


```
File Edit Selection View Go ... Untitled (Workspace) DfileProfiler ...
node.py X
Process Coordination & Leader Election > node.py > get
12 def put():
22     else:
23         buffer.append(payload)
24         return jsonify({"status": "buffered"})
25 @app.route("/get", methods=["GET"])
26 def get():
27     key = request.args.get('key')
28     return jsonify({"value": data_store.get(key, None), "vc": vc.clock})
29 def process_buffer():
30     while True:
31         for msg in buffer[:]:
32             if vc.is_causally_ready(msg['vector_clock'], msg['sender']):
33                 buffer.remove(msg)
34                 vc.update(msg['vector_clock'])
35                 data_store[msg['key']] = (msg['value'], msg['vector_clock'])
36             time.sleep(1)
37 if __name__ == "__main__":
38     threading.Thread(target=process_buffer, daemon=True).start()
39     app.run(host="0.0.0.0", port=PORT)

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] ... ^ x
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://192.168.1.3:5000
Press CTRL+C to quit
master 0 0 0 Spaces: 4 UTF-8 Python 3.13.1 64-bit
```

```
File Edit Selection View Go ... Untitled (Workspace) DfileProfiler ...
client.py X
Process Coordination & Leader Election > client.py > ...
1 import requests, time
2 nodes = {
3     'A': 'http://localhost:5000',
4     'B': 'http://localhost:5001',
5     'C': 'http://localhost:5002'
6 }
7 # Simulate a causally ordered PUT
8 vc1 = {'A': 1, 'B': 0, 'C': 0}
9 vc2 = {'A': 1, 'B': 1, 'C': 0}
10 print("Writing key1 from A")
11 r1 = requests.post(nodes['A'] + "/put", json={
12     "key": "x",
13     "value": "1",
14     "vector_clock": vc1,
15     "sender": "A"
16 })
17 print(r1.json())
18 time.sleep(1)
19 print("Writing key1 from B (dependent)")
20 r2 = requests.post(nodes['B'] + "/put", json={

resp = self.send(prepare, **send_kwargs)
File "C:\Users\hp\AppData\Local\Programs\Python\Python313\Lib\site-packages\requests\sessions.py", line 703, in send
r = adapter.send(request, **kwargs)
File "C:\Users\hp\AppData\Local\Programs\Python\Python313\Lib\site-packages\requests\adapters.py", line 700, in send
raise ConnectionError(e, request=request)
requests.exceptions.ConnectionError: HTTPConnectionPool(host='localhost', port=5000): Max retries exceeded with url: /put (Caused by NewConnectionError('<urllib3.connection.HTTPConnection object at 0x0000020B906E2F90>: Failed to establish a new connection: [WinError 10061] No connection could be made because the target machine actively refused it'))
PS C:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election>

master 0 0 0 Spaces: 4 UTF-8 Python 3.13.1 64-bit
```

The screenshot shows a Windows IDE with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, and a search icon. The title bar indicates the file is 'Untitled (Workspace)'. The main editor window displays a Python script named 'client.py' with the following code:

```

8  vc1 = {'A': 1, 'B': 0, 'C': 0}
9  vc2 = {'A': 1, 'B': 1, 'C': 0}
10 print("Writing key1 from A")
11 r1 = requests.post(nodes['A'] + "/put", json={
12     "key": "x",
13     "value": "1",
14     "vector_clock": vc1,
15     "sender": "A"
16 })
17 print(r1.json())
18 time.sleep(1)
19 print("Writing key1 from B (dependent)")
20 r2 = requests.post(nodes['B'] + "/put", json={
21     "key": "x",
22     "value": "2",
23     "vector_clock": vc2,
24     "sender": "B"
25 })
26 print(r2.json())

```

The bottom panel shows the 'TERMINAL' output, which contains the following error message:

```

resp = self.send(prepare, **send_kwargs)
File "C:\Users\hp\AppData\Local\Programs\Python\Python313\Lib\site-packages\requests\sessions.py", line 783, in send
r = adapter.send(request, **kwargs)
File "C:\Users\hp\AppData\Local\Programs\Python\Python313\Lib\site-packages\requests\adapters.py", line 700, in send
raise ConnectionError(e, request=request)
requests.exceptions.ConnectionError: HTTPConnectionPool(host='localhost', port=5000): Max retries exceeded with url: /put (Caused by NewConnectionError('<urllib3.connection.HTTPConnection object at 0x0000020B906E2F90>: Failed to establish a new connection: [WinError 10061] No connection could be made because the target machine actively refused it'))
PS C:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election>

```

The status bar at the bottom shows the file is at 'Ln 15, Col 15', with 4 spaces, 4 UTF-8 characters, and is running Python 3.13.1 64-bit.

