Screenshot of output

1. Browser output:
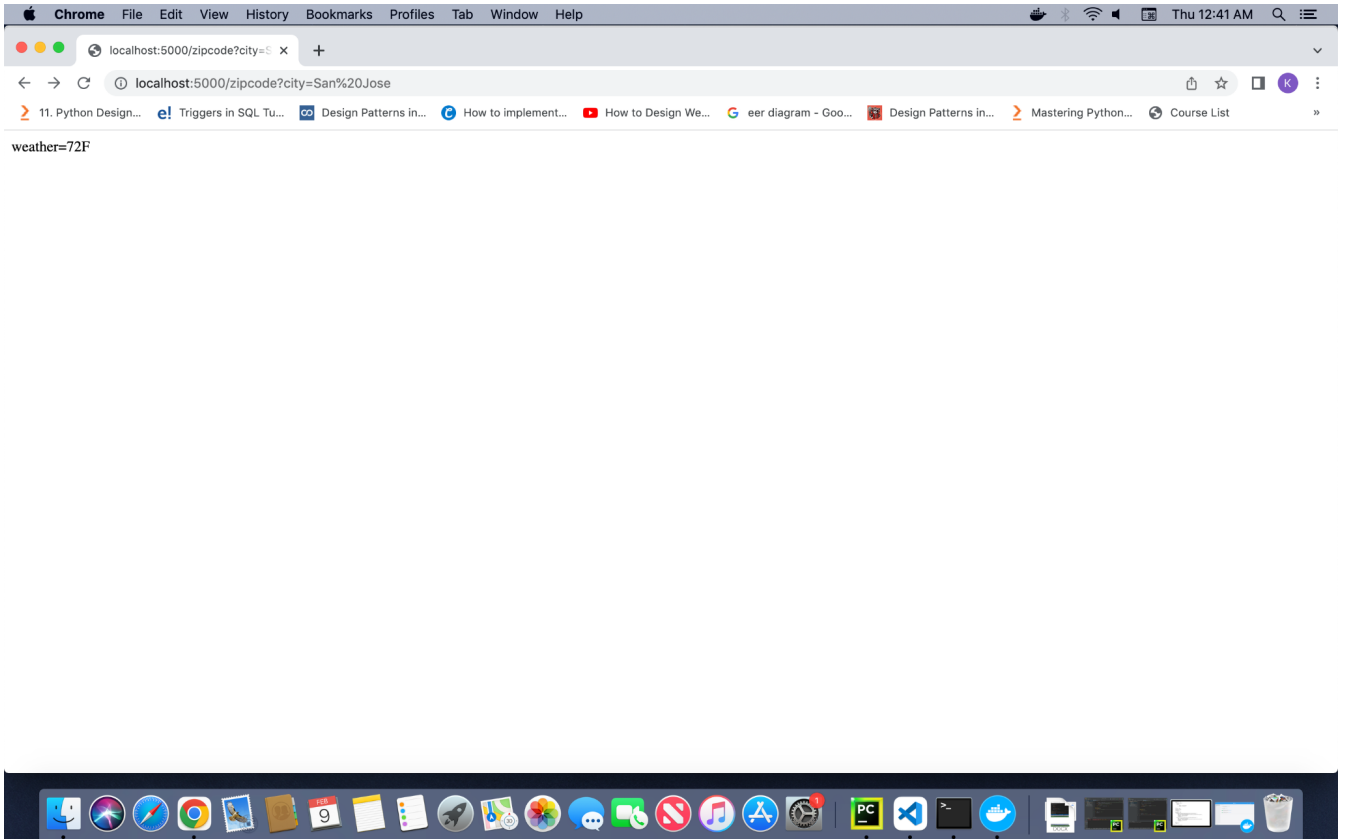
2. Screenshot of docker image and container of zipcode service

3. Screenshot of docker image and container of weather service

w   Help   Thu 12:44 AM   Q   ≣

weather — com.docker.cli ‹ docker run --name weather-service-container -p 5001:5001 weather-service — 159×32

