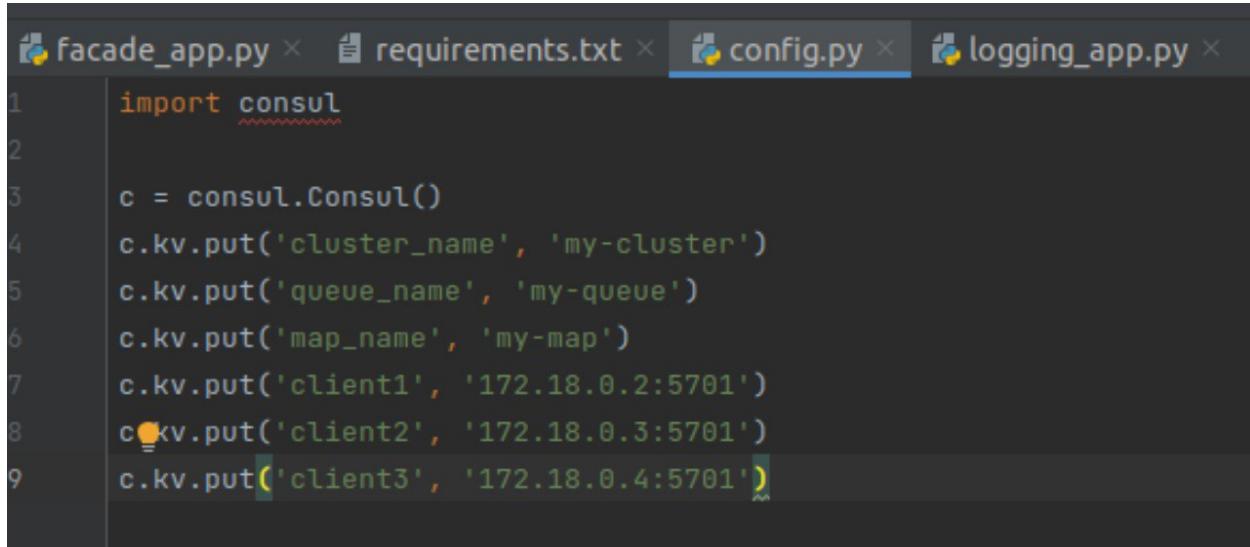
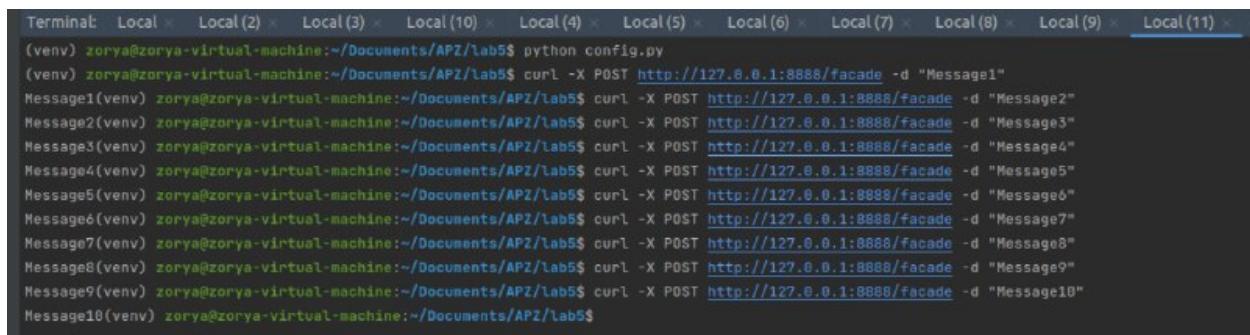


Цього разу для реєстрації та підключення до серверів я використовувала consul agent. Все звязане з системою Hazelcast я задаю в конфіг файлі:



```
facade_app.py × requirements.txt × config.py × logging_app.py ×
1 import consul
2
3 c = consul.Consul()
4 c.kv.put('cluster_name', 'my-cluster')
5 c.kv.put('queue_name', 'my-queue')
6 c.kv.put('map_name', 'my-map')
7 c.kv.put('client1', '172.18.0.2:5701')
8 c.kv.put('client2', '172.18.0.3:5701')
9 c.kv.put('client3', '172.18.0.4:5701')
```

В параметрах logging_app та messages_app я задаю першим аргументом номер клієнта до якого сервер має підключитись (відповідає іп адресам заданим в config.py) а другим аргументом порт на якому буде ранитись сервер. В аргументах facade_app вказуємо тільки порт на якому раниться сервер. Спробуємо записати 10 повідомлень за допомогою post запитів та подивимось на консольний ввід кожного із серверів:



```
Terminal Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) × Local (9) × Local (11) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ python config.py
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message1"
Message1(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message2"
Message2(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message3"
Message3(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message4"
Message4(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message5"
Message5(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message6"
Message6(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message7"
Message7(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message8"
Message8(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message9"
Message9(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message10"
Message10(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$
```

