CZĘŚĆ OBOWIĄZKOWA

1. (max. 30%)

Najpierw stworzyłam konto na stronie [Current weather and forecast - OpenWeatherMap]

Potem stworzyłam plik app.py i index.html

Po uruchomieniu aplikacji w konsoli wyświetlają się data, imię oraz port (5000), a także tworzy się strona internetowa, na której można wybrać miasto z listy i zobaczyć pogodę.

Plik: app.py:

```
from flask import Flask, request, render_template
import logging
import datetime
import requests
import os

#Konfiguracja logowania
logging.basicConfig(level=logging.INFO)
logger = logging.getLogger(__name__)

#Inicjalizacja aplikacji Flask
app = Flask(__name__)

AUTHOR = "Yelyzaveta Zlydnieva"
PORT = os.getenv("PORT", 5000)

COUNTRIES_CITIES = {
   "Poland": ["Warszawa", "Krakow", "Gdansk", "Wroclaw",
"Poznan"],
   "Germany": ["Berlin", "Munich", "Hamburg", "Cologne",
"Frankfurt"],
   "France": ["Paris", "Lyon", "Marseille", "Toulouse", "Nice"],
   "Italy": ["Rome", "Milan", "Naples", "Turin", "Florence"]
}

#Logowanie informacji przy starcie aplikacji
startup_time = datetime.datetime.now().strftime("%Y-%m-%d
%H:%M:%S")
logger.info(f"Data uruchomienia: {startup_time}")
logger.info(f"Autor: {AUTHOR}")
logger.info(f"Port TCP: {PORT}")

#Strona główna aplikacji
@app.route("/", methods=["GET", "POST"])
def index():
   weather_data = None
   selected_country = None
   cities = []

   #Jeśli użytkownik wysłał formularz
   if request.method == "POST":
```

```
        selected_country = request.form.get("country")
        city = request.form.get("city")

        #Zaktualizujemy listę miast na podstawie wybranego kraju
        if selected_country in COUNTRIES_CITIES:
            cities = COUNTRIES_CITIES[selected_country]

            #Pobieramy dane pogodowe, jeśli miasto zostało wybrane
            if city and city in cities:
                api_key = "e3752818441fd5ae6c1fb0940dbe8f5d"
                url =
f"http://api.openweathermap.org/data/2.5/weather?q={city},{selecte
d_country}&appid={api_key}&units=metric"
                response = requests.get(url)
                if response.status_code == 200:
                    data = response.json()
                    weather_data = {
                        "city": city,
                        "country": selected_country,
                        "temperature": data["main"]["temp"],
                        "description":
data["weather"][0]["description"],
                        "humidity": data["main"]["humidity"]
                    }

    #Jeśli żaden kraj nie jest wybrany, ustawimy pierwszy z listy
    if not selected_country:
        selected_country = list(COUNTRIES_CITIES.keys())[0]
        cities = COUNTRIES_CITIES[selected_country]


    return render_template("index.html",
countries=COUNTRIES_CITIES.keys(), cities=cities,
selected_country=selected_country, weather_data=weather_data)


if __name__ == "__main__":
    app.run(host="0.0.0.0", port=int(PORT))
```

