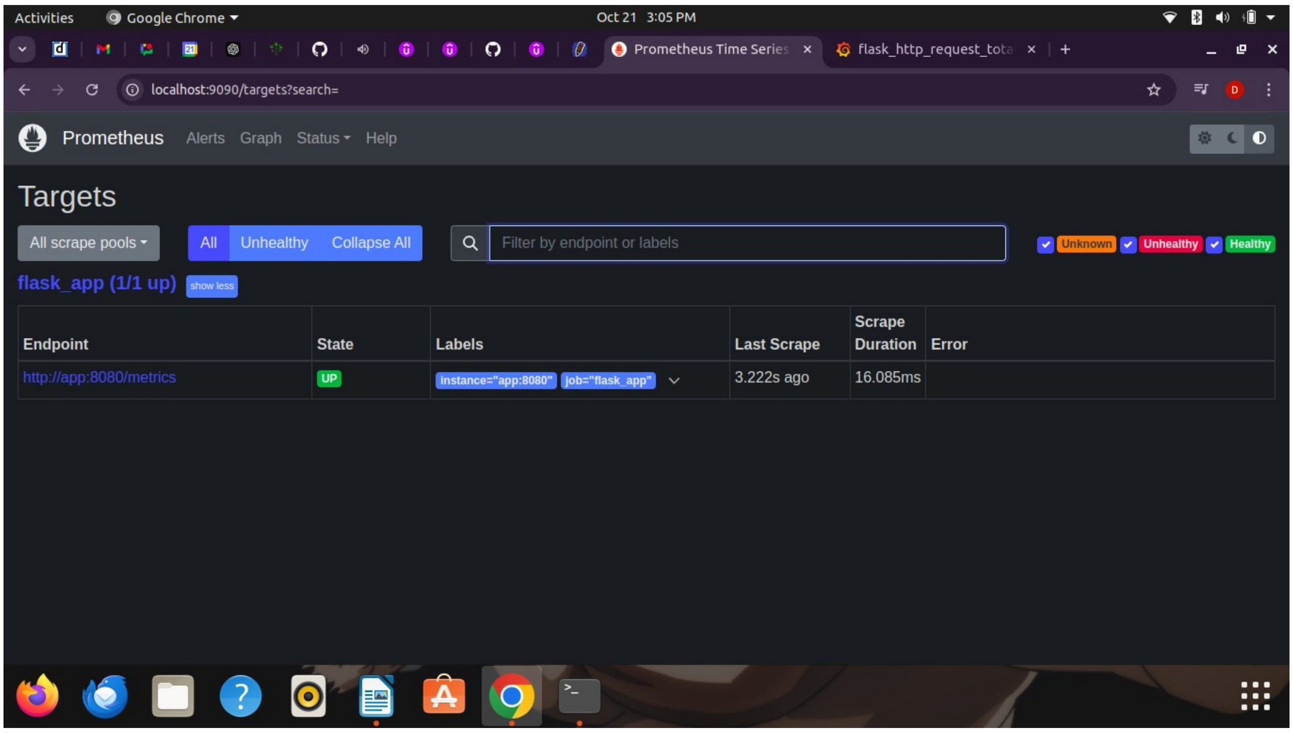
➔Export the metrics (like request per second, memory usage, cpu usage etc) in the existing mini project given to Interns
➔Install Prometheus and Grafana using Docker (with docker-compose)
➔Configure prometheus (scrape configs) such way that it can scrape the metrics from default metric path of the application job
➔Validate the entire configuration to check if the data is coming or not in Prometheus UI
➔Create the Dashboards in Grafana on top of the metrics exported by adding the Prometheus as a Datasource.