консоль facade_service:

```
Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) × Local (9) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd facade-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/facade-service$ python facade_app.py 8888
* Serving Flask app 'facade_app' (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://127.0.0.1:8888 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
127.0.0.1 - - [05/Jun/2022 15:27:43] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:45] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:47] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:50] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:52] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:54] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:56] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:59] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:28:02] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:28:05] "POST /facade HTTP/1.1" 200 -
```

Консоль logging service 1:

```
Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd logging-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/logging-service$ python logging_app.py 1 8000
* Serving Flask app 'logging_app' (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://127.0.0.1:8000 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
Message9
127.0.0.1 - - [05/Jun/2022 15:28:02] "POST /logging HTTP/1.1" 200 -
Message10
127.0.0.1 - - [05/Jun/2022 15:28:05] "POST /logging HTTP/1.1" 200 -
```

Консоль logging service 2:

```
Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd logging-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/logging-service$ python logging_app.py 2 8001
* Serving Flask app 'logging_app' (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://127.0.0.1:8001 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-778-524
Message1
127.0.0.1 - - [05/Jun/2022 15:27:43] "POST /logging HTTP/1.1" 200 -
Message2
127.0.0.1 - - [05/Jun/2022 15:27:45] "POST /logging HTTP/1.1" 200 -
Message5
127.0.0.1 - - [05/Jun/2022 15:27:52] "POST /logging HTTP/1.1" 200 -
Message6
127.0.0.1 - - [05/Jun/2022 15:27:54] "POST /logging HTTP/1.1" 200 -
Message7
127.0.0.1 - - [05/Jun/2022 15:27:56] "POST /logging HTTP/1.1" 200 -
Message8
127.0.0.1 - - [05/Jun/2022 15:27:59] "POST /logging HTTP/1.1" 200 -
```

Консоль logging service 3:

```
Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd logging-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/logging-service$ python logging_app.py 3 8002
* Serving Flask app 'logging_app' (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://127.0.0.1:8002 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-778-524
Message3
127.0.0.1 - - [05/Jun/2022 15:27:47] "POST /logging HTTP/1.1" 200 -
Message4
127.0.0.1 - - [05/Jun/2022 15:27:50] "POST /logging HTTP/1.1" 200 -
Message7
127.0.0.1 - - [05/Jun/2022 15:27:56] "POST /logging HTTP/1.1" 200 -
Message8
127.0.0.1 - - [05/Jun/2022 15:27:59] "POST /logging HTTP/1.1" 200 -
```

Консоль messages service 1:

```
Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd messages-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/messages-service$ python messages_app.py 1 8800
* Serving Flask app 'messages_app' (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://127.0.0.1:8800 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
Message2
127.0.0.1 - - [05/Jun/2022 15:27:45] "POST /messages HTTP/1.1" 200 -
Message3
127.0.0.1 - - [05/Jun/2022 15:27:47] "POST /messages HTTP/1.1" 200 -
Message7
127.0.0.1 - - [05/Jun/2022 15:27:56] "POST /messages HTTP/1.1" 200 -
Message10
127.0.0.1 - - [05/Jun/2022 15:28:05] "POST /messages HTTP/1.1" 200 -
Structure
Bookmarks
```

Консоль messages service 2:

```
Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/messages-service$ python messages_app.py 2 8801
* Serving Flask app 'messages_app' (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://127.0.0.1:8801 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
Message1
127.0.0.1 - - [05/Jun/2022 15:27:43] "POST /messages HTTP/1.1" 200 -
Message4
127.0.0.1 - - [05/Jun/2022 15:27:50] "POST /messages HTTP/1.1" 200 -
Message5
127.0.0.1 - - [05/Jun/2022 15:27:52] "POST /messages HTTP/1.1" 200 -
Message6
127.0.0.1 - - [05/Jun/2022 15:27:54] "POST /messages HTTP/1.1" 200 -
Message8
127.0.0.1 - - [05/Jun/2022 15:27:59] "POST /messages HTTP/1.1" 200 -
Message9
127.0.0.1 - - [05/Jun/2022 15:28:02] "POST /messages HTTP/1.1" 200 -
Structure
Bookmarks
```

Як ми бачимо всі logging сервери позаписували рандомно отримані повідомлення в тар а messages сервери викликані так само в рандомному порядку прочитали з queue в локальну змінну. Тепер три рази викличемо get запити і ще раз перевіримо вивід:

```
Proj Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) × Local (9) × Local (11) ×
Message9(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X POST http://127.0.0.1:8888/facade -d "Message10"
Message10(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
Message8
Message6
Message5
Message2
Message3
Message4
Message1
Message10
Message9
Message7
Messages-service response: Message1
Message4
Message5
Message6
Message8
Message9
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
Message8
Message6
Message5
Message2
Message3
Message4
Message1
Message10
Message9
Message7
Messages-service response: Message2
Message3

Version Control Run TODO Problems Terminal Python Packages Python Console Services Endpoints
```

```
Terminal: Local Local (2) Local (3) Local (10) Local (4) Local (5) Local (6) Local (7) Local (8) Local (9) Local (11)
Message9
(Cvenv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
Message8
Message6
Message5
Message2
Message3
Message4
Message1
Message10
Message9
Message7
Messages-service response: Message2
Message3
Message7
Message10
(Cvenv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
Message8
Message6
Message5
Message2
Message3
Message4
Message1
Message10
Message9
Message7
Messages-service response: Message1
Message4
Message5
Message6
```

