Simplifying Clinical Notes Using GPT-4
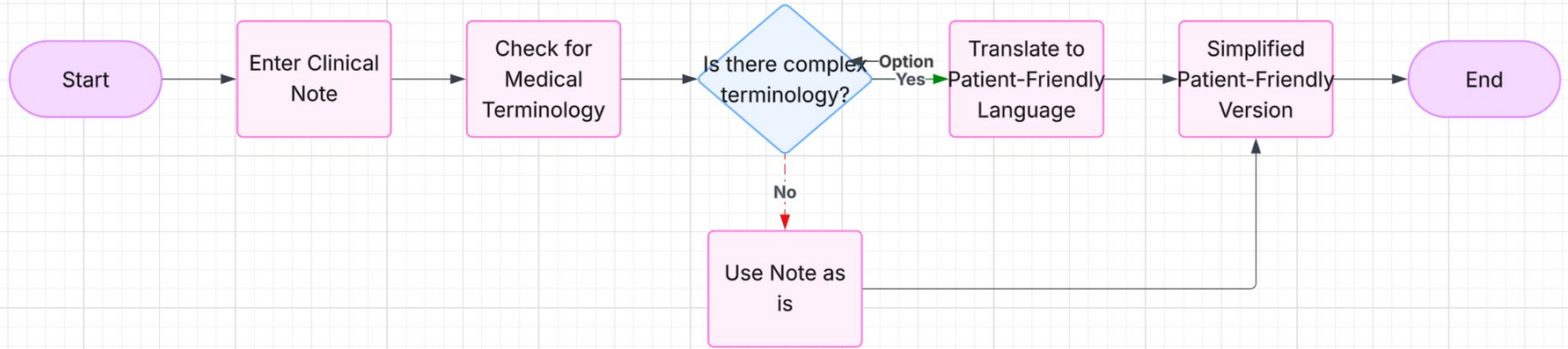
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Introduction: Why This Project?

- Healthcare notes are too technical for many patients.

- Patients often struggle to understand their care.

- Goal: Use AI (Chat GPT API) to **translate** doctor notes into **simple language**.

Methods: How I Built It?

- ❖ Used **OpenAI GPT-4 via ChatGPT API**.

- ➔ Wrote a simple Python script:

- ● Takes doctor's note as input.

- ● Sends it to the model using a specific prompt.

- ● Returns a **simplified** version for patients.

Demo

```
# clinical_note_simplifier.py

import openai

# Set your API key
api_key = "sk-proj-m6o0FjZ6lgipH1SscQejtgrJxmKLYc43fWGJI1YQFHP8f36BInrre9qHO0I5EMWpvgAinIc752T3BlbkFJRuxO9LV4gycAzGbmcFtldAx7zOuMHZM2TKW-D(

# Create OpenAI client
client = openai.OpenAI(api_key=api_key)

# Function to simplify a clinical note
def simplify_clinical_note(note):
    prompt = (
        "You are a healthcare assistant. Your job is to simplify complex doctor notes "
        "so that patients can easily understand them. Use simple, clear language without medical jargon.\n\n"
        f"Doctor's Note:\n{note}\n\nSimplified Patient-Friendly Note:"
    )

    response = client.chat.completions.create(
        model="gpt-4",
        messages=[
            {"role": "system", "content": "You simplify doctor notes for patients."},
            {"role": "user", "content": prompt},
        ],
        temperature=0.7,
        max_tokens=300,
    )

    simplified_note = response.choices[0].message.content.strip()
    return simplified_note
```

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```
maryansaid@Maryans-Laptop Desktop % python3 high_risk.py
Clinical Note Simplifier using GPT-4
Type 'exit' to quit.

Enter a clinical note to simplify:
Patient presents with syncope and orthostatic hypotension.

--- Simplified Patient-Friendly Version ---
The patient has experienced fainting spells and a drop in blood pressure when standing up.
```

Results/Future Directions

Strengths:

- Simplified notes clearly.

- Easy to understand for most patients.

Weaknesses:

- Sometimes oversimplified important information.

- Needed human review to ensure medical accuracy.

Future Directions

- Fine-tune models for medical simplification.

- Add **automatic accuracy checks**.

- Test outputs with real patients.

- Always keep human oversight.

Conclusion

- GPT-4 and Chat GPT API can be powerful tools for healthcare communication.

- Need careful evaluation before real-world use.

- Human-centered design is critical.