Mini Report

Problem Statement

Meeting transcripts are often lengthy and unstructured, making it difficult for teams to quickly identify key discussion points, decisions, and action items. Manual summarization is time-consuming and prone to errors. The challenge was to automate the summarization process while providing sentiment insights, named entity recognition, and multilingual translation for broader accessibility.

Why This Problem Was Chosen

Efficient documentation of meetings is a common pain point across industries. Automating this task improves productivity, ensures accountability for action items, and enables quick knowledge sharing with stakeholders who may not attend the meeting.

How GenAI Helped

Google’s Gemini Generative AI model played a central role in:
- Summarization: Producing concise, structured key points.
- Action Item Extraction: Identifying responsibilities and deadlines.
- Translation: Making summaries accessible across multiple languages.

Traditional NLP libraries (spaCy, VADER) were used for entity extraction and sentiment analysis, while GenAI focused on higher-level reasoning and structured summarization. This hybrid approach combined the strengths of deterministic NLP with the flexibility of LLMs.

Key Learnings

1. Prompt design is critical – small refinements (like limiting bullet points or explicitly asking for deadlines) significantly improved results.
2. Hybrid AI systems work best – rule-based NLP (for sentiment/entities) complements generative models, ensuring both precision and contextual understanding.
3. Translation works better on summaries than raw transcripts – preprocessing improves clarity and avoids noise.
4. Scalability & User Experience – embedding this pipeline in Streamlit makes it accessible and interactive for real-world use cases.