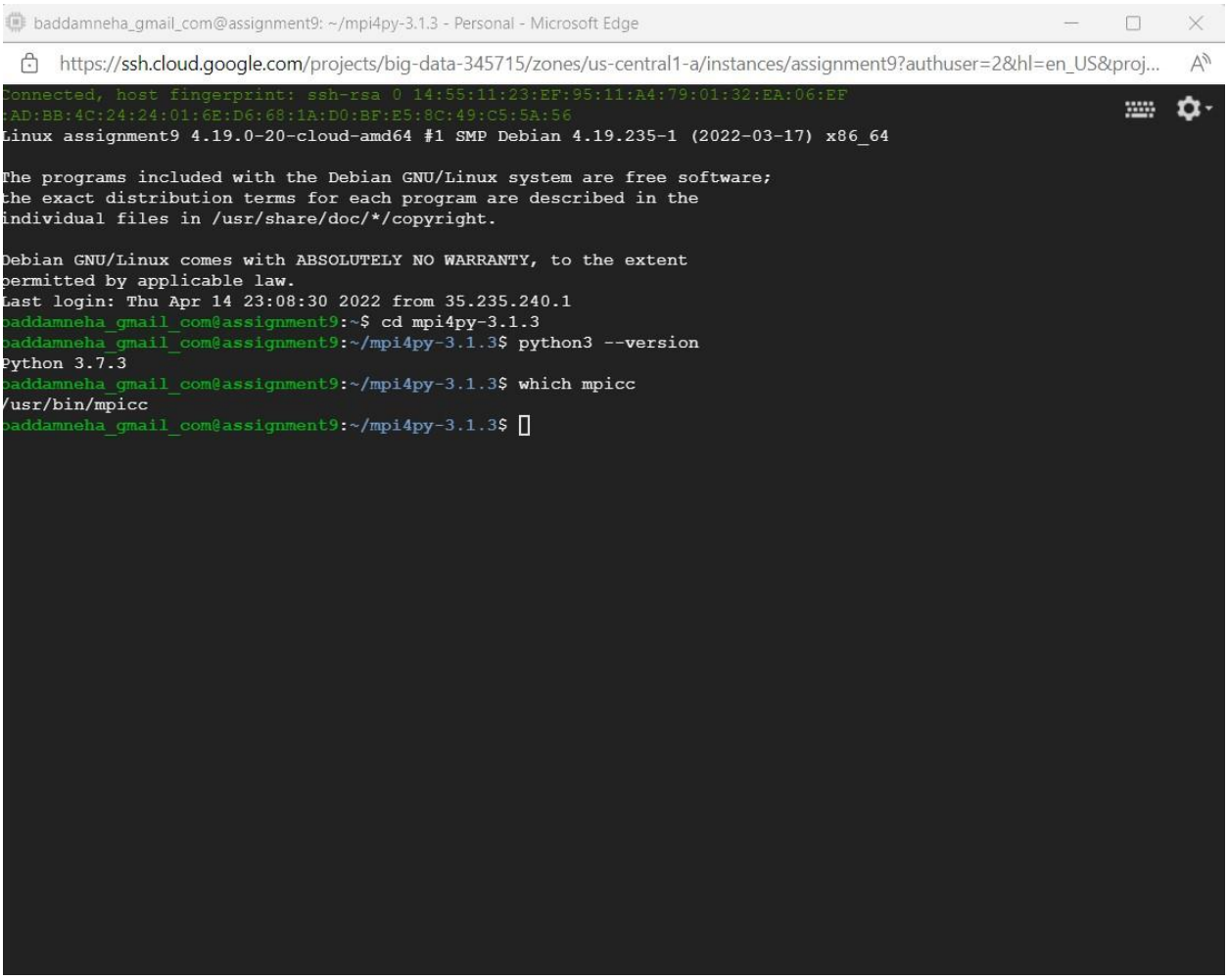
Assignment 9: Setup Virtual Machine for Parallel Computing with MPI4PY on Google Cloud

(a) Click on SSH terminal (this button can be seen in VM instances page. Look in the right of the line that shows the VM you just created, now type the following commands and see what output you get.

$python3 --version (You should get python3.7.3)

$which mpicc (if done right, this should display /usr/bin/mpicc)

Take a snapshot of the page and rename the image as "question-a.* (*jpeg, pdf, etc.) and upload the file with your assignment submission.



(b) create firstprogram.py (see slide 5 for the program). Use vi editor to enter the program and save it. If you dont know vi editor, GIYF. A few quick commands. $vi firstprogram.py creates an empty file with the filename "firstprogram.py". "i" to insert text, "wq" to write and quit the file.

