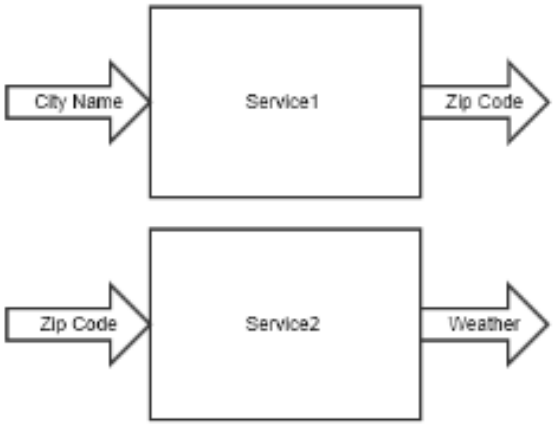
Student Name: Mahmud Omer ID: 19660

Cloud Computing Infrastructure _hw1

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

1. Design the service using two microservices:



2. Implement these two independent microservices and then test them using either browser client or curl client.

3. Make these two microservices work together (Optional).

Note:

1. Please submit your answer in the form of GitHub link.

Upload your implementation codes into your GitHub.

2. You'd better add a readme file to describe your implementation in your GitHub repo. The readme file may contain:

I. Few key Instructions/commands/steps to describe the whole process (People could understand/reproduce your process easily).

II. Few screenshots about your process result with timestamp (As proof to show that you have finished the assignment).

Solution:

Code: zip code

```
from flask import Flask, request

app = Flask(__name__)

def process_input(input_value):
    if input_value == 'fremont':
        return '94538'
    elif input_value == 'sanjose':
        return '98765'
    else:
        return 'Invalid city name. Please try again.'

@app.route('/zipcode', methods=['GET'])
def get_response():
    input_value = request.args.get('city')
    response = process_input(input_value)
    return response

# Example usage
if __name__ == '__main__':
    app.run(debug=True, port=5001)
```

Weather data

```
from flask import Flask, request
```

```
app = Flask(__name__)

def process_input(input_value):
    if input_value == '94538':
        return 'cold'
    elif input_value == '98765':
        return 'warmer'
    else:
        return 'Invalid zipcode. Please try
again.'

@app.route('/weather', methods=['GET'])
def get_response():
    input_value = request.args.get('zipcode')
    response = process_input(input_value)
    return response

# Example usage
if __name__ == '__main__':
    app.run(debug=True, port=5002)
```

Service 1

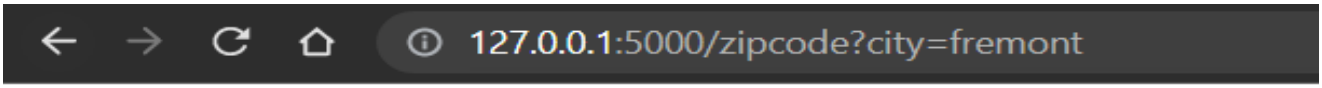
```
# Use an official Python runtime as the base image
FROM python:3.8-slim-buster
```

```
# Set the working directory in the container
WORKDIR /app

# Copy the required files to the container
COPY zipcode.py .

# Install the required packages
RUN pip install Flask

# Expose the default Flask port (5000)
EXPOSE 5001

# Define the command to run the application
CMD ["python", "zipcode.py"]
```

Service 2

```
# Use an official Python runtime as the base image
FROM python:3.8-slim-buster

# Set the working directory in the container
WORKDIR /app

# Copy the required files to the container
COPY weather.py .

# Install the required packages
```