(другий скрін не повний, вивід третього запиту get від messages service такий ж як і першого)

Консоль facade service:

```
Proj Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd facade-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/facade-service$ python facade_app.py 8888
 * Serving Flask app 'facade_app' (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://127.0.0.1:8888 (Press CTRL+C to quit)
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 785-770-524
127.0.0.1 - - [05/Jun/2022 15:27:43] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:45] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:47] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:50] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:52] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:54] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:56] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:27:59] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:28:02] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:28:05] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:32:03] "GET /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:32:09] "GET /facade HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:32:12] "GET /facade HTTP/1.1" 200 -
```

Консоль logging service 1:

```
Proj Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd logging-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/logging-service$ python logging_app.py 1 8000
 * Serving Flask app 'logging_app' (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://127.0.0.1:8000 (Press CTRL+C to quit)
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 785-770-524
Message9
127.0.0.1 - - [05/Jun/2022 15:28:02] "POST /logging HTTP/1.1" 200 -
Message10
127.0.0.1 - - [05/Jun/2022 15:28:05] "POST /logging HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:32:09] "GET /logging HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:32:12] "GET /logging HTTP/1.1" 200 -
```

Консоль logging service 2:

```
Proj Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd logging-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/logging-service$ python logging_app.py 2 8001
* Serving Flask app 'logging_app' (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://127.0.0.1:8001 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
Message1
127.0.0.1 - - [05/Jun/2022 15:27:43] "POST /logging HTTP/1.1" 200 -
Message2
127.0.0.1 - - [05/Jun/2022 15:27:45] "POST /logging HTTP/1.1" 200 -
Message5
127.0.0.1 - - [05/Jun/2022 15:27:52] "POST /logging HTTP/1.1" 200 -
Message6
127.0.0.1 - - [05/Jun/2022 15:27:54] "POST /logging HTTP/1.1" 200 -
```

Консоль logging service 3:

```
Proj Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd logging-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/logging-service$ python logging_app.py 3 8002
* Serving Flask app 'logging_app' (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://127.0.0.1:8002 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
Message3
127.0.0.1 - - [05/Jun/2022 15:27:47] "POST /logging HTTP/1.1" 200 -
Message4
127.0.0.1 - - [05/Jun/2022 15:27:50] "POST /logging HTTP/1.1" 200 -
Message7
127.0.0.1 - - [05/Jun/2022 15:27:56] "POST /logging HTTP/1.1" 200 -
Message8
127.0.0.1 - - [05/Jun/2022 15:27:59] "POST /logging HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:32:03] "GET /logging HTTP/1.1" 200 -
```

Консоль messages service 1:

```
Pro Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd messages-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/messages-service$ python messages_app.py 1 8800
* Serving Flask app 'messages_app' (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://127.0.0.1:8800 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
Message2
127.0.0.1 - - [05/Jun/2022 15:27:45] "POST /messages HTTP/1.1" 200 -
Message3
127.0.0.1 - - [05/Jun/2022 15:27:47] "POST /messages HTTP/1.1" 200 -
Message7
127.0.0.1 - - [05/Jun/2022 15:27:56] "POST /messages HTTP/1.1" 200 -
Message10
127.0.0.1 - - [05/Jun/2022 15:28:05] "POST /messages HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:32:09] "GET /messages HTTP/1.1" 200 -
```

Консоль messages service 2:

```
Pro Terminal: Local × Local (2) × Local (3) × Local (10) × Local (4) × Local (5) × Local (6) × Local (7) × Local (8) × Local (9) ×
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5$ cd messages-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/lab5/messages-service$ python messages_app.py 2 8801
* Serving Flask app 'messages_app' (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://127.0.0.1:8801 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
Message1
127.0.0.1 - - [05/Jun/2022 15:27:43] "POST /messages HTTP/1.1" 200 -
Message4
127.0.0.1 - - [05/Jun/2022 15:27:56] "POST /messages HTTP/1.1" 200 -
Message5
127.0.0.1 - - [05/Jun/2022 15:27:52] "POST /messages HTTP/1.1" 200 -
Message6
127.0.0.1 - - [05/Jun/2022 15:27:54] "POST /messages HTTP/1.1" 200 -
Message8
127.0.0.1 - - [05/Jun/2022 15:27:59] "POST /messages HTTP/1.1" 200 -
Message9
127.0.0.1 - - [05/Jun/2022 15:28:02] "POST /messages HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:32:03] "GET /messages HTTP/1.1" 200 -
127.0.0.1 - - [05/Jun/2022 15:32:12] "GET /messages HTTP/1.1" 200 -
```

Бачимо такий самий результат як і в попередньому домашньому завданні. Тобто зчитування відбулося успішно