I. Install and import packages

```
!pip install -q cohere pandas matplotlib seaborn

import os
import pandas as pd
import cohere
import matplotlib.pyplot as plt
import seaborn as sns
import concurrent.futures
import time
from tqdm import tqdm
```

```
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```

II. Set up the Cohere API key

```
cohere_api_key = "XXXXXX" # Input your Cohere API KEY
```

```
import getpass

COHERE_API_KEY = getpass.getpass(cohere_api_key)
co = cohere.Client(COHERE_API_KEY)
```

```
HEl4nUtEuACx9xFXtQWj1g6kN4h897EEOeM1Z2mK••••••••••
```

III. Load customer data from pre-uploaded /content/transcripts_v3

```
def load_member_conversations(path):
    conversations = []
    for file in os.listdir(path):
        if file.endswith('.txt'):
            with open(os.path.join(path, file), 'r', encoding='utf-8') as f:
                text = f.read()
                # Extract all lines spoken by the Member
                member_lines = [line.split(":", 1)[1].strip()
                                for line in text.splitlines()
                                if line.strip().lower().startswith("member:")]
                member_text = " ".join(member_lines)
                conversations.append({'filename': file, 'member_text': member_text})
    return pd.DataFrame(conversations)

df = load_member_conversations('/content/transcripts_v3')
df.head()
```

	filename	member_text
0	transcript_185.txt	Hi, I'm calling to get a case pre-authorized. ...
1	transcript_87.txt	Hi, I'm calling about a denied claim I receive...
2	transcript_46.txt	Hi, I'm having some trouble registering and lo...
3	transcript_146.txt	Hi, I'm calling about a denied claim. My claim...
4	transcript_38.txt	Hi, I'm calling to get a case pre-authorized f...

Next steps: Generate code with df | View recommended plots | New interactive sheet

IV. Function to classify sentiment and outcome using Cohere Chat API

```
def classify_text_with_chat(text):
    try:
        prompt = f"""
You are a helpful assistant for an insurance call center. Please analyze the following customer dialogue and determine:
1. The overall sentiment (positive, negative, or neutral)
2. The outcome of the call (issue resolved or follow-up action needed)

Customer says:
\"\"\"
{text}
\"\"\"

Respond in the following format:
Sentiment: <positive/negative/neutral>
Call Outcome: <issue resolved/follow-up action needed>
"""

        response = co.chat(
            message=prompt,
            model='command-r-plus',
            temperature=0.3
        )

        return response.text.strip()

    except Exception as e:
        return f"Error: {e}"
```

V. Split into chunks of 20 entries each

```
def split_dataframe(df, chunk_size=20):
    return [df.iloc[i:i + chunk_size].copy() for i in range(0, len(df), chunk_size)]

chunks = split_dataframe(df, 20)
```

VI. Process each chunk and extract sentiment & outcome

```
processed_chunks = []

for i, chunk in enumerate(chunks):
    print(f"\n🔄 Processing chunk {i+1}/{len(chunks)}")
    results = []

    for j, text in enumerate(tqdm(chunk['member_text'], desc=f"Chunk {i+1}")):
        result = classify_text_with_chat(text)
        results.append(result)
        time.sleep(1.5)  # small pause to avoid hitting rate limits

    chunk['response'] = results
    chunk['sentiment'] = chunk['response'].str.extract(r"Sentiment:\s*(\w+)", expand=False).str.lower()
    chunk['call_outcome'] = chunk['response'].str.extract(r"Call Outcome:\s*(.*)", expand=False).str.lower()
    processed_chunks.append(chunk)
```

```
🔄 Processing chunk 1/10
Chunk 1: 100%|██████████| 20/20 [00:40<00:00, 2.03s/it]

🔄 Processing chunk 2/10
Chunk 2: 100%|██████████| 20/20 [00:42<00:00, 2.10s/it]

🔄 Processing chunk 3/10
Chunk 3: 100%|██████████| 20/20 [00:40<00:00, 2.01s/it]

🔄 Processing chunk 4/10
Chunk 4: 100%|██████████| 20/20 [00:39<00:00, 1.99s/it]

🔄 Processing chunk 5/10
Chunk 5: 100%|██████████| 20/20 [03:07<00:00, 9.39s/it]