Plik index.html:

```
<!DOCTYPE html>
<html>
<head>
    <title>Pogoda</title>
</head>
<body>
    <!-- Nagłówek strony -->
```

```
    <h1>Sprawdź pogodę</h1>

    <!-- Formularz do wyboru kraju i miasta -->
    <form method="POST">
              <label for="country">Wybierz kraj:</label>
        <select name="country" id="country"
onchange="this.form.submit()">
            {% for country in countries %}
                <option value="{{ country }}" {% if country ==
selected_country %}selected{% endif %}>{{ country }}</option>
            {% endfor %}
        </select>

        <!-- Wybór miasta -->
        <label for="city">Wybierz miasto:</label>
        <select name="city" id="city">
            {% for city in cities %}
                <option value="{{ city }}">{{ city }}</option>
            {% endfor %}
        </select>

        <!-- Przycisk do zatwierdzenia wyboru -->
        <button type="submit">Sprawdź</button>
    </form>

    <!-- Wyświetlenie pogody, jeśli dane są dostępne -->
    {% if weather_data %}
        <h2>Pogoda w {{ weather_data.city }}, {{
weather_data.country }}</h2>
        <p>Temperatura: {{ weather_data.temperature }}°C</p>
        <p>Opis: {{ weather_data.description }}</p>
        <p>Wilgotność: {{ weather_data.humidity }}%</p>
    {% endif %}
</body>
</html>
```

```
PS C:\Users\Who\OneDrive\Рабочий стол\weather_app> docker logs
weather-container
>>
INFO:__main__:Data uruchomienia: 2025-04-26 10:28:57
INFO:__main__:Autor: Yelyzaveta Zlydnieva
INFO:__main__:Port TCP: 5000
```

2. (max. 50%)

Stworzymy plik Dockerfile

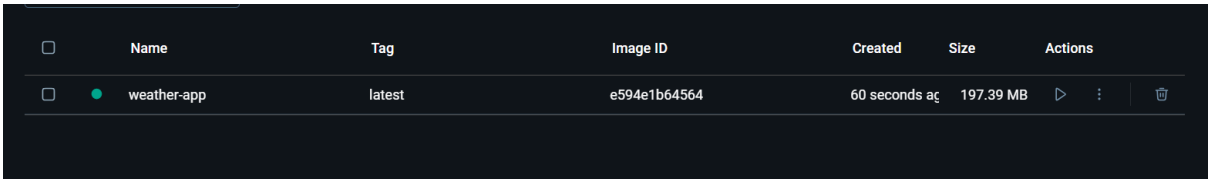
```
# Budowanie środowiska
FROM python:3.12-slim as builder
WORKDIR /app
COPY requirements.txt .

# Instalujemy zależności do katalogu lokalnego
RUN pip install --no-cache-dir --prefix=/install -r
requirements.txt

# Tworzenie finalnego obrazu
FROM python:3.12-slim


LABEL maintainer="Yelyzaveta Zlydnieva"

WORKDIR /app

COPY app.py .
COPY templates/ templates/

# Kopiujemy zainstalowane biblioteki z etapu buildera
COPY --from=builder /install /usr/local
ENV PORT=5000
EXPOSE 5000

# Healthcheck, czy aplikacja działa
HEALTHCHECK --interval=30s --timeout=5s --start-period=5s
--retries=3 \
CMD curl --fail http://localhost:5000 || exit 1

# Startujemy aplikację
CMD ["python", "app.py"]
```

3. (max. 20%)

Piszemy polecenie do utworzenia obrazu:

PS C:\Users\Who\OneDrive\Рабочий стол\weather_app> docker build -t weather-app .