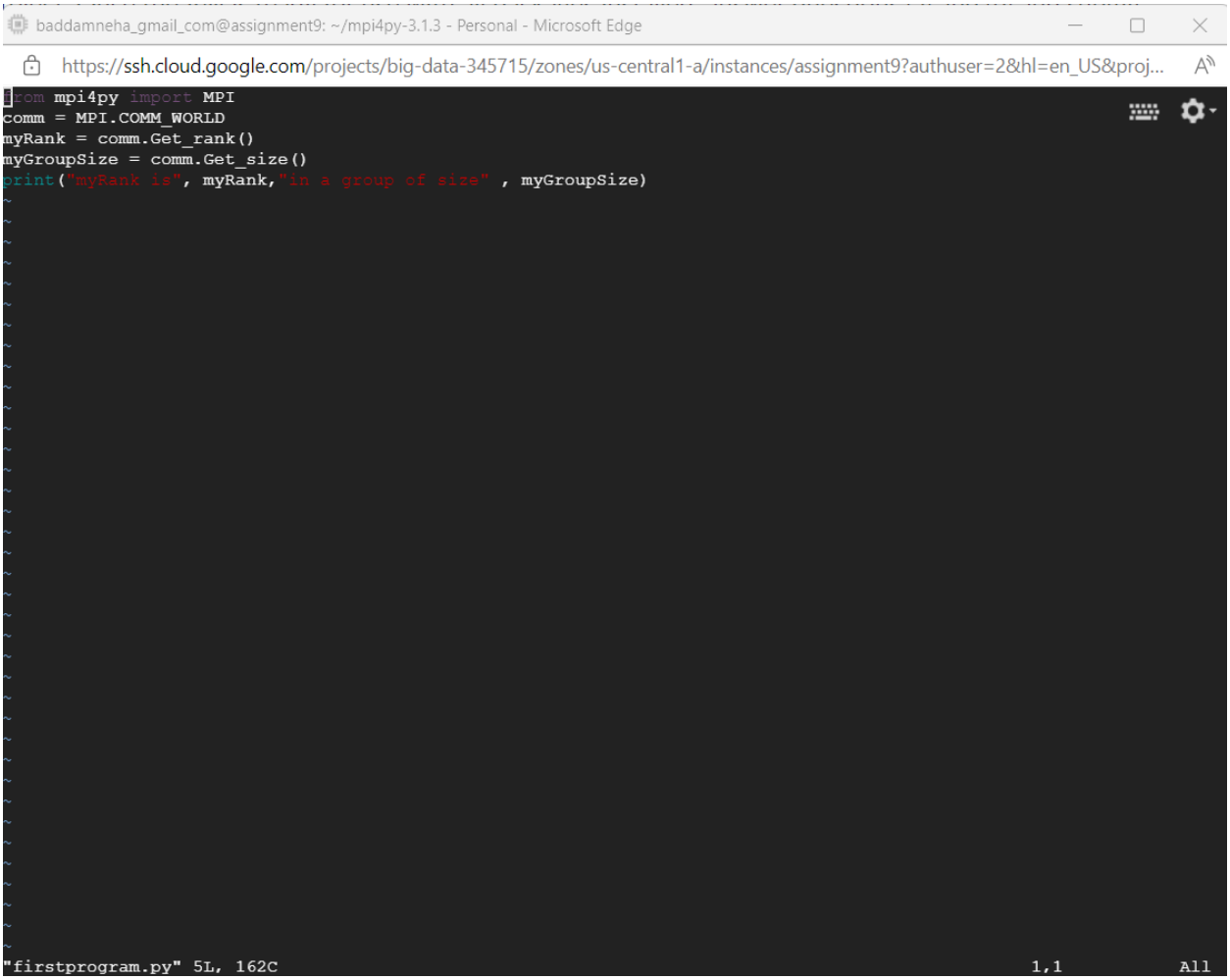
For additional commands, review vi tutorials online. Once the firstprogram.py is ready to use, type the following command in the director that the firstporgram.py is located.

