

Cloud Computing Lab 4 Report

PES1UG19CS592

Yashi Chawla

1 Visualisation

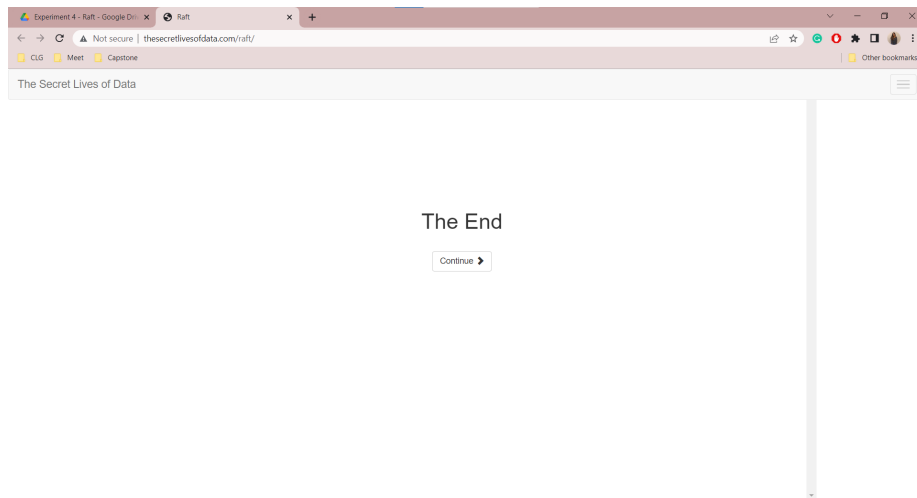


Figure 1: End of visualization

```
Installed /home/peslug19cs592/miniconda3/envs/raft/lib/python3.9/site-packages/cffi-1.15.0-py3.9-linux-x86_64.egg
Searching for pycparser
Reading https://pypi.org/simple/pycparser/
Downloading https://files.pythonhosted.org/packages/62/d5/5f610e8e421e85889f2e55e33b7f9a6795bd982198517d912eb1c76e1a53/pycpar
ser-2.21-py2.py3-none-any.whl#sha256=8ee4542955515e1f6b185e78100aea234072576aa43ab53aefcae078162fca9
Best match: pycparser 2.21
Processing pycparser-2.21-py2.py3-none-any.whl
Installing pycparser-2.21-py2.py3-none-any.whl to /home/peslug19cs592/miniconda3/envs/raft/lib/python3.9/site-packages
Adding pycparser 2.21 to easy-install.pth file

Installed /home/peslug19cs592/miniconda3/envs/raft/lib/python3.9/site-packages/pycparser-2.21-py3.9.egg
Finished processing dependencies for raftos==0.2.6
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4/raftos$ |
```

Figure 2: Install setup

2 Run a raftos cluster and demonstrate leader election

```
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ tail -f task2_node2.txt
LEADER => 127.0.0.1:8001
LEADER IS NOW NODE 2
```

Figure 3: Leader elected

```
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ tail -f task2_node1.txt
LEADER => None
LEADER => 127.0.0.1:8001
LEADER => None
LEADER => 127.0.0.1:8000
LEADER IS NOW NODE 1
```

Figure 4: After simulating crash of the previous leader

```
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ tail -f task2_node3.txt
LEADER => 127.0.0.1:8001
LEADER => None
LEADER => 127.0.0.1:8000
LEADER => None
LEADER => None
LEADER => None
LEADER => None
LEADER => None
```

Figure 5: After simulating crash of the previous leader

3 Verify data is logged and stored by all nodes involved

```
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat 127.0.0.1_8000.log
{"term": 2, "command": {"data_id": 2}}
{"term": 7, "command": {"data_id": 3}}
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat 127.0.0.1_8001.log
{"term": 2, "command": {"data_id": 2}}
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat 127.0.0.1_8002.log
{"term": 2, "command": {"data_id": 2}}
{"term": 7, "command": {"data_id": 3}}
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat 127.0.0.1_8000.state_machine
{"data_id": 3}(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat 127.0.0.1_8001.state_machine
{"data_id": 2}(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat 127.0.0.1_8002.state_machine
{"term": 19, "voted_for": null}(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat 127.0.0.1_8001.storage
{"term": 2, "voted_for": "127.0.0.1:8001"}(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat 127.0.0.1_8002.storage
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ |
```

Figure 6: .log, .statemachine, .storagefiles

```
peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat task3_node1.txt
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat task3_node1.txt
LEADER => 127.0.0.1:8001
LEADER => 127.0.0.1:8001
LEADER => None
LEADER => None
LEADER => 127.0.0.1:8002
LEADER => 127.0.0.1:8002
LEADER => 127.0.0.1:8002
LEADER => None
LEADER => None
LEADER => None(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat task3_node2.txt
LEADER => None
LEADER => 127.0.0.1:8001
LEADER -> 2
done writing data_id
done writing data
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$ cat task3_node3.txt
LEADER => None
LEADER => 127.0.0.1:8001
LEADER => 127.0.0.1:8001
LEADER => 127.0.0.1:8001
LEADER => None
LEADER => None
LEADER => 127.0.0.1:8002
LEADER -> 3
done writing data_id
done writing data
(raft) peslug19cs592@LAPTOP-3NK0JKVJ:~/CC-Assignments/Lab 4/PES1UG19CS592_CCLAB4$
```

Figure 7: Node log files