Solution:

```
sigmoid@sigmoid-ThinkPad-L460:~$ mkdir my-mini-project
sigmoid@sigmoid-ThinkPad-L460:~$ cd my-mini-project
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project$ mkdir app
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project/app$ nano Dockerfile
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project/app$ cat Dockerfile
FROM python:3.9-slim

WORKDIR /app

COPY requirements.txt requirements.txt
RUN pip install -r requirements.txt

COPY . .

CMD ["python", "your_flask_app.py"]

sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project/app$ nano requirements.txt
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project/app$ cat requirements.txt
Flask
prometheus_flask_exporter
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project/app$ nano your_flask_app.py
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project/app$ cat your_flask_app.py
from flask import Flask
from prometheus_flask_exporter import PrometheusMetrics

app = Flask(__name__)
metrics = PrometheusMetrics(app)

@app.route('/')
def hello():
    return 'Hello, World!'

if __name__ == '__main__':
    app.run(host='0.0.0.0', port=8080)
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project/app$ cd ..
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project$ nano docker-compose.yml
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project$ cat docker-compose.yml
version: '3.8'
```

```
services:
  app:
    build: .
    ports:
      - "8080:8080"

  prometheus:
    image: prom/prometheus
    ports:
      - "9090:9090"
    volumes:
      - ./prometheus.yml:/etc/prometheus/prometheus.yml

  grafana:
    image: grafana/grafana
    ports:
      - "3000:3000"

sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project$ nano prometheus.yml
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project$ cat prometheus.yml
global:
  scrape_interval: 15s

scrape_configs:
  - job_name: 'flask_app'
    static_configs:
      - targets: ['app:8080']
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project$ docker-compose up -d
WARN[0000] /home/sigmoid/my-mini-project/docker-compose.yml: the attribute `version` is
obsolete, it will be ignored, please remove it to avoid potential confusion
[+] Running 3/3
       Container my-mini-project-app-1         Running
0.0s
       Container my-mini-project-prometheus-1  Started
1.2s
       Container my-mini-project-grafana-1     Started
1.1s
sigmoid@sigmoid-ThinkPad-L460:~/my-mini-project$
```

Snap Shots:

