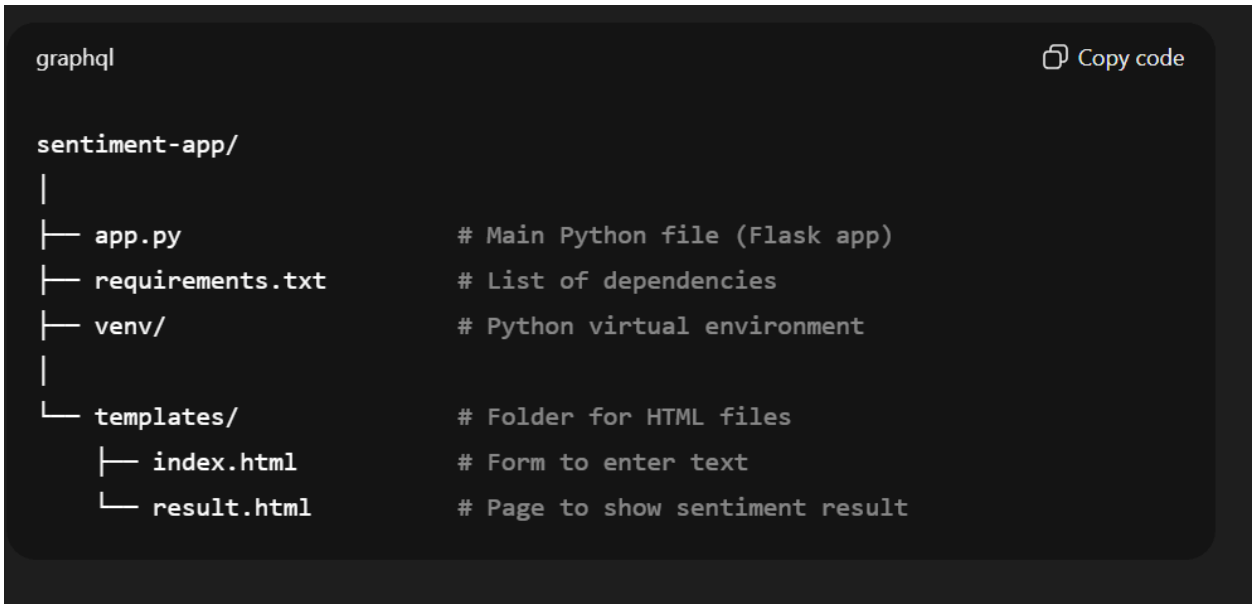
🌟 Build a Sentiment Analysis Web Tool (Simple Version)

🧰 What You'll Build:

A simple website where users type a sentence or paragraph and it tells them if their text is **Positive**, **Negative**, or **Neutral**.



📌 Tools You'll Use:

- **Python** – the programming language
- **Flask** – to create the web app
- **TextBlob** – to analyze the sentiment
- **HTML** – for the webpage
- **AWS EC2 (Free Tier)** – to put your website online

🖥️ Part 1: Build the Sentiment App on Your Computer

✅ Step 1: Install Python and Set Up

If you don't have Python installed:

- Go to https://python.org/downloads
- Download the version for your system (Windows/Mac/Linux)

Create a folder for your project:

```
mkdir sentiment-app
cd sentiment-app
```

Set up your virtual environment:

```
python -m venv venv
source venv/bin/activate  # Windows: venv\Scripts\activate
```

✅ Step 2: Install Required Libraries

Install Flask and TextBlob:

```
pip install flask textblob
python -m textblob.download_corpora
```

✅ Step 3: Create the Python File (`app.py`)

Create a file named `app.py`:

```python
from flask import Flask, render_template, request
from textblob import TextBlob

app = Flask(__name__)

@app.route('/')
def home():
    return render_template('index.html')

@app.route('/analyze', methods=['POST'])
def analyze():
    text = request.form['text']
    blob = TextBlob(text)
    polarity = blob.sentiment.polarity

    if polarity > 0:
        result = "Positive 😊"
    elif polarity < 0:
        result = "Negative 😡"
    else:
        result = "Neutral 😐"

    return render_template('result.html', text=text, result=result)

if __name__ == '__main__':
    app.run(debug=True)
```

✅ Step 4: Create the Frontend (HTML Pages)

Create a folder called `templates`, then create two files inside it:

`templates/index.html`:

```
<!DOCTYPE html>
<html>
<head>
  <title>Sentiment Analysis</title>
</head>
<body>
  <h1>Enter your text:</h1>
  <form action="/analyze" method="POST">
    <textarea name="text" rows="5" cols="40" placeholder="Type
something..."></textarea><br><br>
    <button type="submit">Analyze</button>
  </form>
</body>
</html>
```

`templates/result.html`:

```
<!DOCTYPE html>
<html>
<head>
  <title>Result</title>
</head>
<body>
  <h2>Your Text:</h2>
  <p>{{ text }}</p>

  <h2>Sentiment:</h2>
  <p>{{ result }}</p>

  <a href="/">Try Again</a>
</body>
</html>
```

✅ Step 5: Run the App

In your terminal, type:

python app.py

Go to `http://127.0.0.1:5000` in your web browser. 🎉 You just made your own sentiment analysis tool!

