Gen-AI Unit 1 Project

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Problem Statement: Customer Feedback Analyzer:

Goal:

The goal of this project is to analyze customer feedback and product reviews and identify whether the customers are happy or unhappy. The system classifies feedback into Positive, Neutral, or Negative sentiment using an artificial intelligence model.

Tech Used:

- ***Python***
- ***Hugging Face Transformers***
- ***`pipeline('sentiment-analysis')`***
- ***Pre-trained Model: `cardiffnlp/twitter-roberta-base-sentiment`***

Abstract:

This project implements a Customer Feedback Analyzer system using Natural Language Processing. The system takes customer reviews stored in a CSV file and analyzes the sentiment of each comment automatically.

A pre-trained transformer model trained on social media data is used to understand informal language, slang, and emojis commonly found in customer feedback. The project is developed using Python and the Hugging Face Transformers library. This system demonstrates how artificial intelligence can be used to analyze large volumes of user feedback efficiently.

What I Learned:

In this project, I learned how sentiment analysis works using transformer-based language models. I understood how pre-trained models can analyze text and determine whether the sentiment is positive, neutral, or negative.

I also learned how Hugging Face pipelines simplify complex NLP tasks such as text preprocessing, model loading, and prediction. Additionally, I gained experience working with CSV datasets and integrating them with AI models in Python.

What I Built:

I built a Customer Feedback Analyzer system where customer reviews are read from a CSV file and analyzed using a sentiment analysis pipeline. The system processes each feedback comment and predicts its sentiment along with a confidence score.

The model used in this project is trained on social media data, making it suitable for analyzing informal customer feedback. The project demonstrates the practical use of Natural Language Processing in understanding customer opinions.

Screenshots:

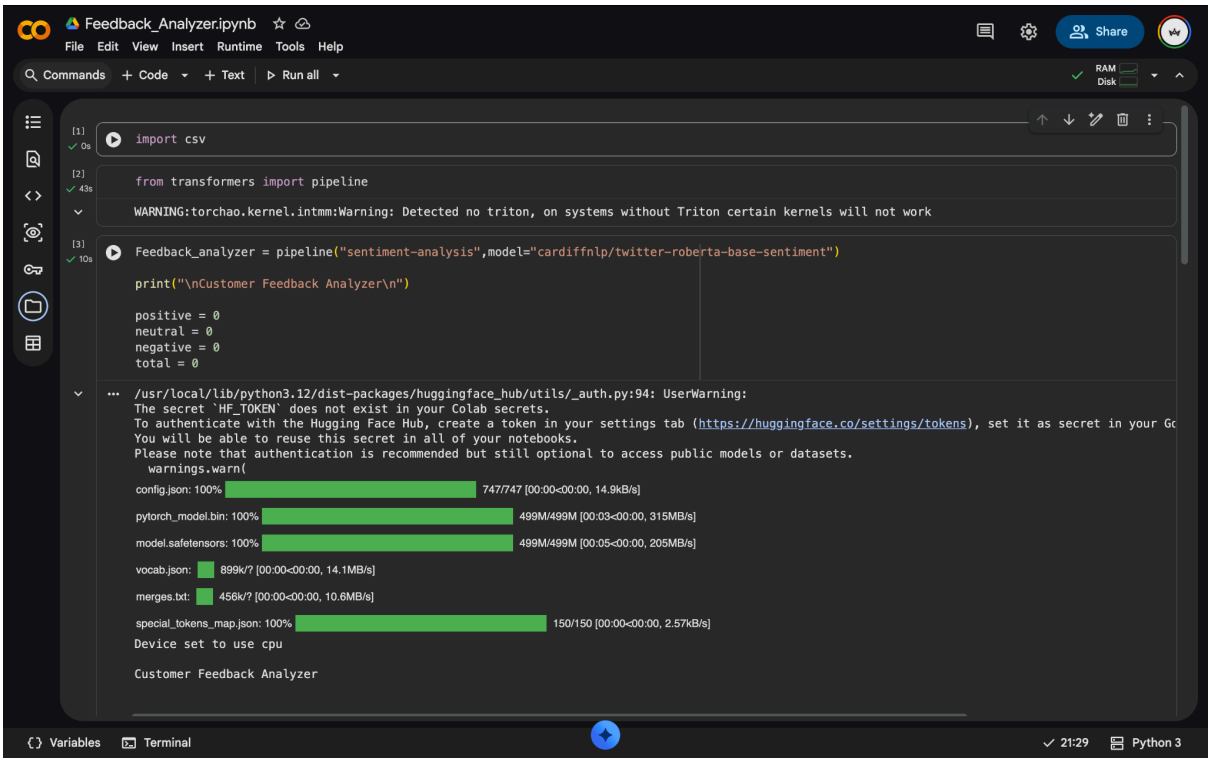
1. ***Screenshot of the CSV dataset (`Feedback.csv`):***

