Output document

1. System normal working and edge cases test:

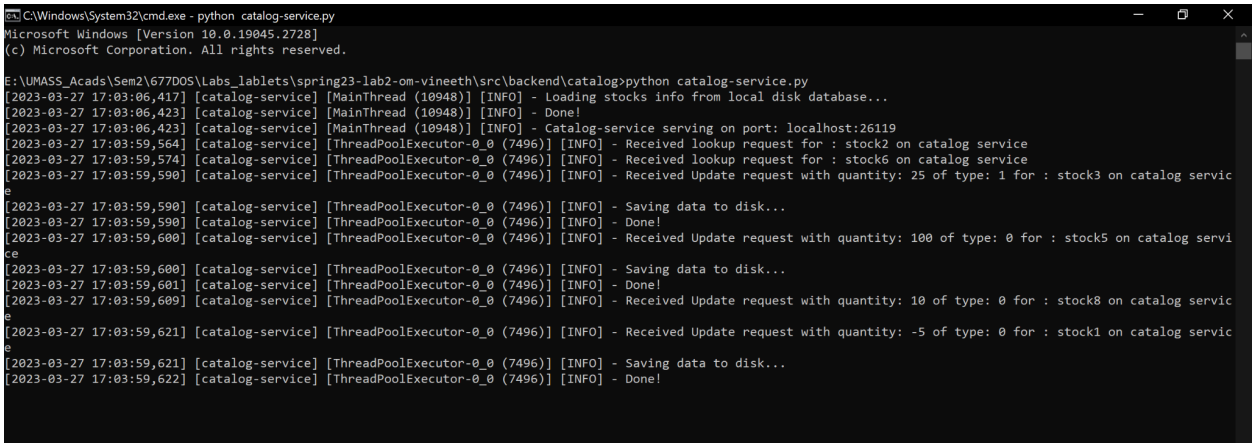
Client:

```
E:\UMASS_Acads\Sem2\677DOS\Labs_lablets\spring23-lab2-om-vineeth\src\test>python frontend_service_test.py
Testing normal working
Connecting frontend server on port:  localhost : 26111
Lookup Case: valid stock name
GET request: /stocks?stockname=stock2
Response:{'data': {'name': 'stock2', 'price': 11.8, 'quantity': 22}}

Lookup Case: invalid stock name
GET request: /stocks?stockname=stock6
Response:{'error': {'code': 404, 'message': 'stock not found'}}

Trade Case: success - valid order data
POST request: {'name': 'stock3', 'quantity': 25, 'type': 'SELL'}
Response:{'data': {'transaction_number': 1}}

Trade Case: failure - trade quantity more than available stock volume
POST request: {'name': 'stock5', 'quantity': 100, 'type': 'BUY'}
Response:{'error': {'code': 404, 'message': 'Trading not permitted due to insufficient volume'}}

Trade Case: failure - invalid stock name
POST request: {'name': 'stock8', 'quantity': 10, 'type': 'BUY'}
Response:{'error': {'code': 404, 'message': 'Stock not found'}}

Trade Case: failure - invalid trade quantity (negative)
POST request: {'name': 'stock1', 'quantity': -5, 'type': 'BUY'}
Response:{'error': {'code': 404, 'message': 'Stock not found'}}

Trade Case: failure - invalid trade type
POST request: {'name': 'stock1', 'quantity': 5, 'type': 'word'}
Response:{'error': {'code': 404, 'message': 'Internal Server Error'}}

E:\UMASS_Acads\Sem2\677DOS\Labs_lablets\spring23-lab2-om-vineeth\src\test>
```