☁️ Part 2: Host Your App on AWS Free Tier (EC2)

✅ Step 6: Set Up AWS EC2

1. Sign up for AWS:

Go to https://aws.amazon.com/free and create an account.

- An email address and your name,
- Use Root, for Personal Use, It will ask for billing information (needs actual card info for verification BUT IT WILL NOT CHARGE)

2. Go to EC2 service:

Search for **EC2** in the AWS console search bar.

3. Launch a new instance:

- **Name**: `SentimentApp`
- **OS**: Ubuntu 22.04
- **Instance type**: `t2.micro` (Free Tier)
- **Key pair**: Create a new one →Use the same name as app → download the `.pem` file

- **Firewall/Security Group**:
    - Allow **SSH (22)** from your IP
    - Allow **HTTP (80)** from Anywhere

Click **Launch Instance**

Then follow the steps below

Click **Security Groups > Inbound Rules > Edit Inbound Rules**
Add a rule:

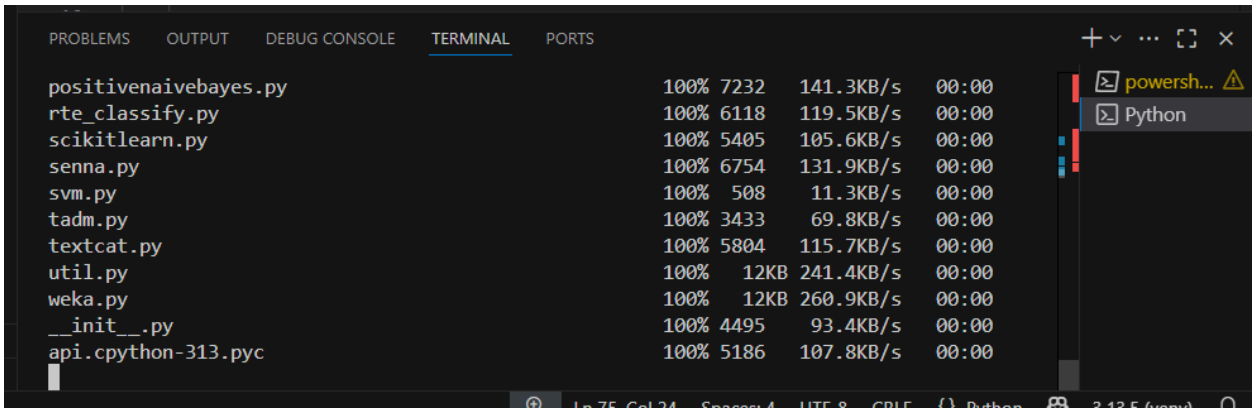
- **Type:** Custom TCP
- **Port Range:** `5000`
- **Source:** `0.0.0.0/0` (anyone can access it — just for testing)

✅ Step 7: Copy Your App Windows Files

In PowerShell, run:

We were able to copy our files from our Windows computers to our EC2 Instance using this code:
scp -i "C:\Users\TimorraRogo\Downloads\SAW-TAPP.pem" -r "C:\Users\TimorraRogo\Downloads\SAW-Tapp" ec2-user@3.142.74.18:/home/ec2-user/

We had to do this outside the EC2 instance.
The screenshot below confirms that the files are being copied from the Windows machine to the Ubuntu machine in EC2.



✅ Step 8: SSH into EC2

After the files completed copying (This can take a while)

This is the code to run the SSH command: ssh -i "C:\Users\TimorraRogo\Downloads\SAW-TAPP.pem" ubuntu@3.142.74.18