...er --publish 5000:5000 zipcode-service   ...-container -p 5001:5001 weather-service   ...ruti/cloud computing/weather — -bash   ...ruti/cloud computing/weather — -bash

macs-MacBook-Pro:weather mac$ docker build --tag weather-service .
[+] Building 1.8s (11/11) FINISHED
 => [internal] load build definition from Dockerfile   0.0s
 => => transferring dockerfile: 2.07kB   0.0s
 => [internal] load .dockerignore   0.0s
 => => transferring context: 2B   0.0s
 => [internal] load metadata for docker.io/library/python:3.8-alpine   1.1s
 => [auth] library/python:pull token for registry-1.docker.io   0.0s
 => [1/5] FROM docker.io/library/python:3.8-alpine@sha256:6474f4b68e968cfa067e29f69c78c72d186d97183041160e47b8afca 0.0s
 => [internal] load build context   0.2s
 => => transferring context: 159.99kB   0.1s
 => CACHED [2/5] WORKDIR /src   0.0s
 => CACHED [3/5] COPY requirements.txt requirements.txt   0.0s
 => CACHED [4/5] RUN pip install --no-cache-dir -r requirements.txt   0.0s
 => [5/5] COPY . .   0.2s
 => exporting to image   0.3s
 => => exporting layers   0.2s
 => => writing image sha256:8da1fc5de4402e36224197f328061b3eb17fb03809b00566fbdd709f5f232060   0.0s
 => => naming to docker.io/library/weather-service   0.0s
macs-MacBook-Pro:weather mac$ docker run --name weather-service-container -p 5001:5001 weather-service
 * Serving Flask app 'main.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://172.17.0.2:5001
Press CTRL+C to quit
172.17.0.1 - - [09/Feb/2023 08:29:56] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [09/Feb/2023 08:29:56] "GET /favicon.ico HTTP/1.1" 404 -
172.18.0.2 - - [09/Feb/2023 08:30:32] "GET /weather?zipcode=95112 HTTP/1.1" 200 -
172.18.0.2 - - [09/Feb/2023 08:39:43] "GET /weather?zipcode=95112 HTTP/1.1" 200 -

4. Creating network of zip code and weather + commands

a. Create a network of the service whom you want to talk to using following command and inspect the network.

ow   Help   Thu 12:47 AM   Q   ≣

weather — -bash — 159×53

...er --publish 5000:5000 zipcode-service   ...-container -p 5001:5001 weather-service   ...ruti/cloud computing/weather — -bash   ...ruti/cloud computing/weather — -bash

Last login: Wed Feb 8 23:36:58 on ttys000
macs-MacBook-Pro:weather mac$ docker network create zipcode-weather-network
a7be808f4f34eb9be120a0da6d0daf4ddad2cb6a5f1a884900117f641d962f34
macs-MacBook-Pro:weather mac$ docker network inspect zipcode-weather-network
[