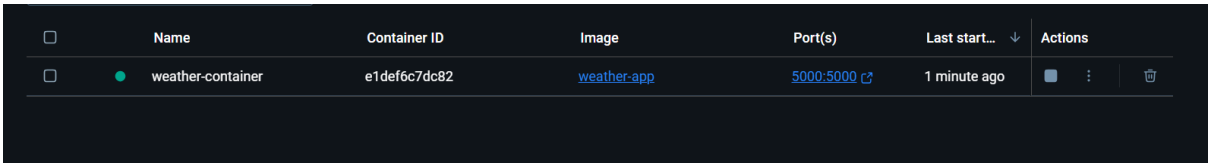
```
PS C:\Users\Who\OneDrive\Рабочий стол\weather_app> docker build -t weather-app .
>>
[+] Building 6.9s (13/13) FINISHED                          docker:desktop-linux
 => [internal] load build definition from Dockerfile                        0.0s
 => => transferring dockerfile: 950B                                        0.0s
 => WARN: FromAsCasing: 'as' and 'FROM' keywords' casing do not match (     0.0s
 => [internal] load metadata for docker.io/library/python:3.12-slim         1.1s
 => [auth] library/python:pull token for registry-1.docker.io               0.0s
 => [internal] load .dockerignore                                           0.0s
 => => transferring context: 2B                                             0.0s
 => [builder 1/4] FROM docker.io/library/python:3.12-slim@sha256:858243     0.0s
 => => resolve docker.io/library/python:3.12-slim@sha256:85824326bc4ae2     0.0s
 => [internal] load build context                                           0.0s
 => => transferring context: 132B                                           0.0s
 => [builder 3/4] COPY requirements.txt .                                   0.0s
 => [stage-1 3/5] COPY app.py .                                             0.0s
 => [builder 4/4] RUN pip install --no-cache-dir --prefix=/install -r r     4.8s
 => [stage-1 4/5] COPY templates/ templates/                                0.0s
 => [stage-1 5/5] COPY --from=builder /install /usr/local                   0.1s
 => exporting to image                                                      0.5s
 => => exporting layers                                                     0.3s
 => => exporting manifest sha256:df259f8a0b7e541566648ec93556862492849e     0.0s
 => => exporting config sha256:56860112e1ac3c2f18086e982bf4d709256a55e9     0.0s
 => => exporting attestation manifest sha256:45d3121de6cfc35f5f4e50baef     0.0s
 => => exporting manifest list sha256:e594e1b64564706945458f98e48bfa6fb     0.0s
```



Polecenie do Uruchomienia kontenera:

PS C:\Users\Who\OneDrive\Рабочий стол\weather_app> docker run -d -p 5000:5000 --name weather-container weather-app

```
PS C:\Users\Who\OneDrive\Рабочий стол\weather_app> docker run -d -p 5000:5000 --name weather-container weather-app
>> C:\Users\Who\OneDrive\Рабочий стол\weather_app>
e1def6c7dc82e7b32d4f2d75c7af018c5a76bde72fef6798bcc54116b9a0860a
PS C:\Users\Who\OneDrive\Рабочий стол\weather_app>
```



Sprawdzenie logów:

```
PS C:\Users\Who\OneDrive\Рабочий стол\weather_app> docker logs weather-container
>> C:\Users\Who\OneDrive\Рабочий стол\weather_app>
INFO:__main__:Data uruchomienia: 2025-04-26 10:51:29
INFO:__main__:Autor: Yelyzaveta Zlydnieva
INFO:__main__:Port TCP: 5000
 * Serving Flask app 'app'
 * Debug mode: off
INFO:werkzeug: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://172.17.0.2:5000
INFO:werkzeug:Press CTRL+C to quit
PS C:\Users\Who\OneDrive\Рабочий стол\weather_app>
```