🔄 Processing chunk 6/10
Chunk 6: 100%|██████████| 20/20 [00:40<00:00, 2.05s/it]

🔄 Processing chunk 7/10
Chunk 7: 100%|██████████| 20/20 [00:40<00:00, 2.01s/it]

🔄 Processing chunk 8/10
Chunk 8: 100%|██████████| 20/20 [00:38<00:00, 1.94s/it]

🔄 Processing chunk 9/10
Chunk 9: 100%|██████████| 20/20 [00:39<00:00, 1.97s/it]

🔄 Processing chunk 10/10
Chunk 10: 100%|██████████| 20/20 [00:38<00:00, 1.95s/it]
```

VII. Combine everything back into a single DataFrame

```
final_df = pd.concat(processed_chunks, ignore_index=True)
final_df.to_csv('/content/final_transcript_analysis.csv', index=False)
final_df.head()
```

	filename	member_text	response	sentiment	call_outcome
0	transcript_185.txt	Hi, I'm calling to get a case pre-authorized. ...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
1	transcript_87.txt	Hi, I'm calling about a denied claim I receive...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
2	transcript_46.txt	Hi, I'm having some trouble registering and lo...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
3	transcript_146.txt	Hi, I'm calling about a denied claim. My claim...	Sentiment: Positive\nCall Outcome: Issue Resolved	positive	issue resolved
4	transcript_38.txt	Hi, I'm calling to get a case pre-authorized f...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved

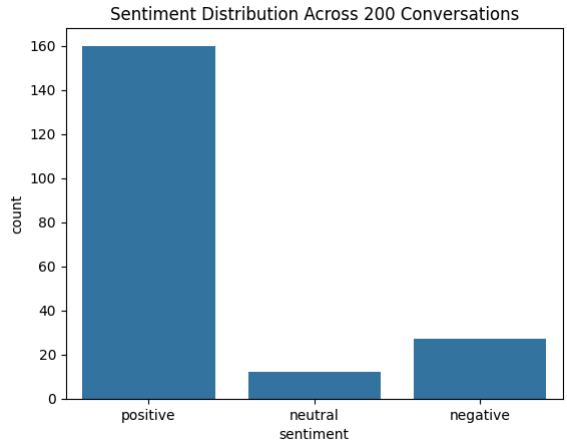
Next steps: Generate code with final_df | View recommended plots | New interactive sheet

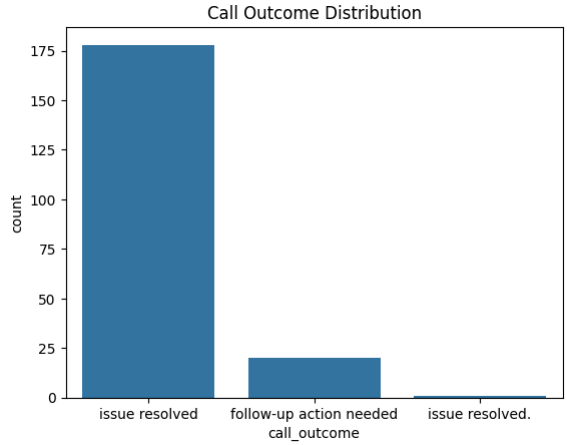
VIII. Visualise the Results

```
# Sentiment Distribution
sns.countplot(data=final_df, x='sentiment')
plt.title('Sentiment Distribution Across 200 Conversations')
plt.show()

# Outcome Distribution
sns.countplot(data=final_df, x='call_outcome')
plt.title('Call Outcome Distribution')
plt.show()

# Cross-tab Analysis
pd.crosstab(final_df['sentiment'], final_df['call_outcome'], normalize='index')
```





1 to 3 of 3 entries Filter

sentiment ▼	follow-up action needed	issue resolved	issue resolved.
positive	0.00625	0.99375	0.0
neutral	0.25	0.6666666666666666	0.08333333333333333
negative	0.5925925925925926	0.4074074074074074	0.0

Show 25 per page

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IX. Save Output for GitHub or Reporting

```
# Save as CSV for GitHub or final use
final_df.to_csv('/content/analyzed_transcripts.csv', index=False)

```

X. Evaluate the Model (Manually Label First 20 Transcripts)

