

```
!pip install gradio
```

```
Requirement already satisfied: gradio in /usr/local/lib/python3.11/dist-packages (5.21.0)
Requirement already satisfied: aiofiles<24.0,>=22.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (23.2.1)
Requirement already satisfied: anyio<5.0,>=3.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (3.7.1)
Requirement already satisfied: fastapi<1.0,>=0.115.2 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.115.11)
Requirement already satisfied: ffmpeg in /usr/local/lib/python3.11/dist-packages (from gradio) (0.5.0)
Requirement already satisfied: gradio-client==1.7.2 in /usr/local/lib/python3.11/dist-packages (from gradio) (1.7.2)
Requirement already satisfied: groovy~=0.1 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.1.2)
Requirement already satisfied: httpx>=0.24.1 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.28.1)
Requirement already satisfied: huggingface-hub>=0.28.1 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.28.1)
Requirement already satisfied: jinja2<4.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (3.1.6)
Requirement already satisfied: markupsafe~=2.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.1.5)
Requirement already satisfied: numpy<3.0,>=1.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (1.26.4)
Requirement already satisfied: orjson~=3.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (3.10.15)
Requirement already satisfied: packaging in /usr/local/lib/python3.11/dist-packages (from gradio) (24.2)
Requirement already satisfied: pandas<3.0,>=1.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.2.2)
Requirement already satisfied: pillow<12.0,>=8.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (11.1.0)
Requirement already satisfied: pydantic>=2.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.10.6)
Requirement already satisfied: pydub in /usr/local/lib/python3.11/dist-packages (from gradio) (0.25.1)
Requirement already satisfied: python-multipart>=0.0.18 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.0.20)
Requirement already satisfied: pyyaml<7.0,>=5.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (6.0.2)
Requirement already satisfied: ruff>=0.9.3 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.11.0)
Requirement already satisfied: safehttpx<0.2.0,>=0.1.6 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.1.6)
Requirement already satisfied: semantic-version~=2.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.10.0)
Requirement already satisfied: starlette<1.0,>=0.40.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.46.1)
Requirement already satisfied: tomkit<0.14.0,>=0.12.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.13.2)
Requirement already satisfied: typer<1.0,>=0.12 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.15.2)
Requirement already satisfied: typing-extensions~=4.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (4.12.2)
Requirement already satisfied: uvicorn>=0.14.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.34.0)
Requirement already satisfied: fsspec in /usr/local/lib/python3.11/dist-packages (from gradio-client==1.7.2->gradio) (2024.1)
Requirement already satisfied: websockets<16.0,>=10.0 in /usr/local/lib/python3.11/dist-packages (from gradio-client==1.7.2->gradio) (13.1)
Requirement already satisfied: idna>=2.8 in /usr/local/lib/python3.11/dist-packages (from anyio<5.0,>=3.0->gradio) (3.10)
Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.11/dist-packages (from anyio<5.0,>=3.0->gradio) (1.3.1)
Requirement already satisfied: certifi in /usr/local/lib/python3.11/dist-packages (from httpx>=0.24.1->gradio) (2025.1.31)
Requirement already satisfied: httpcore==1.* in /usr/local/lib/python3.11/dist-packages (from httpx>=0.24.1->gradio) (1.0.7)
Requirement already satisfied: h11<0.15,>=0.13 in /usr/local/lib/python3.11/dist-packages (from httpcore==1.*->httpx>=0.24.1)
Requirement already satisfied: filelock in /usr/local/lib/python3.11/dist-packages (from huggingface-hub>=0.28.1->gradio) (3)
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-packages (from huggingface-hub>=0.28.1->gradio) (2)
Requirement already satisfied: tqdm>=4.42.1 in /usr/local/lib/python3.11/dist-packages (from huggingface-hub>=0.28.1->gradio)
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.11/dist-packages (from pandas<3.0,>=1.0->gradio)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.11/dist-packages (from pandas<3.0,>=1.0->gradio) (2025)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.11/dist-packages (from pandas<3.0,>=1.0->gradio) (20)
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/lib/python3.11/dist-packages (from pydantic>=2.0->gradio)
Requirement already satisfied: pydantic-core==2.27.2 in /usr/local/lib/python3.11/dist-packages (from pydantic>=2.0->gradio)
Requirement already satisfied: click>=8.0.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0,>=0.12->gradio) (8.1)
Requirement already satisfied: shellingham>=1.3.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0,>=0.12->gradio) (13)
Requirement already satisfied: rich>=10.11.0 in /usr/local/lib/python3.11/dist-packages (from typer<1.0,>=0.12->gradio) (13)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-packages (from python-dateutil>=2.8.2->pandas<3.0)
Requirement already satisfied: markdown-it-py>=2.2.0 in /usr/local/lib/python3.11/dist-packages (from rich>=10.11.0->typer<1)
Requirement already satisfied: pygments<3.0.0,>=2.13.0 in /usr/local/lib/python3.11/dist-packages (from rich>=10.11.0->typer<1)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from requests->huggingfa)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11/dist-packages (from requests->huggingface-hub)
Requirement already satisfied: mdurl~=0.1 in /usr/local/lib/python3.11/dist-packages (from markdown-it-py>=2.2.0->rich>=10.11
```

```
import re
import string
import pandas as pd
import joblib
import nltk
import gradio as gr
from sklearn.model_selection import train_test_split
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.naive_bayes import MultinomialNB
from sklearn.metrics import accuracy_score, classification_report
from transformers import pipeline
```

```
# Download NLTK stopwords
nltk.download('stopwords')
nltk.download('punkt')
from nltk.corpus import stopwords
```

```
# Data Cleaning Function
def clean_text(text):
    nltk.download('stopwords')
    stop_words = set(stopwords.words('english'))
    text = re.sub(r"http\S+|www\S+|https\S+", '', text, flags=re.MULTILINE)
    text = text.translate(str.maketrans('', '', string.punctuation))
    text = text.lower()
    text = ' '.join([word for word in text.split() if word not in stop_words])
```

```

    return text

# Load and preprocess data
def load_and_preprocess_data():
    data = {
        "text": [
            "Stock prices for Company A soared today...",
            "Analysts warn of potential recession...",
            "Tech stocks are experiencing a downturn...",
            "Banking sector shows positive growth..."
        ],
        "label": ["positive", "negative", "negative", "positive"]
    }
    df = pd.DataFrame(data)
    df['cleaned_text'] = df['text'].apply(clean_text)
    return df

# Train sentiment model
def train_sentiment_model():
    df = load_and_preprocess_data()
    X = df['cleaned_text']
    y = df['label']
    X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

    vectorizer = TfidfVectorizer()
    X_train_tfidf = vectorizer.fit_transform(X_train)
    X_test_tfidf = vectorizer.transform(X_test)

    clf = MultinomialNB()
    clf.fit(X_train_tfidf, y_train)

    y_pred = clf.predict(X_test_tfidf)
    print("Accuracy:", accuracy_score(y_test, y_pred))
    print(classification_report(y_test, y_pred))

    joblib.dump(clf, "sentiment_model.pkl")
    joblib.dump(vectorizer, "vectorizer.pkl")

# Load model and vectorizer
def load_sentiment_pipeline():
    clf = joblib.load("sentiment_model.pkl")
    vectorizer = joblib.load("vectorizer.pkl")

    def predict_sentiment(text):
        cleaned = clean_text(text)
        X_tfidf = vectorizer.transform([cleaned])
        return clf.predict(X_tfidf)[0]

    return predict_sentiment

# Summarization using transformers
def summarize_text(text):
    summarizer = pipeline("summarization", model="facebook/bart-large-cnn")
    return summarizer(text, max_length=50, min_length=20, do_sample=False)[0]['summary_text']

# Gradio UI
def analyze_finance_text(user_text):
    predict_sentiment = load_sentiment_pipeline()
    sentiment_result = predict_sentiment(user_text)
    summary = summarize_text(user_text)
    return f"Sentiment: {sentiment_result}\n\nSummary: {summary}"

gui = gr.Interface(
    fn=analyze_finance_text,
    inputs=gr.Textbox(lines=5, placeholder="Paste finance-related text here..."),
    outputs="text",
    title="Finance Insights App",
    description="Analyze financial text for sentiment and get a short summary."
)

def run():
    train_sentiment_model()
    gui.launch(share=True)

if __name__ == "__main__":
    run()