Once SShed in: cd ~/SentimentApp

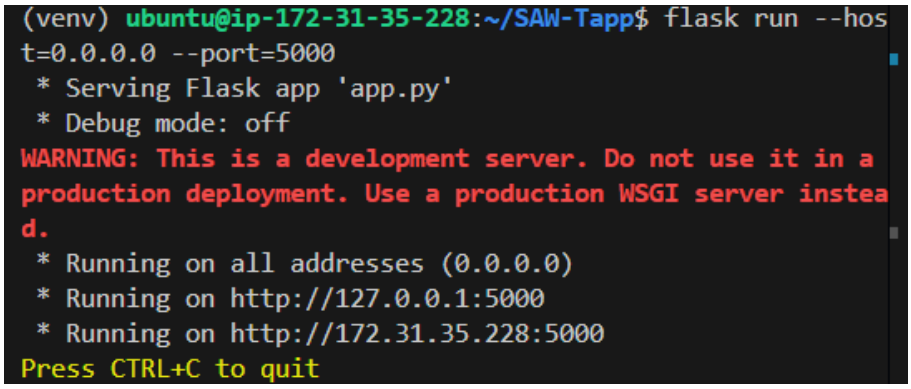
✅ Step 8: Installs

Your terminal will look like this: *(some steps here may look differend from each individual some trouble shooting is nescessary, also check out the "The Revamp tab" for additional steps)*

Next do these Installs (in your terminal):

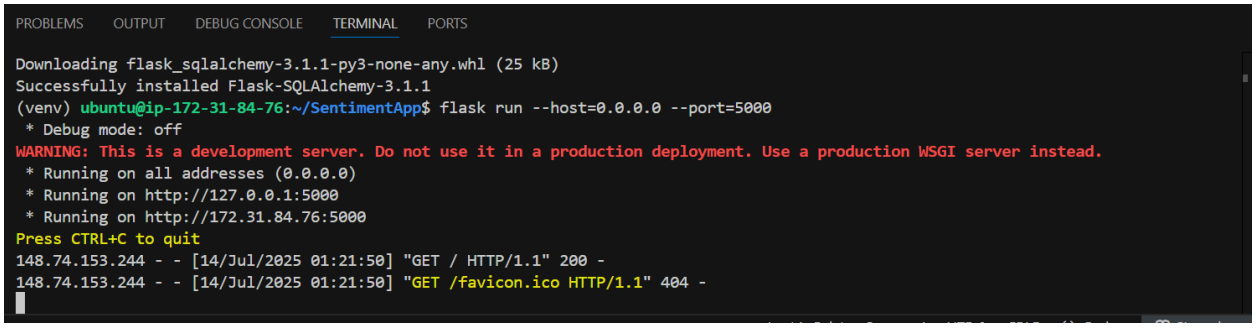
1. sudo apt update && sudo upgrade -y
2. sudo apt install python3-venv
3. source venv/Scripts/activate
4. pip install flask_sqlalchemy
5. pip install -r requirements.txt
6. flask run --host=0.0.0.0 --port=5000

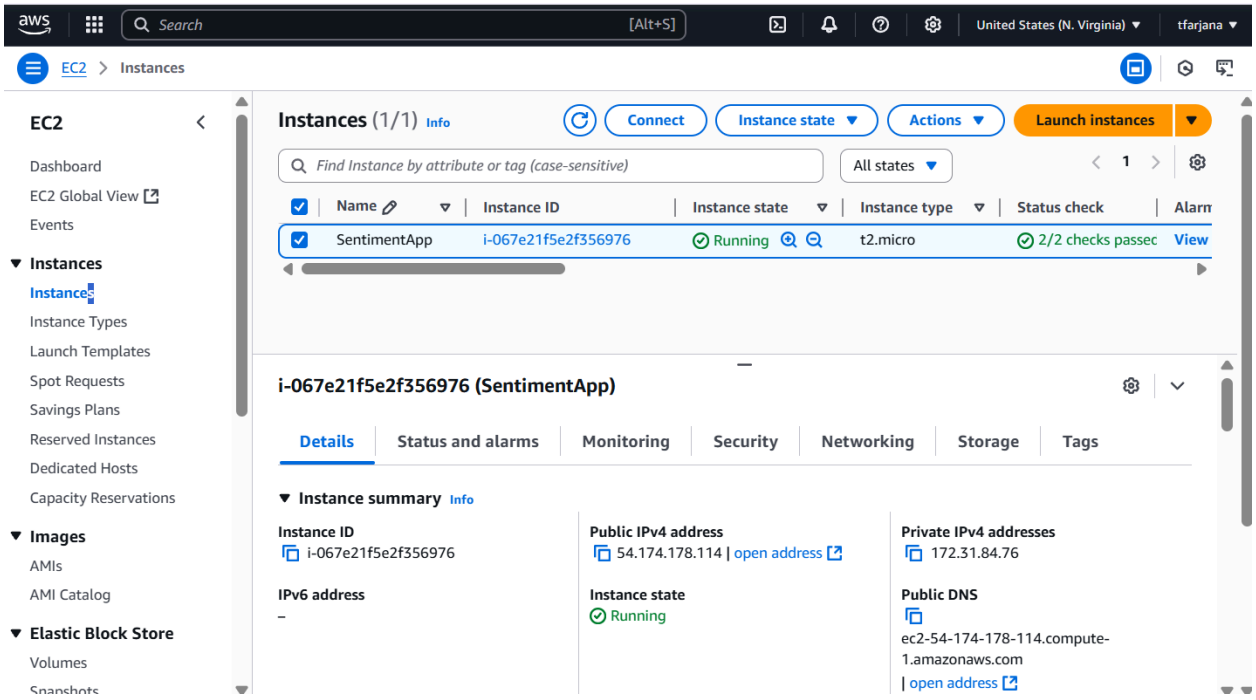
This is the confirmation that the Terminal in VSCode is connected to the EC2 terminal (by SSH). This also confirms that the AWS is hosting our SAW-TApp (Sentiment Analysis Web Tool)