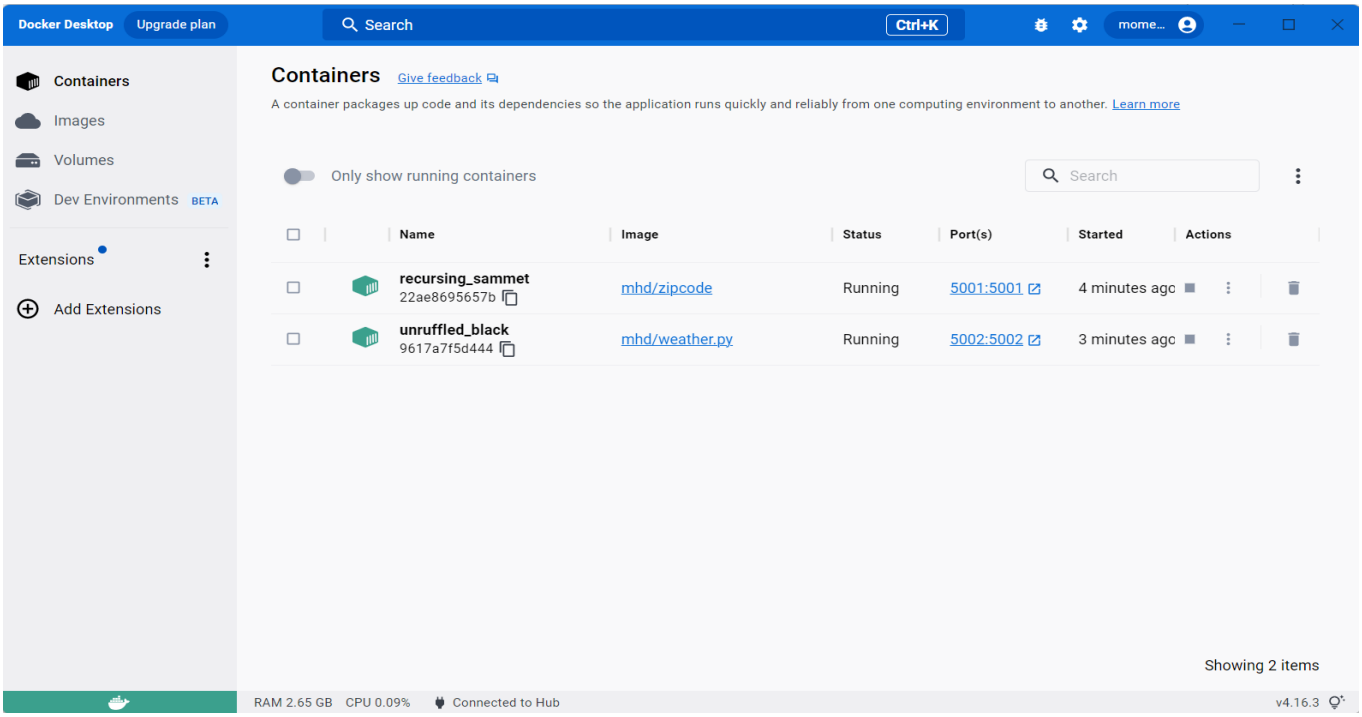
```
RUN pip install Flask

# Expose the default Flask port (5000)
EXPOSE 5002

# Define the command to run the application
CMD ["python", "weather.py"]
```

