SENTIMENT ANALYSIS

1. Data Collection :

- Gather a diverse dataset of customer feedback for the competitor products you're interested in analyzing. This data can be collected from sources like social media, review platforms, surveys, or even direct feedback submissions.

2. Data Preprocessing :

- Clean and preprocess the text data. This involves tasks like removing special characters, lowercasing, removing stop words, and handling any specific issues related to your dataset.

3. Labeling:

- Annotate the data with sentiment labels. Typically, sentiments are categorized into classes like positive, negative, and neutral. You might use human annotators or pre-trained sentiment models to do this.

4. Feature Extraction:

- Convert the preprocessed text data into numerical format. Common techniques include TF-IDF (Term Frequency-Inverse Document Frequency) or word embeddings (Word2Vec, GloVe, etc.).

5. Model Selection:

- Choose a suitable sentiment analysis model. You can start with traditional machine learning models like Support Vector Machines (SVMs), Naive Bayes, or more advanced techniques like recurrent neural networks (RNNs) or transformer-based models like BERT.

6. Model Training:

- Split your dataset into training and testing sets. Train the chosen model on the training set and evaluate its performance on the testing set.

7. Model Fine-tuning:

- Depending on the performance, fine-tune your model. This might involve hyperparameter tuning or experimenting with different architectures.

8. Validation and Interpretation:

- Validate the model's performance using metrics like accuracy, precision, recall, and F1-score. Additionally, explore misclassified samples to understand the model's limitations.

9. Competitor Analysis:

- Apply the trained model to the competitor feedback data. This will generate sentiment labels for each piece of feedback.

10. Extract Insights:

- Analyze the sentiment labels to identify trends, strengths, and weaknesses of the competing products. Visualizations like word clouds, bar charts, or heatmaps can be useful for summarizing the insights.

11. Iterate and Refine:

- If needed, iterate through the process, potentially improving data collection methods, preprocessing steps, or trying different models.

12. Reporting and Recommendations:

- Summarize your findings in a report. Provide actionable recommendations based on the insights gained from the sentiment analysis.