```
final_df[:20]
```

	filename	member_text	response	sentiment	call_outcome
0	transcript_185.txt	Hi, I'm calling to get a case pre-authorized. ...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
1	transcript_87.txt	Hi, I'm calling about a denied claim I receive...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
2	transcript_46.txt	Hi, I'm having some trouble registering and lo...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
3	transcript_146.txt	Hi, I'm calling about a denied claim. My claim...	Sentiment: Positive\nCall Outcome: Issue Resolved	positive	issue resolved
4	transcript_38.txt	Hi, I'm calling to get a case pre-authorized f...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
5	transcript_141.txt	Hi, I'm calling about a denied claim I receive...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
6	transcript_188.txt	Hi, I'm calling about my recent visit to the d...	Sentiment: Positive\nCall Outcome: Issue Resolved	positive	issue resolved
7	transcript_157.txt	Hi, I'm calling to get a case pre-authorized. ...	Sentiment: Positive\nCall Outcome: Issue Resolved	positive	issue resolved
8	transcript_16.txt	Hi, I'm calling about my online service accoun...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
9	transcript_148.txt	Hi, I'm calling about my recent doctor's visit...	Sentiment: Positive\nCall Outcome: Issue Resolved	positive	issue resolved
10	transcript_158.txt	Hi, I'm calling about my recent visit to the d...	Sentiment: Positive\nCall Outcome: Issue Resolved	positive	issue resolved
11	transcript_106.txt	Hello, I'm having some trouble registering and...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
12	transcript_9.txt	Hi, I'm trying to register and log in to my on...	Sentiment: Neutral\nCall Outcome: Follow-up ac...	neutral	follow-up action needed
13	transcript_11.txt	Hi, I'm having trouble registering and logging...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
14	transcript_108.txt	Hi, I'm calling to get a case pre-authorized f...	Sentiment: Negative\nCall Outcome: Follow-up a...	negative	follow-up action needed
15	transcript_197.txt	Hi, I'm calling to get a case pre-authorized. ...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
16	transcript_61.txt	Hi, I'm calling about my recent visit to the d...	Sentiment: Negative\nCall Outcome: Issue Resolved	negative	issue resolved
17	transcript_35.txt	Hi, I'm having trouble logging in to my online...	Sentiment: Neutral\nCall Outcome: Issue resolved.	neutral	issue resolved.
18	transcript_22.txt	Hi, I'm calling about a denied claim I receive...	Sentiment: Positive\nCall Outcome: Issue resolved	positive	issue resolved
19	transcript_86.txt	Hi, I'm calling about my recent visit to the d...	Sentiment: Positive\nCall Outcome: Issue Resolved	positive	issue resolved

```
from sklearn.metrics import accuracy_score, classification_report

# Replace these with your manually labeled ground truth
y_true_sentiment = ['positive',
                    'positive',
                    'positive',
                    'positive',
                    'positive',
                    'positive',
                    'positive',
                    'positive',
                    'positive',
                    'positive',
                    'positive',
                    'neutral',
                    'positive',
                    'negative',
                    'positive',
                    'negative',
                    'neutral',
                    'positive',
                    'positive',
                    ]  # 20 values
y_pred_sentiment = final_df['sentiment'][:20]

print("Sentiment Accuracy:", accuracy_score(y_true_sentiment, y_pred_sentiment))
print("Classification Report:\n", classification_report(y_true_sentiment, y_pred_sentiment))
```

```
Sentiment Accuracy: 1.0
Classification Report:
              precision    recall  f1-score   support

    negative       1.00      1.00      1.00         2
     neutral       1.00      1.00      1.00         2
    positive       1.00      1.00      1.00        16

    accuracy                           1.00        20
   macro avg       1.00      1.00      1.00        20
weighted avg       1.00      1.00      1.00        20
```

XI. Exploratory Data Analysis (EDA)

```
import seaborn as sns
import matplotlib.pyplot as plt

sns.countplot(data=final_df, x='sentiment')
plt.title("Sentiment Distribution")
plt.show()

sns.countplot(data=final_df, x='call_outcome')
plt.title("Outcome Distribution")
plt.show()
```