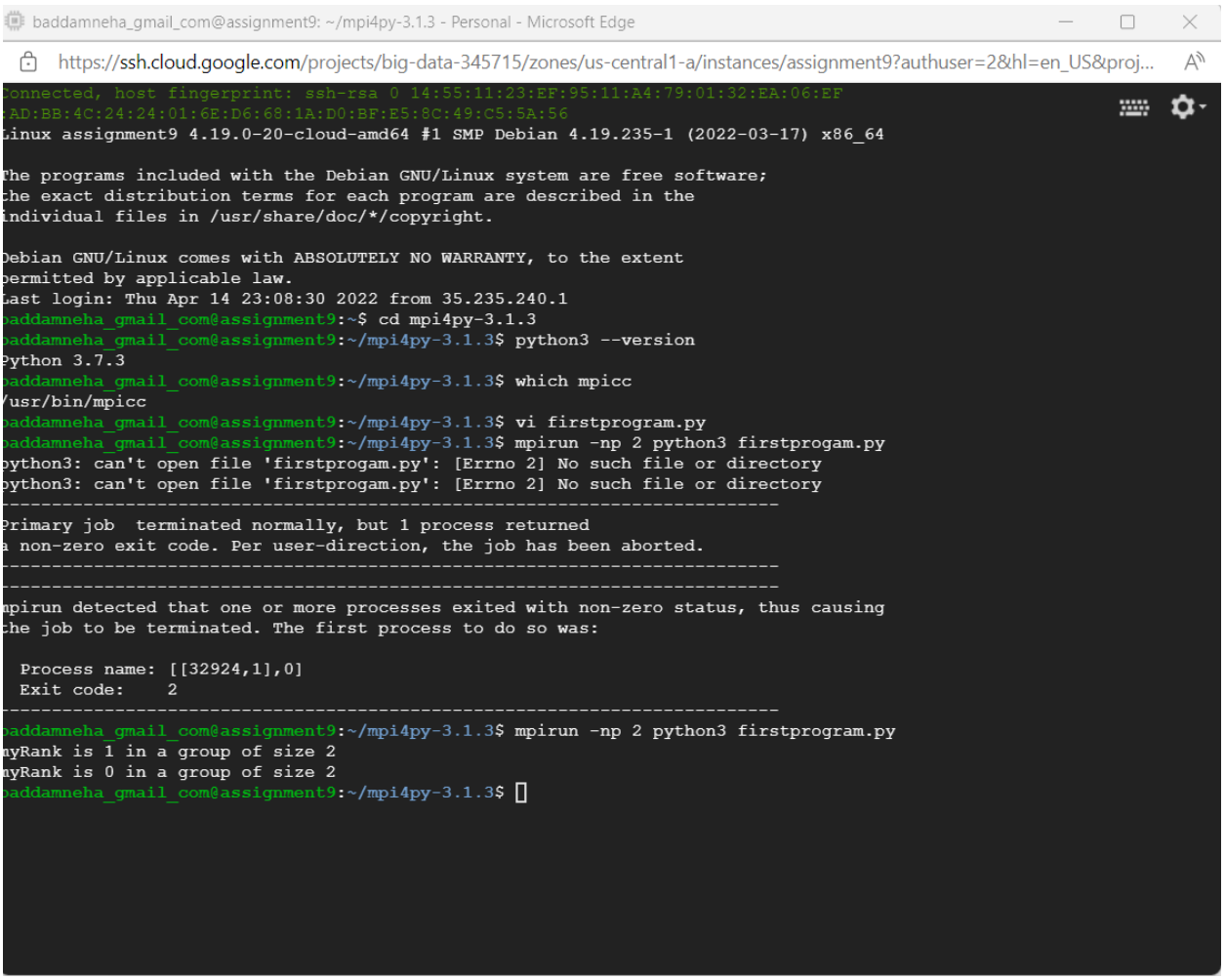
$mpirun -np 2 python3 firstprogam.py

Expected output (the print order may be different from shown below but, you should two lines printed):

myRank is 0 in a group of size 2

myRank is 1 in a group of size 2




baddamneha_gmail_com@assignment9: ~/mpi4py-3.1.3 - Personal - Microsoft Edge
https://ssh.cloud.google.com/projects/big-data-345715/zones/us-central1-a/instances/assignment9?authuser=2&hl=en_US&proj...
onnected, host fingerprint: ssh-rsa 0 14:55:11:23:EF:95:11:A4:79:01:32:EA:06:EF
AD:BB:4C:24:24:01:6E:D6:68:1A:D0:BF:E5:8C:49:C5:5A:56
Linux assignment9 4.19.0-20-cloud-amd64 #1 SMP Debian 4.19.235-1 (2022-03-17) x86_64
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Thu Apr 14 23:08:30 2022 from 35.235.240.1
baddamneha_gmail_com@assignment9:~$ cd mpi4py-3.1.3
baddamneha_gmail_com@assignment9:~/mpi4py-3.1.3$ python3 --version
Python 3.7.3
baddamneha_gmail_com@assignment9:~/mpi4py-3.1.3$ which mpicc
/usr/bin/mpicc
baddamneha_gmail_com@assignment9:~/mpi4py-3.1.3$ vi firstprogram.py
baddamneha_gmail_com@assignment9:~/mpi4py-3.1.3$ mpirun -np 2 python3 firstprogam.py
python3: can't open file 'firstprogam.py': [Errno 2] No such file or directory
python3: can't open file 'firstprogam.py': [Errno 2] No such file or directory
Primary job terminated normally, but 1 process returned
a non-zero exit code. Per user-direction, the job has been aborted.
mpirun detected that one or more processes exited with non-zero status, thus causing
the job to be terminated. The first process to do so was:
Process name: [[32924,1],0]
Exit code: 2
baddamneha_gmail_com@assignment9:~/mpi4py-3.1.3$ mpirun -np 2 python3 firstprogram.py
myRank is 1 in a group of size 2
myRank is 0 in a group of size 2
baddamneha_gmail_com@assignment9:~/mpi4py-3.1.3$