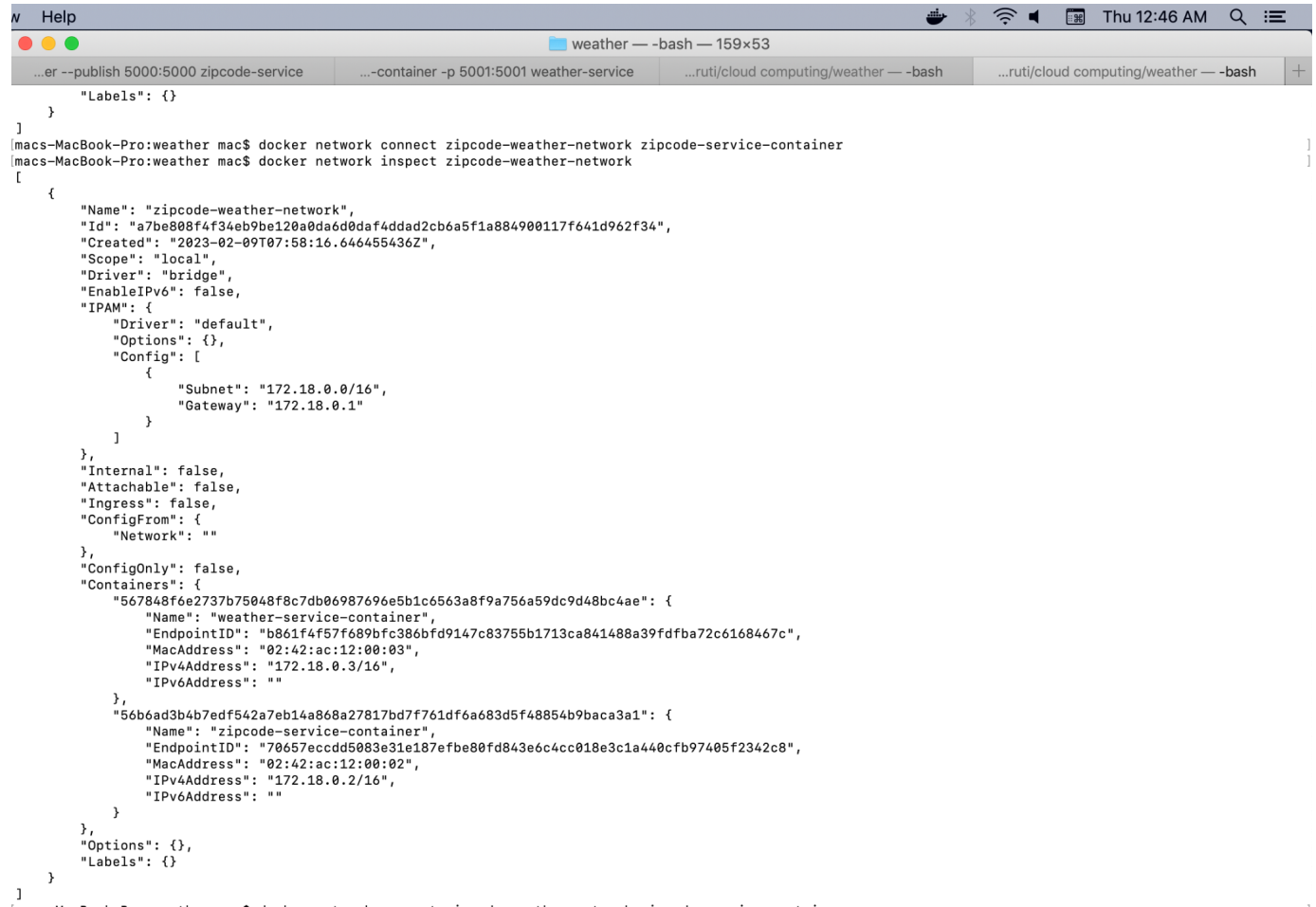### b. Initially network does not contain any containers

weather — -bash — 149×41

...--publish 5000:5000 zipcode-service   ...ntainer -p 5001:5001 weather-service   ...i/cloud computing/wea

Last login: Wed Feb 8 23:36:58 on ttys000
macs-MacBook-Pro:weather mac$ docker network create zipcode-weather-network
a7be808f4f34eb9be120a0da6d0daf4ddad2cb6a5f1a884900117f641d962f34
macs-MacBook-Pro:weather mac$ docker network inspect zipcode-weather-network
[
    {
        "Name": "zipcode-weather-network",
        "Id": "a7be808f4f34eb9be120a0da6d0daf4ddad2cb6a5f1a884900117f641d962f34",
        "Created": "2023-02-09T07:58:16.646455436Z",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": {},
            "Config": [
                {
                    "Subnet": "172.18.0.0/16",
                    "Gateway": "172.18.0.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": {},
        "Options": {},
        "Labels": {}
    }
]

c. Add containers to the network using following commands

```
macs-MacBook-Pro:weather mac$ docker network connect zipcode-weather-network zipcode-service-container
macs-MacBook-Pro:weather mac$ docker network connect zipcode-weather-network weather-service-container
macs-MacBook-Pro:weather mac$ docker network inspect zipcode-weather-network
[
    {
```