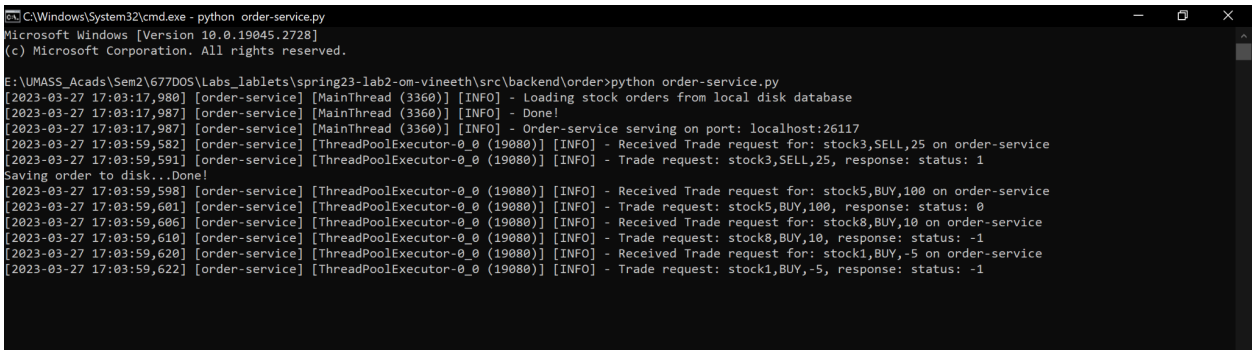
Frontend server:

```
C:\Windows\System32\cmd.exe - python  frontend-service.py
Microsoft Windows [Version 10.0.19045.2728]
(c) Microsoft Corporation. All rights reserved.

E:\UMASS_Acads\Sem2\677DOS\Labs_lablets\spring23-lab2-om-vineeth\src\frontend>python frontend-service.py
[2023-03-27 17:02:52,497] [frontend-service] [MainThread (20576)] [INFO] - Server started http://0.0.0.0:26111
[2023-03-27 17:03:59,549] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Sending lookup request for : stock2
[2023-03-27 17:03:59,566] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Lookup request: stock2, response: Price of stock: 11.8, Volume of the
stock: 22
[2023-03-27 17:03:59,568] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - 127.0.0.1 "GET /stocks?stockname=stock2 HTTP/1.1" 200 -
[2023-03-27 17:03:59,569] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Sending lookup request for : stock6
[2023-03-27 17:03:59,574] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Lookup request: stock6, response: Price of stock: -1.0, Volume of the
stock: -1
[2023-03-27 17:03:59,575] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - 127.0.0.1 "GET /stocks?stockname=stock6 HTTP/1.1" 200 -
[2023-03-27 17:03:59,576] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Sending trade request of type: SELL for : stock3 with quantity: 25
[2023-03-27 17:03:59,592] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Trade request: stock3, 25, response status : 1
[2023-03-27 17:03:59,594] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - 127.0.0.1 "POST /orders HTTP/1.1" 200 -
[2023-03-27 17:03:59,595] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Sending trade request of type: BUY for : stock5 with quantity: 100
[2023-03-27 17:03:59,602] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Trade request: stock5, 100, response status : 0
[2023-03-27 17:03:59,602] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - 127.0.0.1 "POST /orders HTTP/1.1" 200 -
[2023-03-27 17:03:59,603] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Sending trade request of type: BUY for : stock8 with quantity: 10
[2023-03-27 17:03:59,611] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Trade request: stock8, 10, response status : -1
[2023-03-27 17:03:59,616] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - 127.0.0.1 "POST /orders HTTP/1.1" 200 -
[2023-03-27 17:03:59,617] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Sending trade request of type: BUY for : stock1 with quantity: -5
[2023-03-27 17:03:59,623] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Trade request: stock1, -5, response status : -1
[2023-03-27 17:03:59,624] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - 127.0.0.1 "POST /orders HTTP/1.1" 200 -
[2023-03-27 17:03:59,627] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - Sending trade request of type: word for : stock1 with quantity: 5
[2023-03-27 17:03:59,630] [frontend-service] [Thread-1 (process_request_thread) (18860)] [ERROR] - Failed to get trade response for stock1 with exception: unknown enum
label "word"
[2023-03-27 17:03:59,630] [frontend-service] [Thread-1 (process_request_thread) (18860)] [INFO] - 127.0.0.1 "POST /orders HTTP/1.1" 200 -
```

Catalog server:



