (16 kB)
Collecting Jinja2==2.10.1
  Downloading Jinja2-2.11.2-py2.py3-none-any.whl (125 kB)
    |#####| 125 kB 13.4 MB/s
Collecting Werkzeug==0.15
  Downloading Werkzeug-1.0.1-py2.py3-none-any.whl (298 kB)
    |#####| 298 kB 40.1 MB/s
Collecting MarkupSafe==0.23
  Downloading MarkupSafe-1.1.1-cp37-cp37m-manylinux1_x86_64.whl (27 kB)
Installing collected packages: click, itsdangerous, MarkupSafe, Jinja2, Werkzeug, Flask
Successfully installed Flask-1.1.2 Jinja2-2.11.2 MarkupSafe-1.1.1 Werkzeug-1.0.1 click-7.1.2 itsdangerous-1.1.0
WARNING: You are using pip version 20.2.3; however, version 20.2.4 is available.
You should consider upgrading via the '/home/jeevaran2000/envs/hello_world/bin/python -m pip install --upgrade pip' command.
(hello_world) jeevaran2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaranathan201028)$
```

The right sidebar shows the Cloud Shell tutorial steps:

- Cloud Shell lets you test your app before deploying to make sure it's running as intended, just like debugging on your local machine.
- To test your app, first create an isolated virtual environment. This ensures that your app does not interfere with other Python applications that may be available on your system.
- Activate your newly created virtual environment.
- Use pip to install project dependencies. This 'hello world' app depends on the Flask microframework.
- Finally, run your app in Cloud Shell using the Flask development server.

Navigation buttons: Previous, Step 4 of 8, Next.

The screenshot shows the Google Cloud Platform console with a Cloud Shell terminal open. The terminal displays the following commands and output:

```
it name = 'main':
# This is used when running locally only. When deploying to Google App
# Engine, a webserver process such as Gunicorn will serve the app. This
# can be configured by adding an 'entrypoint' to app.yaml.
app.run(host='127.0.0.1', port=3080, debug=True)
# (ENV use python3 app)
jeevaran2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaranathan201028)$ cat app.yaml
runtime: python38
jeevaran2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaranathan201028)$ virtualenv --python pyth
on3 \
~/envs/hello_world
created virtual environment CPython3.7.3.final.0-64 in 701ms
creator CPython3Posix(dest=/home/jeevaran2000/envs/hello_world, clear=False, global=False)
seeder FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app data dir=/home/jeevaran2000/.local/sha
re/virtualenv)
added seed packages: pip==20.2.3, setuptools==50.9.1, wheel==0.35.1
activators BashActivator,CShellActivator,FishActivator,PowerShellActivator,PythonActivator,XonshActivator
jeevaran2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaranathan201028)$ source \
~/envs/hello_world/bin/activate
(hello_world) jeevaran2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaranathan201028)$ pip instal
l -r requirements.txt
Collecting Flask==1.1.2
  Downloading Flask-1.1.2-py2.py3-none-any.whl (94 kB)
    |#####| 94 kB 2.6 MB/s
Collecting click==5.1
  Downloading click-7.1.2-py2.py3-none-any.whl (82 kB)
    |#####| 82 kB 1.3 MB/s
Collecting itsdangerous==0.24
  Downloading itsdangerous-1.1.0-py2.py3-none-any.whl (16 kB)
Collecting Jinja2==2.10.1
  Downloading Jinja2-2.11.2-py2.py3-none-any.whl (125 kB)
    |#####| 125 kB 13.4 MB/s
Collecting Werkzeug==0.15
  Downloading Werkzeug-1.0.1-py2.py3-none-any.whl (298 kB)
    |#####| 298 kB 40.1 MB/s
Collecting MarkupSafe==0.23
  Downloading MarkupSafe-1.1.1-cp37-cp37m-manylinux1_x86_64.whl (27 kB)
Installing collected packages: click, itsdangerous, MarkupSafe, Jinja2, Werkzeug, Flask
Successfully installed Flask-1.1.2 Jinja2-2.11.2 MarkupSafe-1.1.1 Werkzeug-1.0.1 click-7.1.2 itsdangerous-1.1.0
WARNING: You are using pip version 20.2.3; however, version 20.2.4 is available.
