Relevant Screenshots:

Local testing:

```
[ubuntu@ip-172-31-22-236:~/cs554-project1$ curl http://localhost:8080/convert?lbs=10
{"lbs":10,"kg":4.536,"formula":"kg = lbs * 0.45359237"}ubuntu@ip-172-31-22-236:~/cs554-project1$
```

Testing the endpoint from outside:

```
▶ curl https://simran-cs544hw.duckdns.org/convert\?lbs\=150
{"lbs":150,"kg":68.039,"formula":"kg = lbs * 0.45359237"}%
```

Success cases:

```
▶ curl 'https://simran-cs544hw.duckdns.org/convert?lbs=150'
{"lbs":150,"kg":68.039,"formula":"kg = lbs * 0.45359237"}%

▶ curl 'https://simran-cs544hw.duckdns.org/convert?lbs=0'
{"lbs":0,"kg":0,"formula":"kg = lbs * 0.45359237"}%

▶ curl 'https://simran-cs544hw.duckdns.org/convert?lbs=0.1'
{"lbs":0.1,"kg":0.045,"formula":"kg = lbs * 0.45359237"}%

▶ curl 'https://simran-cs544hw.duckdns.org/health'
{"status":"healthy","timestamp":"2025-09-24T15:54:32.227Z"}%
```

Error cases

```
▶ curl -w "\nStatus: %{http_code}\n" https://simran-cs544hw.duckdns.org/convert
{"error":"Query param lbs is required and must be a number"}
Status: 400

▶ curl -w "\nStatus: %{http_code}\n" https://simran-cs544hw.duckdns.org/convert\?lbs\=-5
{"error":"lbs must be a non-negative, finite number"}
Status: 422

▶ curl -w "\nStatus: %{http_code}\n" https://simran-cs544hw.duckdns.org/convert\?lbs\=abc
{"error":"Query param lbs is required and must be a number"}
Status: 400

▶ curl -w "\nStatus: %{http_code}\n" https://simran-cs544hw.duckdns.org/convert\?lbs\=NaN
{"error":"Query param lbs is required and must be a number"}
Status: 400
```

System surviving reboot:

```
Sep 22 21:51:43 ip-172-31-22-236 node[1234]: ... [22/Sep/2025:21:51:43 +0000] "GET /convert?lbs=150 HTTP/1.1" 200 67 ...
ubuntu@ip-172-31-22-236:~/cs554-project1$ sudo reboot

Broadcast message from root@ip-172-31-22-236 on pts/1 (Mon 2025-09-22 21:51:28 UTC):

The system will reboot now!

ubuntu@ip-172-31-22-236:~/cs554-project1$ Connection to 3.88.99.234 closed by remote host.
Connection to 3.88.99.234 closed.

Desktop/Uni/Cloud Computing
▶ ssh -i impact_laptop.pem ubuntu@3.88.99.234
ssh: connect to host 3.88.99.234 port 22: Operation timed out

Desktop/Uni/Cloud Computing
▶ ssh -i impact_laptop.pem ubuntu@3.88.99.234
ssh: connect to host 3.88.99.234 port 22: Connection refused

Desktop/Uni/Cloud Computing
▶ ssh -i impact_laptop.pem ubuntu@3.88.99.234
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1012-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Mon Sep 22 21:55:14 UTC 2025

  System load:  0.07              Processes:             112
  Usage of /:   46.1% of 6.71GB   Users logged in:       0
  Memory usage: 22%               IPv4 address for enX0: 172.31.22.236
  Swap usage:   0%

 * Ubuntu Pro delivers the most comprehensive open source security and
   compliance features.

   https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

11 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


Last login: Mon Sep 22 21:08:31 2025 from 146.229.118.203
ubuntu@ip-172-31-22-236:~$ sudo systemctl status p1 --no-pager
● p1.service - CS454 Project 1 service
     Loaded: loaded (/etc/systemd/system/p1.service; enabled; preset: enabled)
     Active: active (running) since Mon 2025-09-22 21:51:51 UTC; 3min 45s ago
   Main PID: 527 (node)
      Tasks: 10 (limit: 1121)
     Memory: 57.7M (peak: 63.3M)
        CPU: 461ms
     CGroup: /system.slice/p1.service
             └─527 /usr/bin/node server.js

Sep 22 21:51:51 ip-172-31-22-236 systemd[1]: Started p1.service - CS454 Project 1 service.
Sep 22 21:51:55 ip-172-31-22-236 node[527]: Server listening on port 8080
Sep 22 21:51:55 ip-172-31-22-236 node[527]: Health check: http://localhost:8080/health
Sep 22 21:51:55 ip-172-31-22-236 node[527]: Convert endpoint: http://localhost:8080/convert?lbs=150
ubuntu@ip-172-31-22-236:~$ curl http://localhost:8080/health
ubuntu@ip-172-31-22-236:~$ curl http://localhost:8080/health
{"status":"healthy","timestamp":"2025-09-22T21:56:14.661Z"}ubuntu@ip-172-31-22-236:~$
```