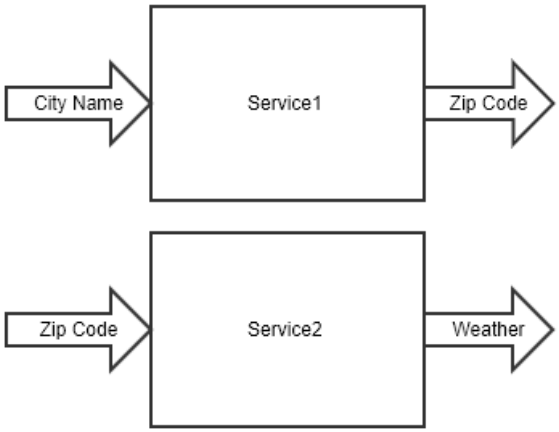
Problem:

Write a web application to find the *weather* of a given city.

1. Design the service using two microservices:

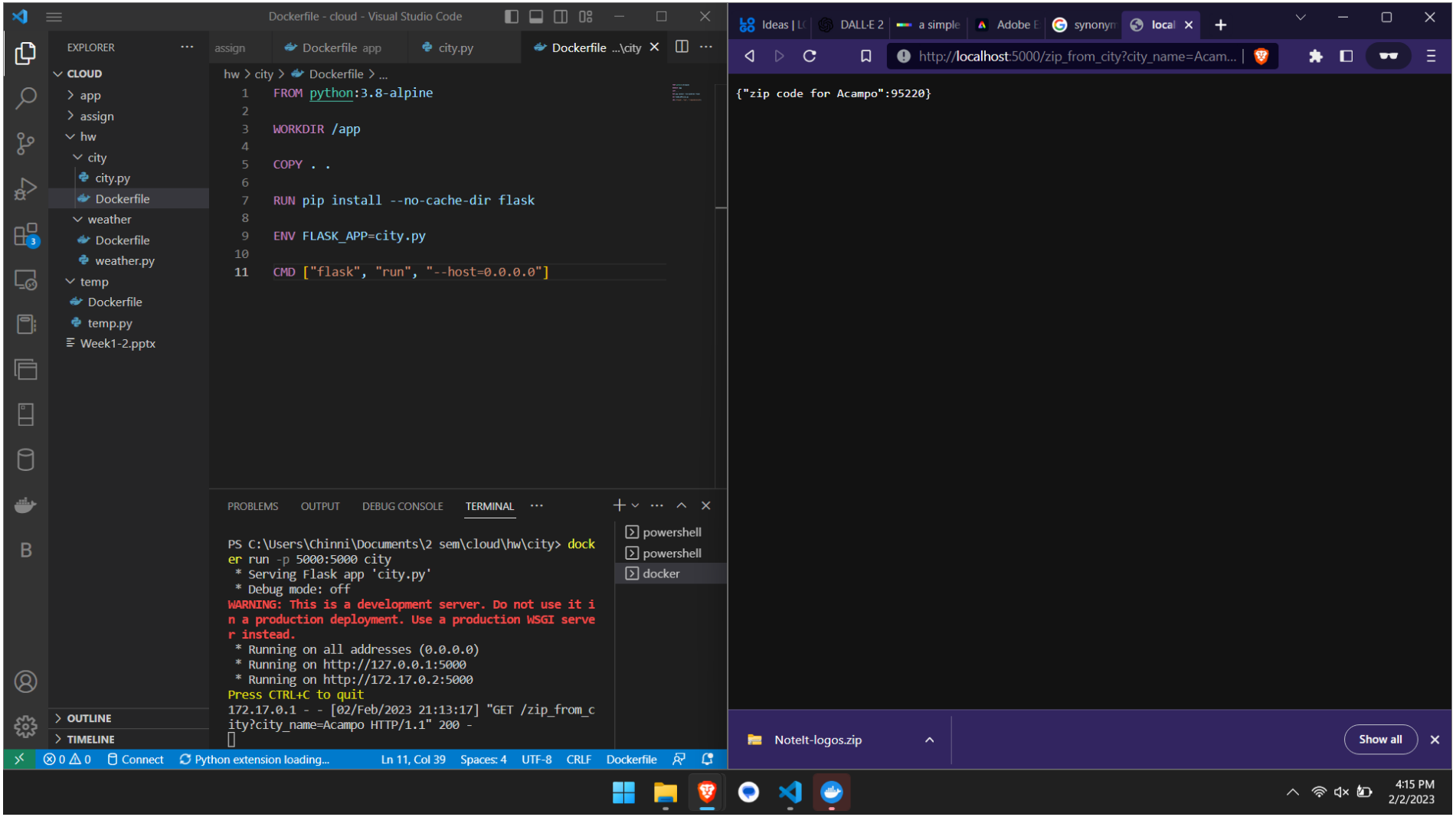