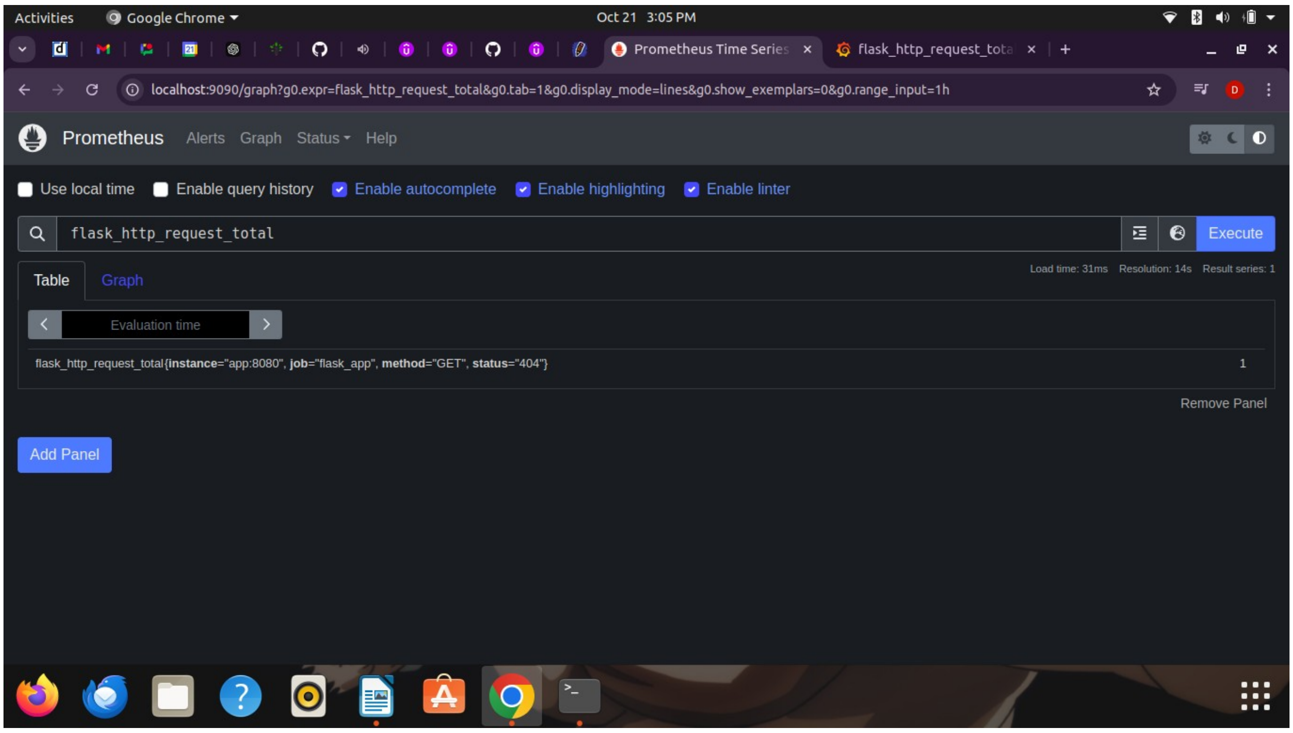


Targets

All scrape pools | All | Unhealthy | Collapse All | Filter by endpoint or labels | ✓ Unknown ✓ Unhealthy ✓ Healthy

flask_app (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://app:8080/metrics	UP	instance="app:8080" job="flask_app"	3.222s ago	16.085ms	



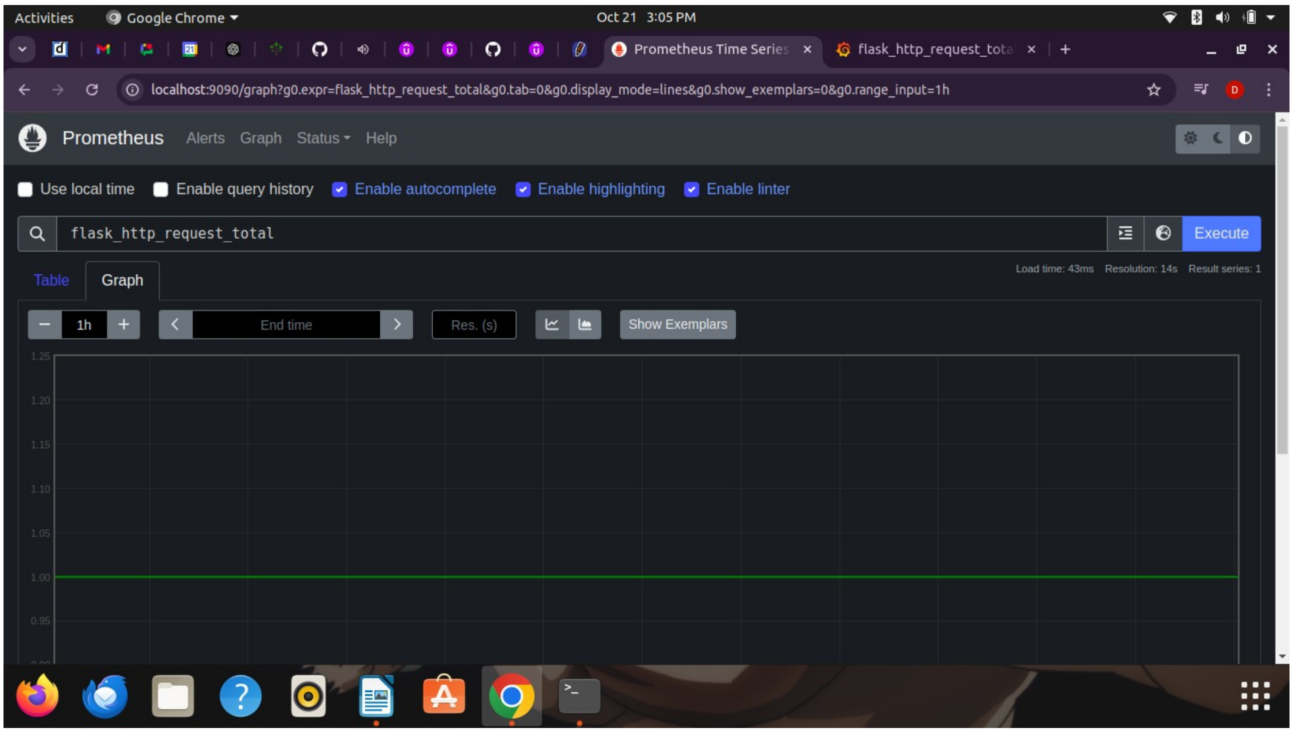
localhost:9090/graph?g0.expr=flask_http_request_total&g0.tab=1&g0.display_mode=lines&g0.show_exemplars=0&g0.range_input=1h