```

```
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data] Package stopwords is already up-to-date!
[nltk_data] Downloading package punkt to /root/nltk_data...
[nltk_data] Package punkt is already up-to-date!
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data] Package stopwords is already up-to-date!
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data] Package stopwords is already up-to-date!
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data] Package stopwords is already up-to-date!
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data] Package stopwords is already up-to-date!
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-de
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Recall is ill-defin
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-de
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Recall is ill-defin
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-de
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Recall is ill-defin
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
Accuracy: 0.0
precision    recall  f1-score   support

negative     0.00     0.00     0.00         1.0
positive     0.00     0.00     0.00         0.0

accuracy          0.00          0.00          0.00         1.0
macro avg         0.00         0.00         0.00         1.0
weighted avg      0.00         0.00         0.00         1.0
```

Colab notebook detected. To show errors in colab notebook, set debug=True in launch()
* Running on public URL: <https://417069faf1d9261e38.gradio.live>
This share link expires in 72 hours. For free permanent hosting and GPU upgrades, run `gradio deploy` from the terminal in t

Finance Insights App

Analyze financial text for sentiment and get a short summary.

user_text

average walmart stock price

output

Sentiment: positive

Summary: The average walmart stock price is \$16.99. The company has a market value of more than \$1.2 billion.

Clear

Submit

Flag