Sprawdzamy liczby warstw i rozmiar:

```
PS C:\Users\Who\OneDrive\Рабочий стол\weather_app> docker history weather-app
>>
IMAGE          CREATED          CREATED BY                                      SIZE      COMMENT
e594e1b64564   2 minutes ago    CMD ["python" "app.py"]                         0B        buildkit.dockerfile.v0
<missing>      2 minutes ago    HEALTHCHECK &{["CMD-SHELL" "curl --fail http…   0B        buildkit.dockerfile.v0
<missing>      2 minutes ago    EXPOSE map[5000/tcp:{}]                         0B        buildkit.dockerfile.v0
<missing>      2 minutes ago    ENV PORT=5000                                   0B        buildkit.dockerfile.v0
<missing>      2 minutes ago    COPY /install /usr/local # buildkit             8.88MB    buildkit.dockerfile.v0
<missing>      2 minutes ago    COPY templates/ templates/ # buildkit           16.4kB    buildkit.dockerfile.v0
<missing>      2 minutes ago    COPY app.py . # buildkit                        12.3kB    buildkit.dockerfile.v0
<missing>      24 minutes ago   WORKDIR /app                                    8.19kB    buildkit.dockerfile.v0
<missing>      24 minutes ago   LABEL maintainer=Yelyzaveta Zlydnieva           0B        buildkit.dockerfile.v0
<missing>      2 weeks ago      CMD ["python3"]                                 0B        buildkit.dockerfile.v0
<missing>      2 weeks ago      RUN /bin/sh -c set -eux;  for src in idle3 p…   16.4kB    buildkit.dockerfile.v0
<missing>      2 weeks ago      RUN /bin/sh -c set -eux;  savedAptMark="$(a…    44.9MB    buildkit.dockerfile.v0
<missing>      2 weeks ago      ENV PYTHON_SHA256=07ab697474595e06f06647417d…   0B        buildkit.dockerfile.v0
<missing>      2 weeks ago      ENV PYTHON_VERSION=3.12.10                      0B        buildkit.dockerfile.v0
<missing>      2 weeks ago      ENV GPG_KEY=7169605F62C751356D054A26A821E680…   0B        buildkit.dockerfile.v0
<missing>      2 weeks ago      RUN /bin/sh -c set -eux;  apt-get update;  a…   10.3MB    buildkit.dockerfile.v0
<missing>      2 weeks ago      ENV LANG=C.UTF-8                                0B        buildkit.dockerfile.v0
<missing>      2 weeks ago      ENV PATH=/usr/local/bin:/usr/local/sbin:/usr…   0B        buildkit.dockerfile.v0
<missing>      2 weeks ago      # debian.sh --arch 'amd64' out/ 'bookworm' '…   85.3MB    debuerreotype 0.15
PS C:\Users\Who\OneDrive\Рабочий стол\weather_app>
```

Działanie aplikacji:

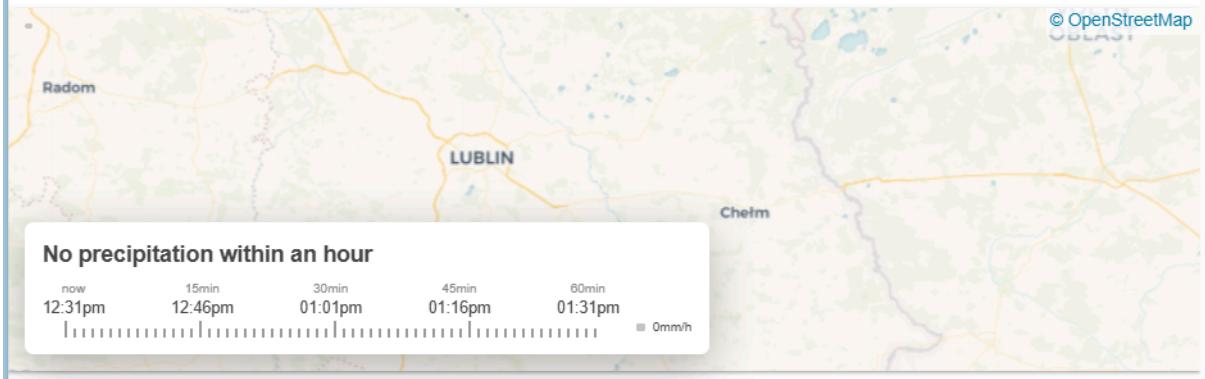
Apr 26, 12:31pm

Województwo Lubelskie, PL

Feels like 12°C. Overcast clouds. Moderate breeze

12°C

➤ 5.8m/s W ⊘ 1023hPa Humidity: 71%
UV: 6 Dew point: 7°C Visibility: 10.0km



Hourly forecast

12pm 1pm 2pm 3pm 4pm 5pm 6pm 7pm 8pm 9pm 10pm 11pm Apr 27 1am 2am