Use local time [ ] · Enable query history [ ] · Enable autocomplete [✓] · Enable highlighting [✓] · Enable linter [✓]

```
flask_http_request_total
```

Load time: 31ms Resolution: 14s Result series: 1

```
flask_http_request_total{instance="app:8080", job="flask_app", method="GET", status="404"}    1
```

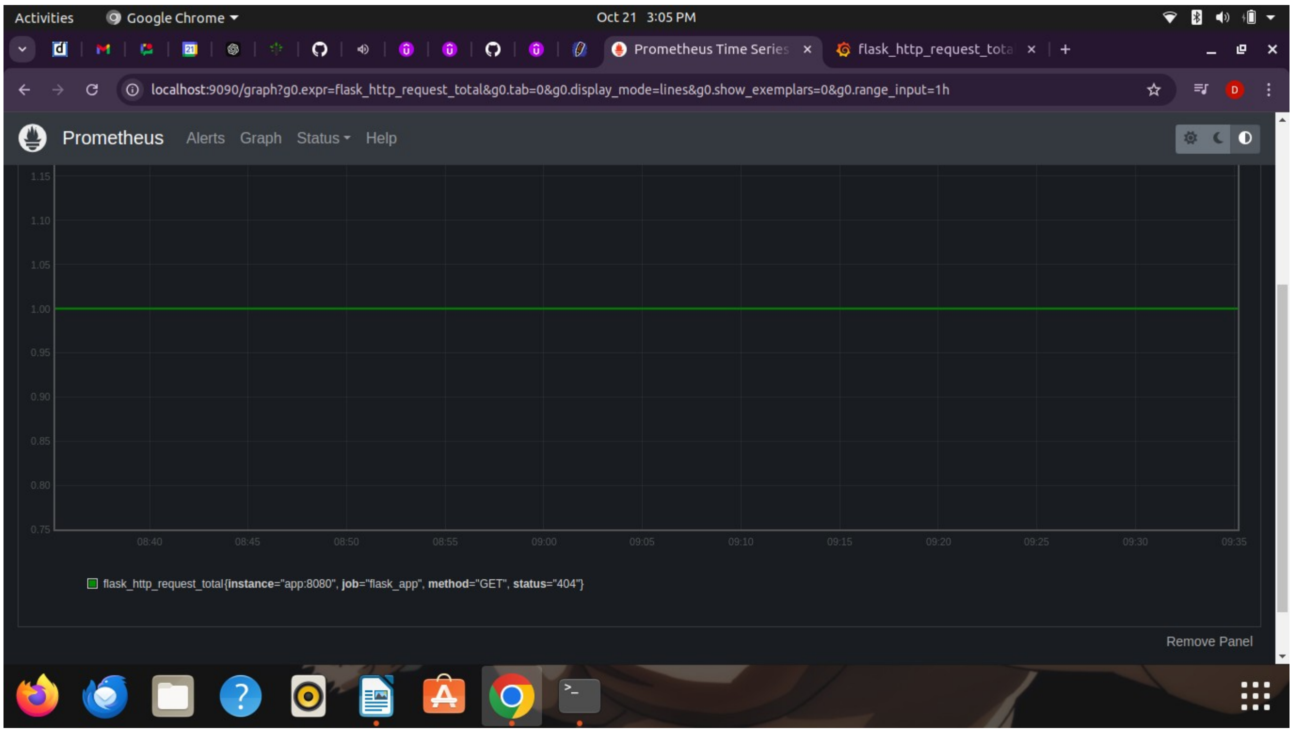


localhost:9090/graph?g0.expr=flask_http_request_total&g0.tab=0&g0.display_mode=lines&g0.show_exemplars=0&g0.range_input=1h

Use local time [ ] Enable query history [ ] Enable autocomplete [✓] Enable highlighting [✓] Enable linter [✓]