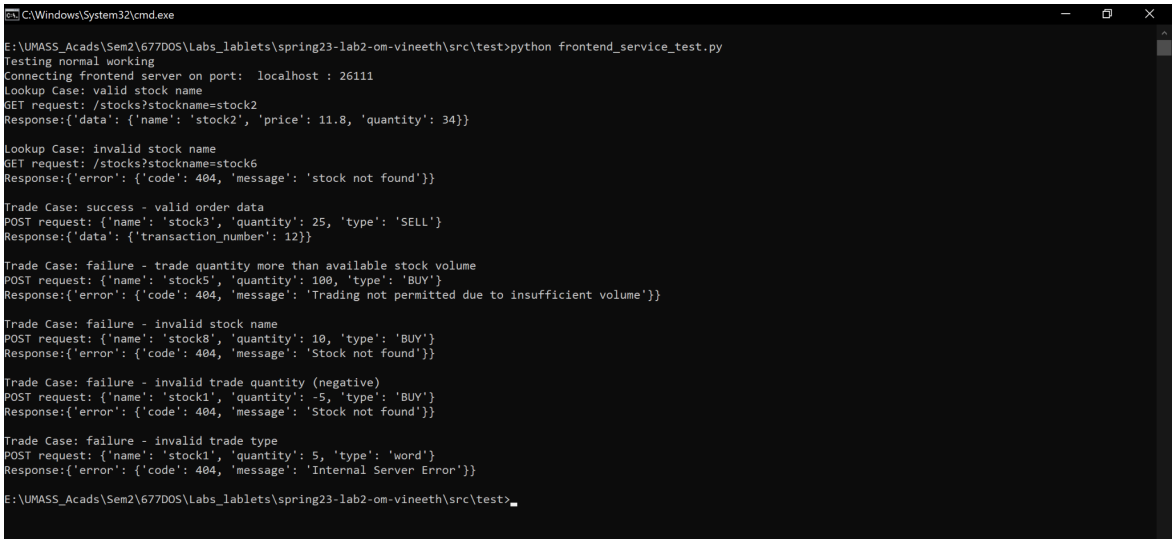
Order server:

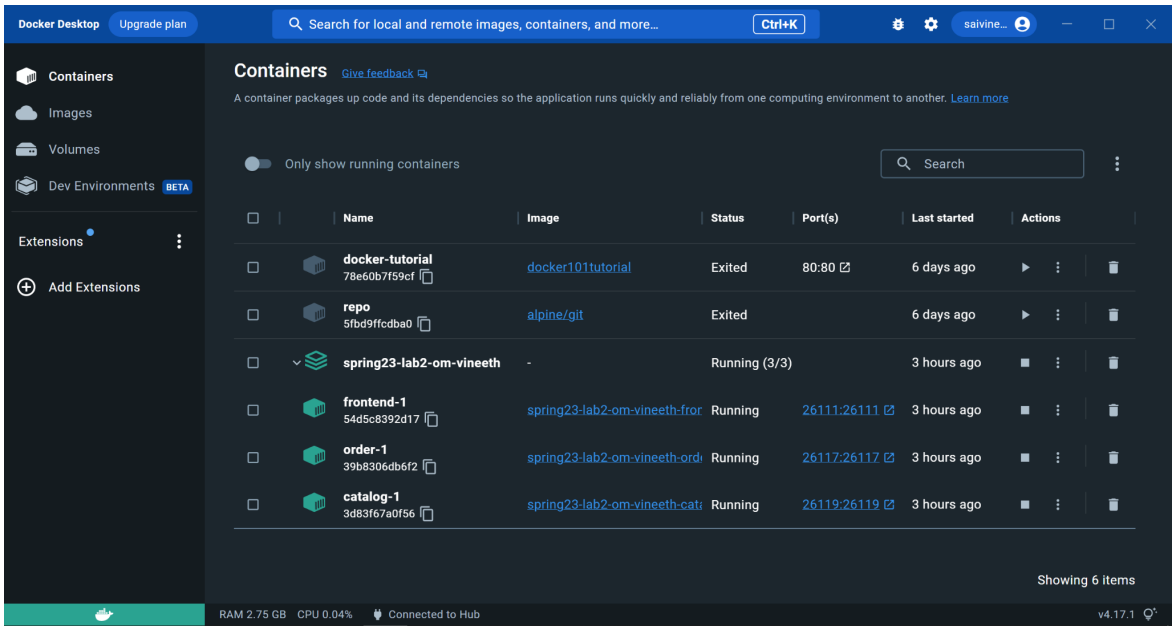


2. Session test:

Number of lookup requests in the session are set to 5
Order requests are sent with a probability of 0.7.

Client:



3. Docker desktop screenshot:

Docker desktop screenshot showing 3 docker containers running for each of the 3 microservices - docker containers are started through docker-compose command.