The screenshot shows a Dockerfile editor in VS Code. The Dockerfile content is as follows:

```

1 FROM python:3.10-slim-bullseye
2
3 WORKDIR /app
4 COPY ./src /app
5
6 # Update system packages to reduce vulnerabilities
7 RUN apt-get update && apt-get upgrade -y && apt-get clean && rm -rf /var/lib/apt/lists/*
8
9 RUN pip install --upgrade pip && pip install flask requests
10
11 ENV FLASK_APP=node.py
12
13 CMD ["python", "node.py"]

```

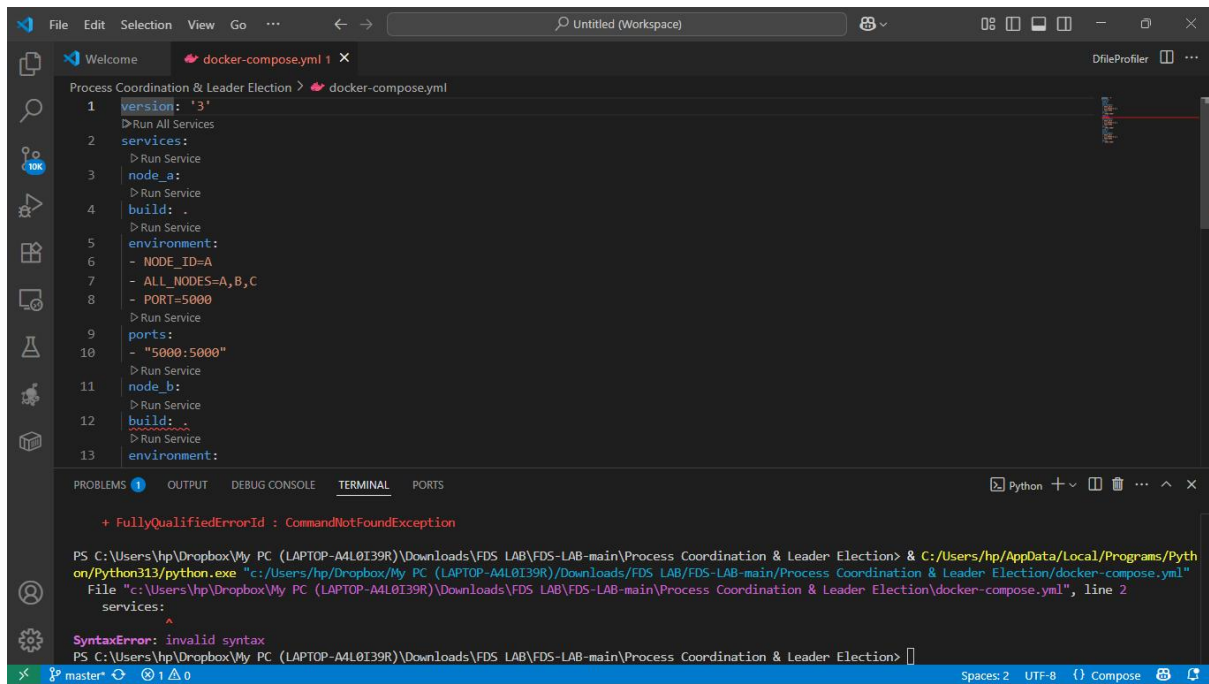
The terminal output shows the command being executed and the resulting error:

```

PS C:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election> C:\Users\hp\AppData\Local\Programs\Python\Python313\python.exe "c:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election\Dockerfile.py"
File "c:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election\Dockerfile.py", line 1
    FROM python:3.10-slim
    ^^^^^^
SyntaxError: invalid syntax
PS C:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election>