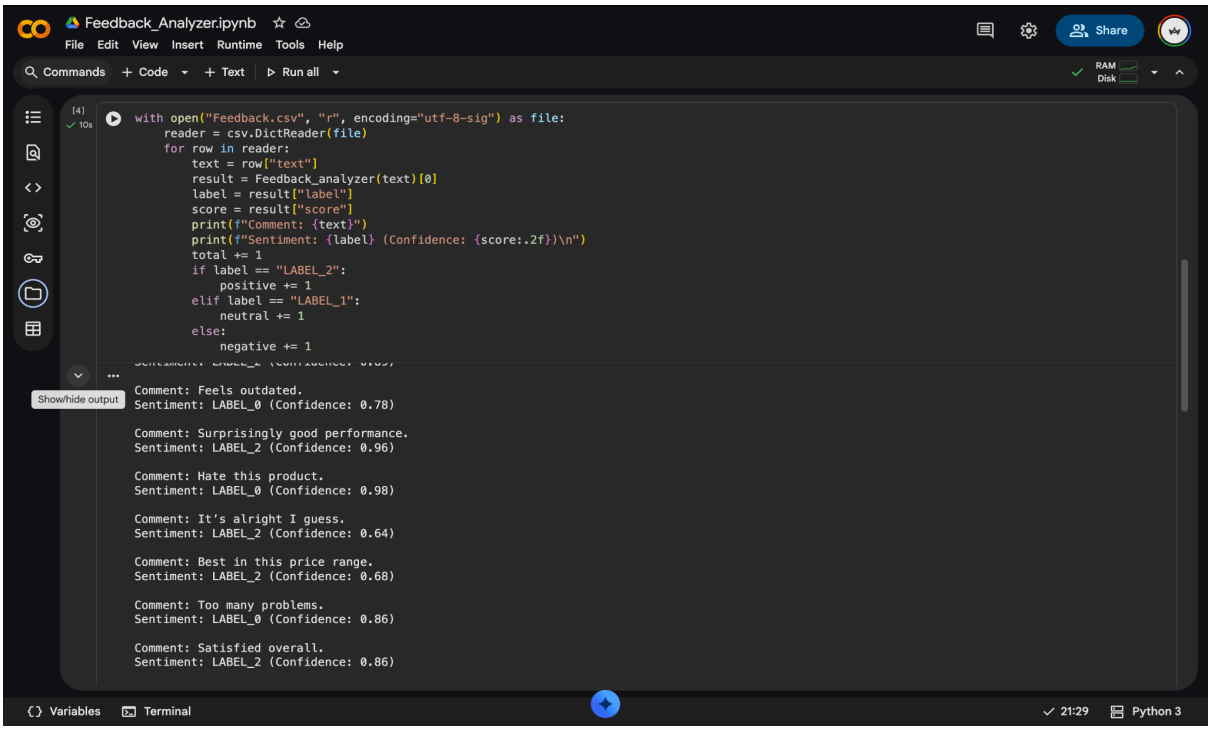
Feedback.csv ●

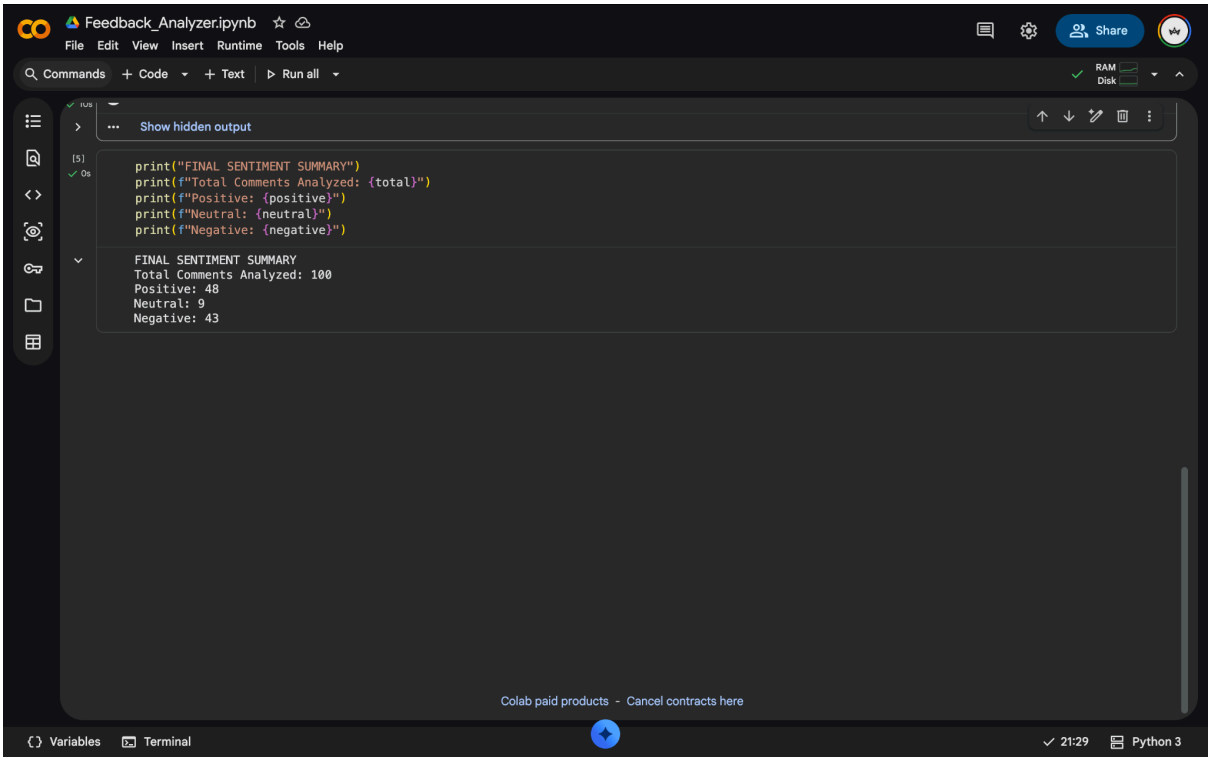
Feedback.csv

	id	text
1	1	This phone is🔥🔥 totally worth the money!
2	2	Worst update ever... my phone is dead now 💀
3	3	Meh, the product is okay I guess.
4	4	Customer service was trash 😡
5	5	Love this brand, always delivers ❤️
6	6	Not bad, but could have been better.
7	7	Absolutely horrible experience, never buying again.
8	8	Pretty decent for the price tbh.
9	9	I'm so disappointed, this is not what I expected.
10	10	Works fine, nothing special.
11	11	Best purchase I've made this year 🔥
12	12	Waste of money, don’t fall for the hype.
13	13	Average product, nothing impressive.
14	14	Support team actually helped me, surprised!
15	15	Battery life sucks big time 😤
16	16	Honestly loving it so far!
17	17	Product arrived late but works fine.
18	18	Terrible packaging, item damaged.
19	19	This is so good omg 😍
20	20	I regret buying this.
21	21	Solid build quality, feels premium.
22	22	Worst customer service experience ever.
23	23	Does what it says, no complaints.
24	24	Kinda overpriced for what it offers.
25	25	Super smooth performance 🔥
26	26	Not satisfied at all.
27	27	Okayish product, expected more.
28	28	Very happy with this purchase!
29	29	Stopped working after a week 💀
30	30	The design looks really cool.
31	31	Pathetic quality, very cheap materials.

2. *Screenshot of the Python code execution:*







Conclusion:

This project successfully demonstrates the use of a pre-trained transformer model for customer feedback analysis. The system accurately classifies feedback into positive, neutral, and negative sentiments. This project shows how artificial intelligence and NLP techniques can be applied to real-world problems such as analyzing customer reviews and improving user experience.