2. Implementation: Write two server programs in python and test them using either a browser client or a curl client.
3. Containerization: Create Dockerfiles and run two containers independently.

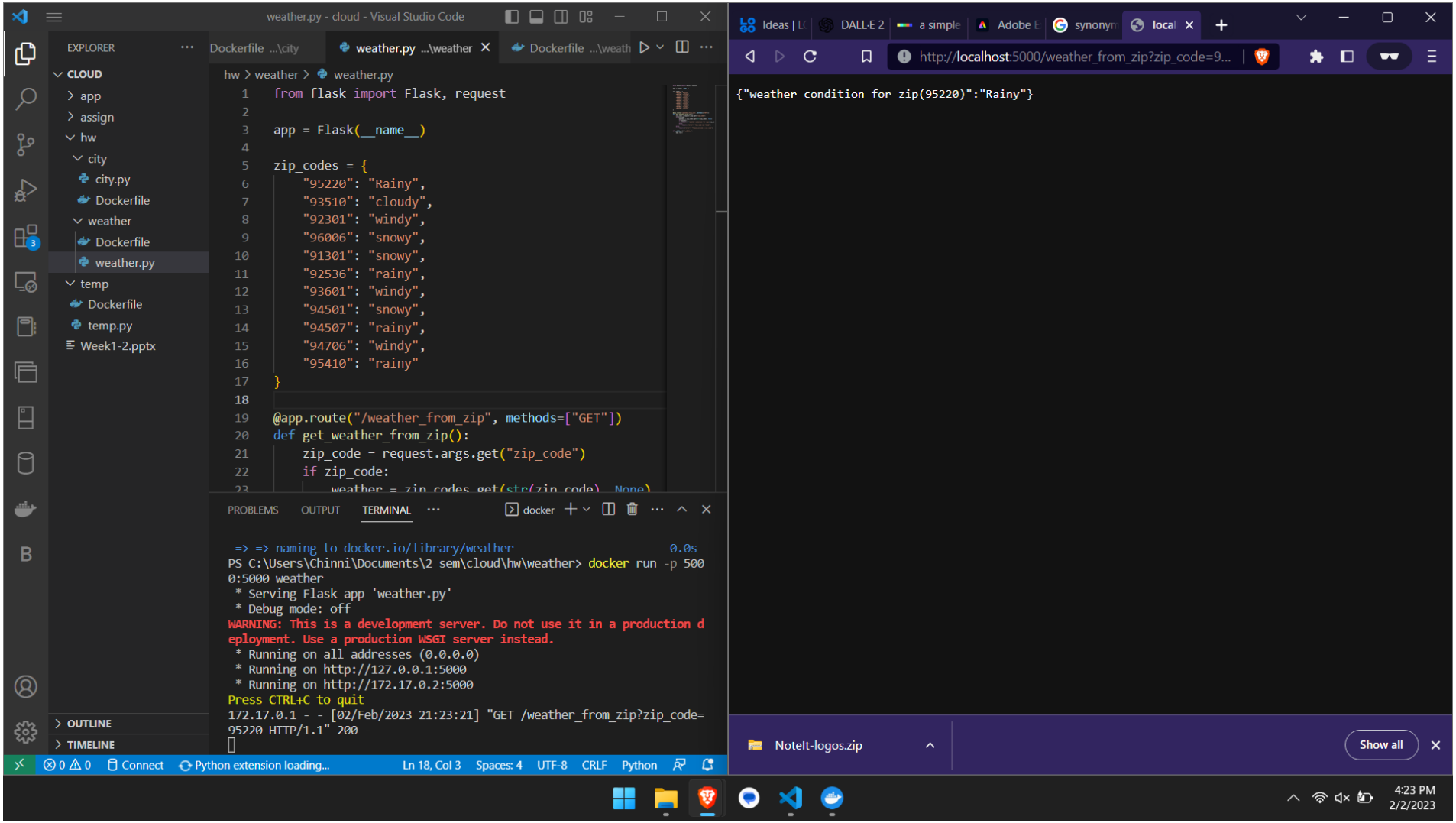
Solution:

- First I created python programs and Dockerfile(s) for two services
- Used the command in the terminal to create an image that runs with help of the docker desktop. That is `docker build -t weather .` Here the weather is the name of the image I gave
- Then to run the image and containerize it, we use the command `docker run -p 5000:5000 weather` where 5000 is the port
- Now I tested these services as shown below in screenshots.

1st service which gave Zip code from City Name



2nd service takes the zip code and gives the weather details:



4. Networking: Make two containers talk to each other

Solution:

At starting I deleted all the previous images and containers.

Created image and container for the second service on a network named “mynet”:

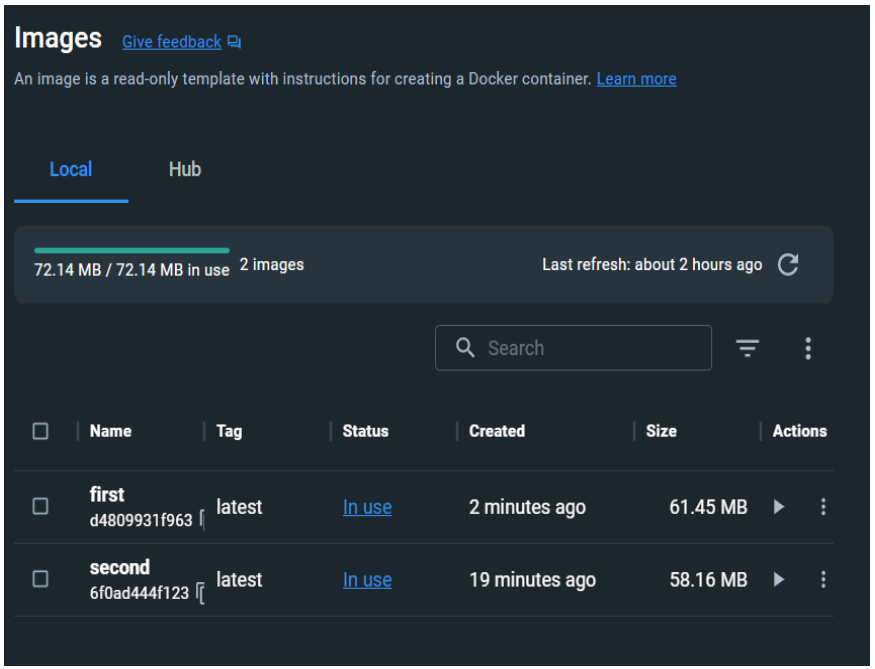
```
PS C:\Users\Chinni\Documents\2 sem\cloud\assignment-1\city> docker build -t first .
[+] Building 4.9s (11/11) FINISHED
```