```

The error message indicates a syntax error in the Dockerfile, specifically in the `FROM` instruction on line 1. The error is `SyntaxError: invalid syntax`.



```
1 version: '3'
2 services:
3   node_a:
4     build: .
5     environment:
6       - NODE_ID=A
7       - ALL_NODES=A,B,C
8     ports:
9       - "5000:5000"
10  node_b:
11    build: .
12    environment:
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

+ FullyQualifiedErrorId : CommandNotFoundException

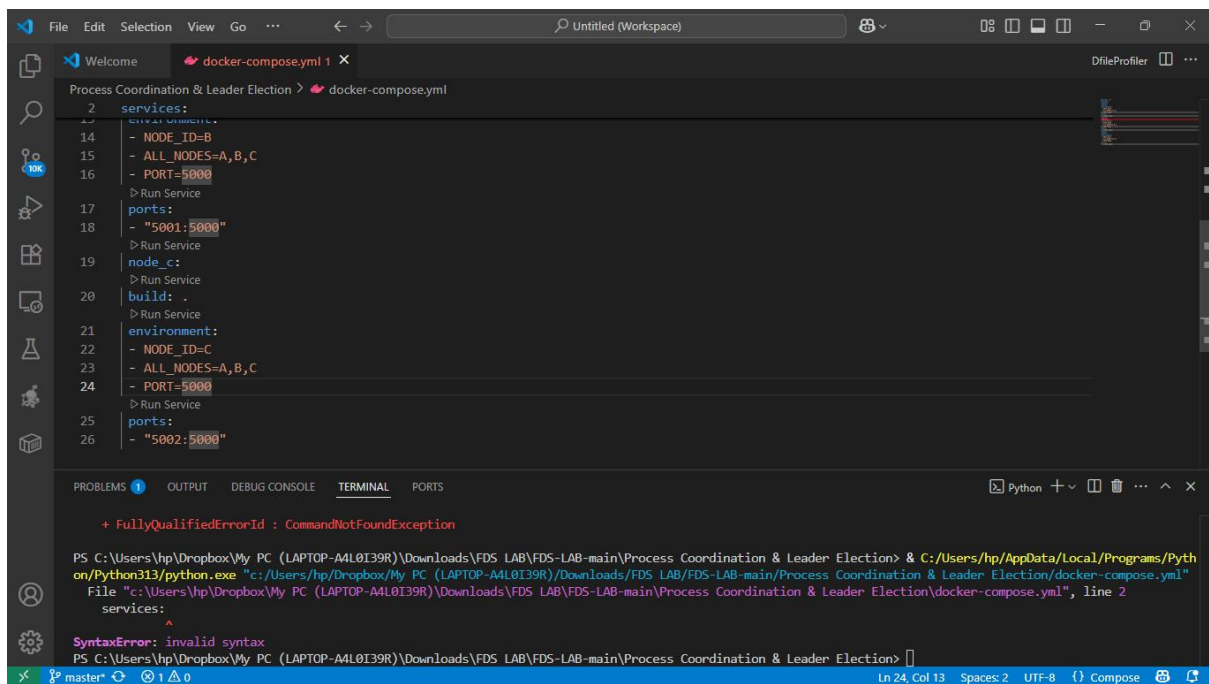
PS C:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe "c:/Users/hp/Dropbox/My PC (LAPTOP-A4L0I39R)/Downloads/FDS LAB/FDS-LAB-main/Process Coordination & Leader Election/docker-compose.yml"

File "c:/Users/hp/Dropbox/My PC (LAPTOP-A4L0I39R)/Downloads/FDS LAB\FDS-LAB-main\Process Coordination & Leader Election\docker-compose.yml", line 2

services:

SyntaxError: invalid syntax

PS C:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election>



```
14   - NODE_ID=B
15   - ALL_NODES=A,B,C
16   - PORT=5000
17   ports:
18     - "5001:5000"
19   node_c:
20     build: .
21     environment:
22       - NODE_ID=C
23       - ALL_NODES=A,B,C
24     ports:
25       - "5002:5000"
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

+ FullyQualifiedErrorId : CommandNotFoundException

PS C:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe "c:/Users/hp/Dropbox/My PC (LAPTOP-A4L0I39R)/Downloads/FDS LAB\FDS-LAB-main\Process Coordination & Leader Election/docker-compose.yml"

File "c:/Users/hp/Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election\docker-compose.yml", line 2

services:

SyntaxError: invalid syntax

PS C:\Users\hp\Dropbox\My PC (LAPTOP-A4L0I39R)\Downloads\FDS LAB\FDS-LAB-main\Process Coordination & Leader Election>

Ln 24, Col 13 Spaces: 2 UTF-8 {} Compose

