Hi, This is Pasupuleti Pavan. This document contains the explanation for chatbot code which was built as part of assessment.

- Firstly, I imported required libraries and I found that there are some dependencies needs to be installed. I used pip to install them.
- Then I used pipeline function and used "distilbert-base-uncased-finetuned-sst-2-english" pre-trained model which is popular for language translation. I used text classification as parameter for pipeline function.
- In third cell, I created a FaQs using nested dictionary. Instead of getting already existing files from other sources I created my own using some statements. I might degrade the performance my model. But it's ok I guess. In my opinion, it is not compulsory to answer basic questions by a chatbot which is used for customer support.
- Then I created class:
  - **Purpose:** Customer support chatbot for electronics company, handling inquiries via FAQ matching (DistilBERT, RoBERTa) or text generation (distilgpt2) in Colab.
  - **Parameters:** model_name, classifier (or None), generative_model (or None), tokenizer (or None).
  - **Attributes:** faqs (JSON), conversation_history (3-turn limit), max_history (3), confidence_threshold (0.7).
  - **Methods:**
    classify_intent: Matches query to FAQs; returns (category, question, score) or (None, None, 0).
    get_generative_response: Generates distilgpt2 response using prompt with FAQs, history, query; limits to 150 tokens.
    get_response: Logs input, adds to history, uses FAQ if confidence > 0.7, else generative/default; logs response.
    reset_history: Clears history.

Then I used one simple visualization and created 2 more models and called the function. I got 3 responses in total. 2 were performing better than the 3rd one "distiledgpt2" model.