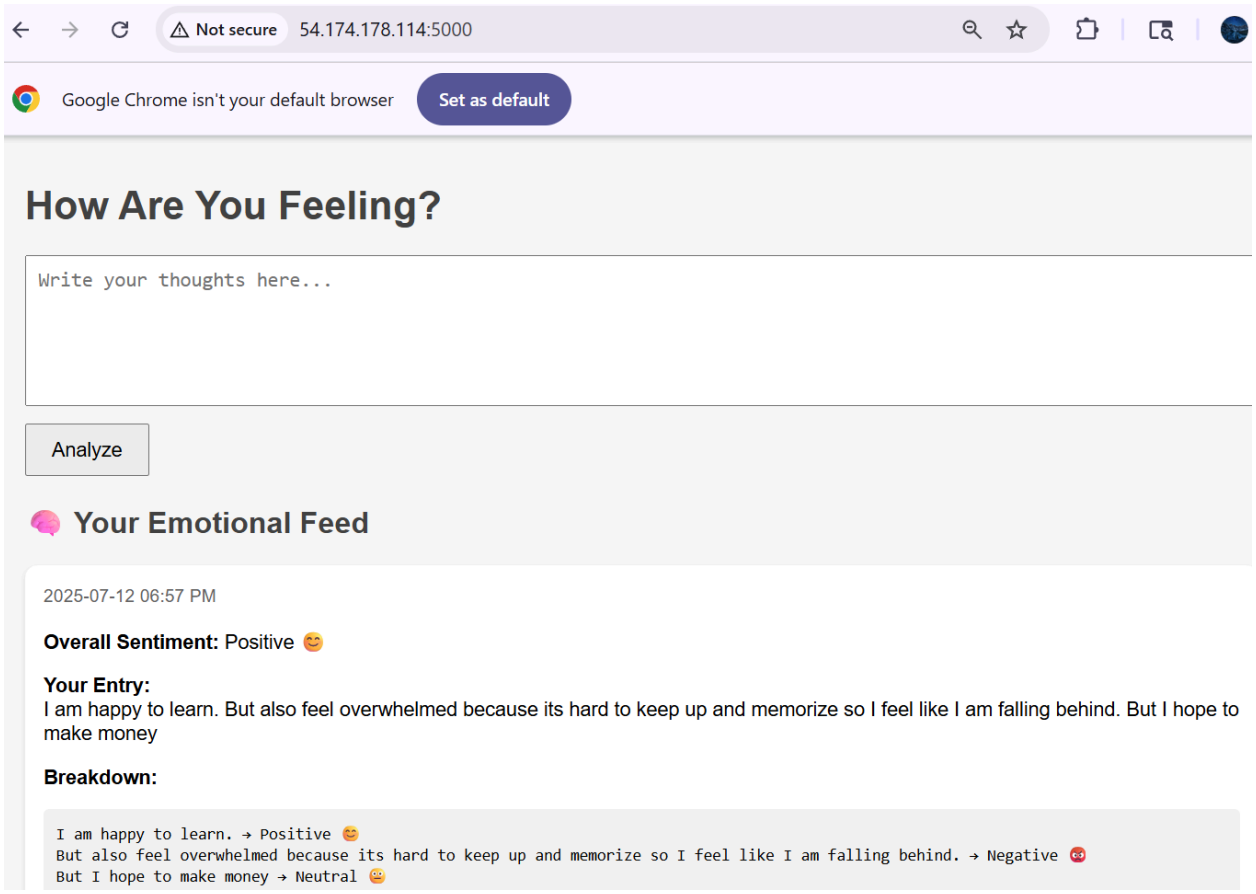


To view the web tool in the internet browser we typed: http://<ec2.ip.addy:5000

Successful SSH into EC2







🎉 Done!

You now have:
✅ A working Sentiment Analysis tool
✅ Hosted live for free using AWS Free Tier