You should consider upgrading via the '/home/jeevaran2000/envs/hello_world/bin/python -m pip install --upgrade pip' command.
(hello_world) jeevaran2000@cloudshell:~/python-docs-samples/appengine/standard_python3/hello_world (jeevaranathan201028)$
```

The right sidebar shows the Cloud Shell tutorial steps:

- Cloud Shell lets you test your app before deploying to make sure it's running as intended, just like debugging on your local machine.
- To test your app, first create an isolated virtual environment. This ensures that your app does not interfere with other Python applications that may be available on your system.
- Activate your newly created virtual environment.
- Use pip to install project dependencies. This 'hello world' app depends on the Flask microframework.
- Finally, run your app in Cloud Shell using the Flask development server.

Navigation buttons: Previous, Step 4 of 8, Next.

## Step7: Create an application and deploy it in cloud shell.

The screenshot shows the Google Cloud Platform console for user JeevaRamanathan201028. The 'Terminal' tab is active, displaying the following commands and output:

```
gcloud app create
Downloading Flask-1.1.2-py2.py3-none-any.whl (94 kB)
Collecting click==5.1
Downloading click-7.1.2-py2.py3-none-any.whl (82 kB)
Collecting itsdangerous==0.24
Downloading itsdangerous-1.1.0-py2.py3-none-any.whl (16 kB)
Collecting Jinja2==2.10.1
Downloading Jinja2-2.11.2-py2.py3-none-any.whl (125 kB)
Collecting Werkzeug==0.15
Downloading Werkzeug-1.0.1-py2.py3-none-any.whl (298 kB)
Collecting MarkupSafe==0.23
Downloading MarkupSafe-1.1.1-cp37-cp37m-manylinux1_x86_64.whl (27 kB)
Installing collected packages: click, itsdangerous, MarkupSafe, Jinja2, Werkzeug, Flask
Successfully installed Flask-1.1.2 Jinja2-2.11.2 MarkupSafe-1.1.1 Werkzeug-1.0.1 click-7.1.2 itsdangerous-1.1.0
WARNING: You are using pip version 20.2.3; however, version 20.2.4 is available.
You should consider upgrading via the '/home/jeevaram2000/envs/hello_world/bin/python -m pip install --upgrade pip' command.
(hello_world) jeevaram2000@cloudshell:~/python-docs-samples/appengine/standard/python3/hello_world (jeevaramanathan201028)$ python mai
n.py
* Serving Flask app "main" (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
* Running on http://127.0.0.1:8080/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 123-976-332
gcloud app create
```

The right sidebar shows the 'Deploying to App Engine' tutorial. It includes sections for 'Create an application', 'Deploying with Cloud Shell', and 'Visit your app'. The 'Visit your app' section shows the URL: `http://jeevaramanathan201028.appspot.com`.

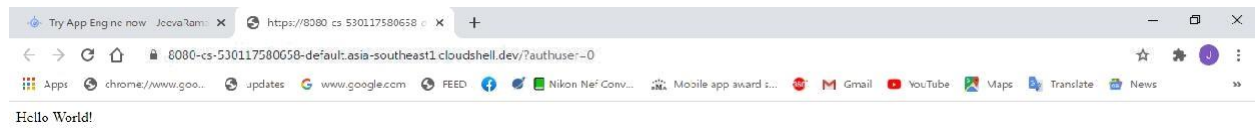
## Step8: Click preview on port 8080 to see your deployed application

The screenshot shows the Google Cloud Platform console for user JeevaRamanathan201028. The 'Terminal' tab is active, displaying the same commands and output as in Step 7. A context menu is open over the terminal, showing the following options:

- Preview on port 8080
- Change port
- About web preview

The right sidebar shows the 'View your app's status' section. It includes a link to 'App Engine' and a 'Next' button.

Step9: Finally the application is deployed and the output is seen.



### **Result:**

Thus a web application is launched by using the GAE launcher and the output is obtained successfully.