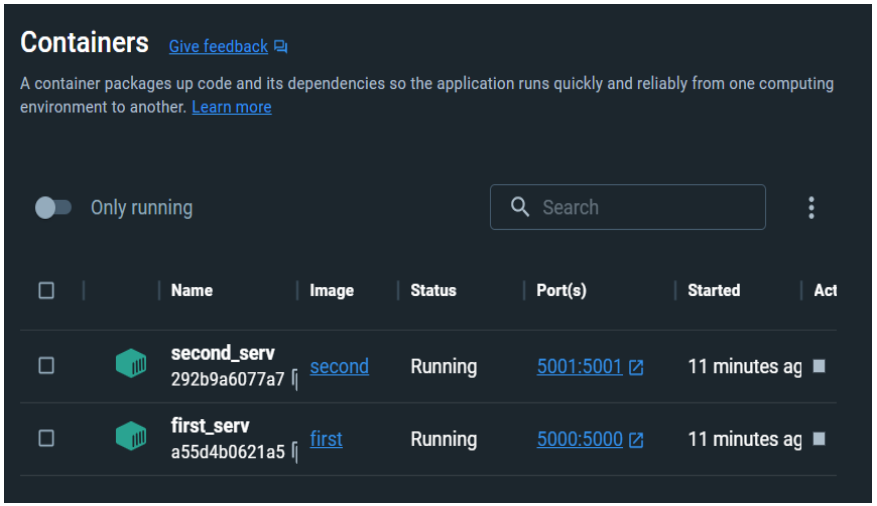
```
PS C:\Users\Chinni\Documents\2 sem\cloud\assignment-1\weather> docker network create mynet
b75caf96f35e44449152ff3aed23faaee5c2384f1f7b2bd8254eb54da247f578
PS C:\Users\Chinni\Documents\2 sem\cloud\assignment-1\weather> docker run --network mynet -p 5001:5001 --name second_serv second
 * Serving Flask app 'weather.py'
 * Debug mode: off
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://127.0.0.1:5001
 * Running on http://172.28.0.2:5001
Press CTRL+C to quit
172.28.0.3 - - [09/Feb/2023 21:04:57] "GET /weather/95220 HTTP/1.1" 200 -
```

Created image and container for the first service on a network named “mynet”:

```
PS C:\Users\Chinni\Documents\2 sem\cloud\assignment-1\city> docker build -t first .
[+] Building 4.9s (11/11) FINISHED
```

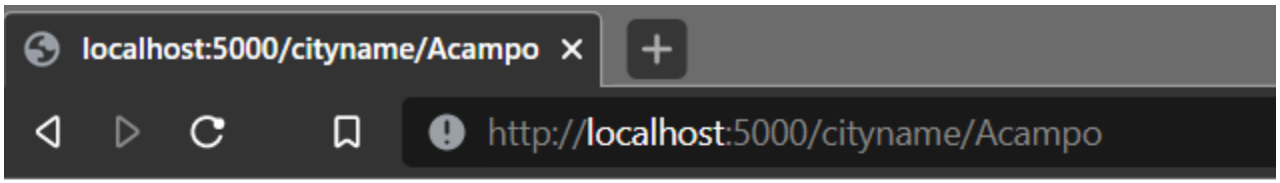
```
PS C:\Users\Chinni\Documents\2 sem\cloud\assignment-1\city> docker run --network mynet -p 5000:5000 --name first_serv first
 * Serving Flask app 'city.py'
 * Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
 * Running on all addresses (0.0.0.0)
 * Running on http://127.0.0.1:5000
 * Running on http://172.28.0.3:5000
Press CTRL+C to quit
172.28.0.1 - - [09/Feb/2023 21:04:57] "GET /cityname/Acampo HTTP/1.1" 200 -
```


Images
Give feedback
An image is a read-only template with instructions for creating a Docker container. Learn more
Local
Hub
72.14 MB / 72.14 MB in use
2 images
Last refresh: about 2 hours ago
Search
Name
Tag
Status
Created
Size
Actions
first
d4809931f963
latest
In use
2 minutes ago
61.45 MB
second
6f0ad444f123
latest
In use
19 minutes ago
58.16 MB


Containers
Give feedback
A container packages up code and its dependencies so the application runs quickly and reliably from one computing environment to another. Learn more
Only running
Search
Name
Image
Status
Port(s)
Started
Act
second_serv
292b9a6077a7
second
Running
5001:5001
11 minutes ag
first_serv
a55d4b0621a5
first
Running
5000:5000
11 minutes ag

This is my localhost to test two services:
It takes city name converts it to zip code and send to second service and receive the weather and prints it.

http://localhost:5000/cityname/Acampo



The weather in Acampo with zip: 95220 is Rainy