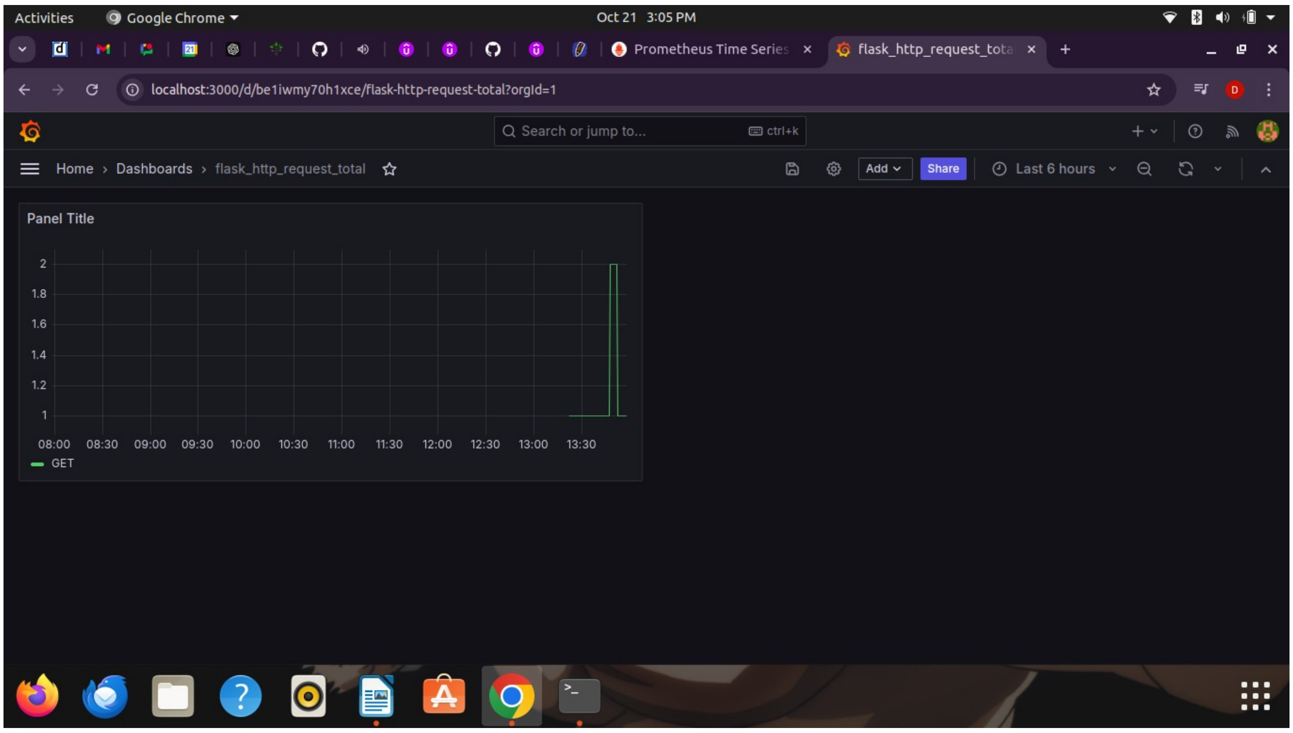
```
flask_http_request_total
```

Load time: 43ms Resolution: 14s Result series: 1



localhost:9090/graph?g0.expr=flask_http_request_total&g0.tab=0&g0.display_mode=lines&g0.show_exemplars=0&g0.range_input=1h

🟩 flask_http_request_total{**instance**="app:8080", **job**="flask_app", **method**="GET", **status**="404"}


Activities
Google Chrome
Oct 21 3:05 PM
Prometheus Time Series
flask_http_request_tota
localhost:3000/d/be1iwmy70h1xce/flask-http-request-total?orgId=1
Search or jump to...
ctrl+k
Home › Dashboards › flask_http_request_total
Add
Share
Last 6 hours
Panel Title
2
1.8
1.6
1.4
1.2
1
08:00
08:30
09:00
09:30
10:00
10:30
11:00
11:30
12:00
12:30
13:00
13:30
GET