

# ADP Sentiment Analysis Project

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# Sentimetrics:

## Sentimetrics

### Analyze Employee Sentiments

Generate Synthetic Employee Data

Upload a csv file



Drag and drop file here

Limit 200MB per file • CSV

Browse files



employee\_data (3).csv 3.0KB



### Choose a Prompt or Enter Your Own:

Select a predefined prompt:

Display only the percentage of employee data was positive, neutral, and negative.



# Our Inspiration

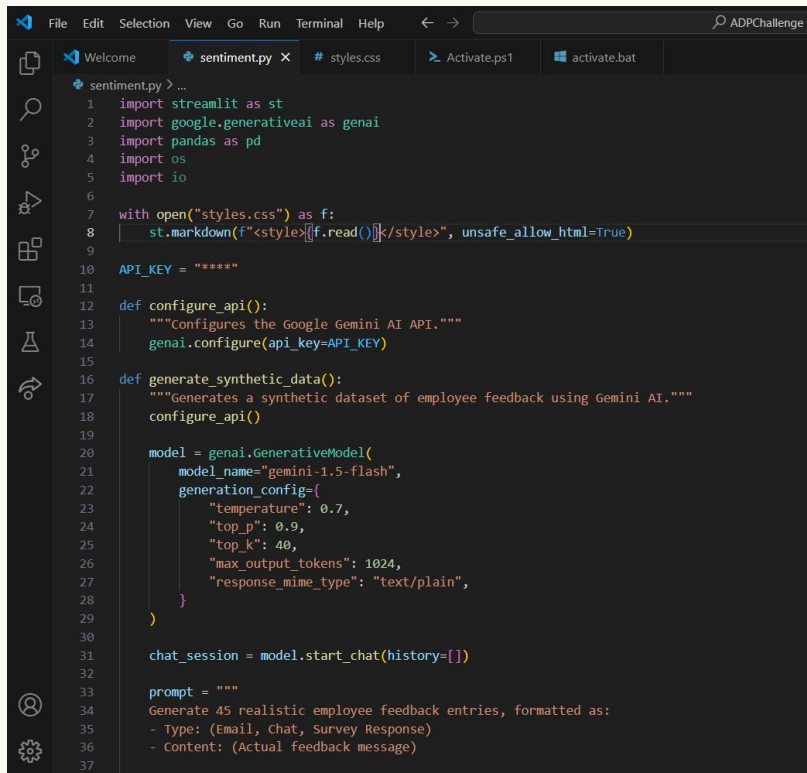
- A company's success depends on its employees.
- Our team seeks careers in technology at a company that values our sentiments and values.
- We Developed Sentimetrics to:
  - Analyze employee sentiments.
  - Identify company strengths.
  - Address employee concerns.
  - Proactively suggest solutions.
- Driven by the goal of improving workplace environment and company culture.

## What it does...

- Our project processes employee communications (emails, chats, and feedback) and provides insights on morale trends, burnout signs, and common workplace concerns.
- Generate synthetic data for experimentation.
- The ability to upload your own csv file and analyze its data.
- Users can select predefined prompts or enter custom ones to generate AI-powered analysis.

# How did we do it?

- Used Google Gemini AI API to generate and analyze employee feedback, uncovering key insights.
- Processed and structured data efficiently with Python & Pandas, then displayed results in Streamlit.
- Styled the front-end with CSS for a visually appealing, interactive user experience.

A screenshot of a code editor window with a dark theme. The title bar shows 'File Edit Selection View Go Run Terminal Help' and a search icon. The editor has several tabs: 'Welcome', 'sentiment.py', '# styles.css', 'Activate.ps1', and 'activate.bat'. The 'sentiment.py' tab is active, showing a Python script. The script starts with imports for streamlit, google.generativeai, pandas, os, and io. It then opens 'styles.css' and writes a markdown snippet. An API key is defined as a placeholder. Two functions are defined: 'configure\_api()' which sets up the Gemini AI client, and 'generate\_synthetic\_data()' which creates a GenerativeModel with specific parameters (gemini-1.5-flash, temperature 0.7, top\_p 0.9, top\_k 40, max\_output\_tokens 1024, response\_mime\_type 'text/plain') and starts a chat session with a prompt to generate 45 realistic employee feedback entries. The script ends with a line number 37.

```
1 import streamlit as st
2 import google.generativeai as genai
3 import pandas as pd
4 import os
5 import io
6
7 with open("styles.css") as f:
8     st.markdown(f"<style>{f.read()}</style>", unsafe_allow_html=True)
9
10 API_KEY = "*****"
11
12 def configure_api():
13     """Configures the Google Gemini AI API."""
14     genai.configure(api_key=API_KEY)
15
16 def generate_synthetic_data():
17     """Generates a synthetic dataset of employee feedback using Gemini AI."""
18     configure_api()
19
20     model = genai.GenerativeModel(
21         model_name="gemini-1.5-flash",
22         generation_config={
23             "temperature": 0.7,
24             "top_p": 0.9,
25             "top_k": 40,
26             "max_output_tokens": 1024,
27             "response_mime_type": "text/plain",
28         }
29     )
30
31     chat_session = model.start_chat(history=[])
32
33     prompt = """
34     Generate 45 realistic employee feedback entries, formatted as:
35     - Type: (Email, Chat, Survey Response)
36     - Content: (Actual feedback message)
37
```

## Accomplishments We're Proud Of

- Successfully integrated AI with a user-friendly, visually appealing interface.
- Overcame challenges with AI prompts to improve accuracy and deliver valuable results.
- Most importantly, we created a tool that can genuinely help companies understand employee sentiment and improve workplace culture.

## What We Learned

- Writing the right AI prompts is crucial for getting accurate and useful insights.
- Well-structured data makes AI integration smoother and more efficient.
- Creating a user-friendly experience is key to making AI tools easy to use.
- Collaborating as a team allowed us to bounce ideas, troubleshoot issues, and refine our approach.

# What's next?

- Expand our project to incorporate graphs such as pie charts or bar graphs to show visual representations of the analytic reports.
- Add real-time tracking to let companies determine company morale dynamically instead of static reports is also something we would like to add in the future.
- Improve user interface to be more user-friendly and easily accessible.
- Implement a multi-language feature that would benefit companies all over the world.