

🌟 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**.

```
graphql Copy code

sentiment-app/
|
├─ app.py           # Main Python file (Flask app)
├─ requirements.txt  # List of dependencies
├─ venv/            # Python virtual environment
|
└─ templates/       # Folder for HTML files
    ├─ index.html    # Form to enter text
    └─ result.html    # Page to show sentiment result
```

📌 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**:

```
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.

File Name	Progress	Size	Speed	Time
positivenaivebayes.py	100%	7232	141.3KB/s	00:00
rte_classify.py	100%	6118	119.5KB/s	00:00
scikitlearn.py	100%	5405	105.6KB/s	00:00
senna.py	100%	6754	131.9KB/s	00:00
svm.py	100%	508	11.3KB/s	00:00
tadm.py	100%	3433	69.8KB/s	00:00
textcat.py	100%	5804	115.7KB/s	00:00
util.py	100%	12KB	241.4KB/s	00:00
weka.py	100%	12KB	260.9KB/s	00:00
__init__.py	100%	4495	93.4KB/s	00:00
api.cpython-313.pyc	100%	5186	107.8KB/s	00:00

✓ 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`

Run this command:

powershell

Copy Edit

```
ssh -i "C:\Users\Latrishadodson\Downloads\SAWTapp.pem" ubuntu@18.189.31.142
```

- Type **yes** when asked to confirm the key ↓

Once SSHed in: `cd ~/SentimentApp`

✓ Step 8: Installs

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

```
ubuntu@ip-172-31-84-76:~/SentimentApp$
```

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)

```
(venv) ubuntu@ip-172-31-35-228:~/SAW-Tapp$ flask run --host=0.0.0.0 --port=5000
* Serving Flask app 'app.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://172.31.35.228:5000
Press CTRL+C to quit
```

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

Successful SSH into EC2

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Downloading flask_sqlalchemy-3.1.1-py3-none-any.whl (25 kB)
Successfully installed Flask-SQLAlchemy-3.1.1
(venv) ubuntu@ip-172-31-84-76:~/SentimentApp$ flask run --host=0.0.0.0 --port=5000
* 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://172.31.84.76:5000
Press CTRL+C to quit
148.74.153.244 - - [14/Jul/2025 01:21:50] "GET / HTTP/1.1" 200 -
148.74.153.244 - - [14/Jul/2025 01:21:50] "GET /favicon.ico HTTP/1.1" 404 -
```

The screenshot shows the AWS Management Console interface. On the left, the navigation menu includes EC2, Instances, Dashboard, EC2 Global View, Events, and various instance management options. The main content area displays the 'Instances (1/1)' page for the instance named 'SentimentApp'. The instance is in a 'Running' state, as indicated by the green checkmark and the text 'Running'. The instance type is 't2.micro'. The console also shows the instance's details, including its Instance ID (i-067e21f5e2f356976), Public IPv4 address (54.174.178.114), Private IPv4 addresses (172.31.84.76), and Public DNS (ec2-54-174-178-114.compute-1.amazonaws.com).

←

→

↺

⚠ Not secure

54.174.178.114:5000


🔍

☆

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📄

🌐



Google Chrome isn't your default browser

Set as default

How Are You Feeling?

Write your thoughts here...

Analyze

🧠 Your Emotional Feed

2025-07-12 06:57 PM

Overall Sentiment: Positive 😊

Your Entry:
I am happy to learn. But also feel overwhelmed because its hard to keep up and memorize so I feel like I am falling behind. But I hope to make money

Breakdown:
I am happy to learn. → Positive 😊
But also feel overwhelmed because its hard to keep up and memorize so I feel like I am falling behind. → Negative 😞
But I hope to make money → Neutral 😐



Done!

You now have:

- ✓ A working Sentiment Analysis tool
 - ✓ Hosted live for free using AWS Free Tier
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