d. Screenshot of successfully added networks

```
                "Labels": {}
        }
]
macs-MacBook-Pro:weather mac$ docker network connect zipcode-weather-network zipcode-service-container
macs-MacBook-Pro:weather mac$ docker network inspect zipcode-weather-network
[
    {
        "Name": "zipcode-weather-network",
        "Id": "a7be808f4f34eb9be120a0da6d0daf4ddad2cb6a5f1a884900117f641d962f34",
        "Created": "2023-02-09T07:58:16.646455436Z",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": {},
            "Config": [
                {
                    "Subnet": "172.18.0.0/16",
                    "Gateway": "172.18.0.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": {
            "567848f6e2737b75048f8c7db06987696e5b1c6563a8f9a756a59dc9d48bc4ae": {
                "Name": "weather-service-container",
                "EndpointID": "b861f4f57f689bfc386bfd9147c83755b1713ca841488a39fdfba72c6168467c",
                "MacAddress": "02:42:ac:12:00:03",
                "IPv4Address": "172.18.0.3/16",
                "IPv6Address": ""
            },
            "56b6ad3b4b7edf542a7eb14a868a27817bd7f761df6a683d5f48854b9baca3a1": {
                "Name": "zipcode-service-container",
                "EndpointID": "70657eccdd5083e31e187efbe80fd843e6c4cc018e3c1a440cfb97405f2342c8",
                "MacAddress": "02:42:ac:12:00:02",
                "IPv4Address": "172.18.0.2/16",
                "IPv6Address": ""
            }
        },
        "Options": {},
        "Labels": {}
    }
]
```

To check the running docker container the following commands + proof of screenshot

```
weather — -bash — 145×41
...-publish 5000:5000 zipcode-service    ...tainer -p 5001:5001 weather-service    ...cloud computing/weather — -bash    ...cloud computing/weather — -bash

Last login: Thu Feb  9 00:23:09 on ttys004
[macs-MacBook-Pro:weather mac$ docker container ls
CONTAINER ID   IMAGE             COMMAND              CREATED         STATUS         PORTS                    NAMES
e8a38a533a4a   weather-service   "flask run --host=0.…"  3 minutes ago   Up 3 minutes   0.0.0.0:5001->5001/tcp   weather-service-container
e74d661da27c   zipcode-service   "flask run --host=0.…"  23 minutes ago  Up 23 minutes  0.0.0.0:5000->5000/tcp   zipcode-service-container
[macs-MacBook-Pro:weather mac$ docker container ls
CONTAINER ID   IMAGE             COMMAND              CREATED         STATUS         PORTS                    NAMES
56b6ad3b4b7e   zipcode-service   "flask run --host=0.…"  6 minutes ago   Up 6 minutes   0.0.0.0:5000->5000/tcp   zipcode-service-container
567848f6e273   weather-service   "flask run --host=0.…"  14 minutes ago  Up 14 minutes  0.0.0.0:5001->5001/tcp   weather-service-container
macs-MacBook-Pro:weather mac$
macs-MacBook-Pro:weather mac$ docker images
REPOSITORY        TAG       IMAGE ID        CREATED           SIZE
zipcode-service   latest    6e9606fe3ab3    22 minutes ago    84.2MB
weather-service   latest    8da1fc5de440    30 minutes ago    77.4MB
<none>            <none>    6882bad30d05    42 minutes ago    77.4MB
[<none>           <none>    4ae676ae3480    58 minutes ago    84.2MB
[<none>           <none>    701161573c01    About an hour ago 77.4MB
<none>            <none>    95e393e9efe9    About an hour ago 84.2MB
weather-docker    latest    dbeac3848d6c    6 days ago        78.1MB
hello-world       latest    feb5d9fea6a5    16 months ago     13.3kB
macs-MacBook-Pro:weather mac$ docker ps
CONTAINER ID   IMAGE             COMMAND              CREATED         STATUS         PORTS                    NAMES
56b6ad3b4b7e   zipcode-service   "flask run --host=0.…"  22 minutes ago  Up 22 minutes  0.0.0.0:5000->5000/tcp   zipcode-service-container
567848f6e273   weather-service   "flask run --host=0.…"  30 minutes ago  Up 30 minutes  0.0.0.0:5001->5001/tcp   weather-service-container
macs-MacBook-Pro:weather mac$
```