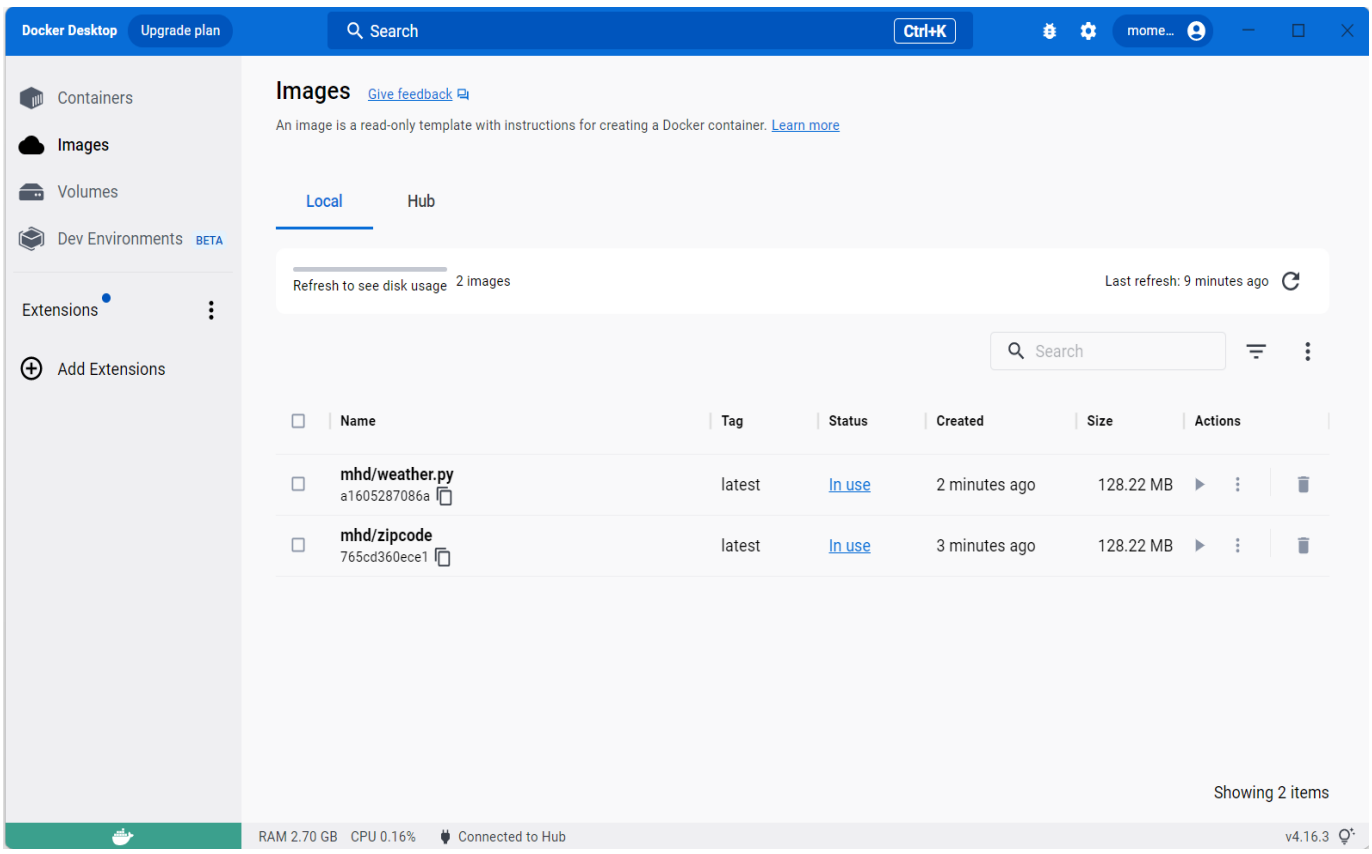


94538

cold

```
PS C:\Users\mahmu\Desktop\SFBU\03 Spring 2023\Cloud Computing\Quizzes and
 Assignments\HW2\service2> docker images
REPOSITORY        TAG       IMAGE ID       CREATED              SIZE
mhd/weather.py    latest    a1605287086a   5 seconds ago        128MB
mhd/zipcode       latest    765cd360ece1   About a minute ago   128MB
PS C:\Users\mahmu\Desktop\SFBU\03 Spring 2023\Cloud Computing\Quizzes and
 Assignments\HW2\service2> docker run -p 5001:5001 mhd/zipcode
 * Serving Flask app 'zipcode'
 * Debug mode: on
```


Docker Desktop
Upgrade plan
Search
Ctrl+K
mome...
Containers
Images
Volumes
Dev Environments
BETA
Extensions
Add Extensions
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 show running containers
Search
Name
Image
Status
Port(s)
Started
Actions
recursing_sammet
22ae8695657b
mhd/zipcode
Running
5001:5001
4 minutes ago
unruffled_black
9617a7f5d444
mhd/weather.py
Running
5002:5002
3 minutes ago
Showing 2 items
RAM 2.65 GB
CPU 0.09%
Connected to Hub
v4.16.3


Docker Desktop
Upgrade plan
Search
Ctrl+K
mome...
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Images
Give feedback
An image is a read-only template with instructions for creating a Docker container. Learn more
Local
Hub
Refresh to see disk usage
2 images
Last refresh: 9 minutes ago
Search
Name
Tag
Status
Created
Size
Actions
mhd/weather.py
a1605287086a
latest
In use
2 minutes ago
128.22 MB
mhd/zipcode
765cd360ece1
latest
In use
3 minutes ago
128.22 MB
Showing 2 items
RAM 2.70 GB
CPU 0.16%
Connected to Hub
v4.16.3