Legal Contract Simplification with LLMs

Code:

```python
import openai

import os

import re


# Set your OpenAI API key (or load from environment)

openai.api_key = os.getenv("OPENAI_API_KEY")


def read_contract(file_path):

    with open(file_path, 'r', encoding='utf-8') as file:

        return file.read()


def split_into_clauses(text):

    # Simple clause splitting based on numbering or semicolon

    clauses = re.split(r'(?<=\d\.)\s+|\n+', text)

    return [clause.strip() for clause in clauses if clause.strip()]


def simplify_clause(clause):

    prompt = (

        "Simplify the following legal clause into plain English without changing its legal meaning:\n\n"

        f"Clause: {clause}\n\nSimplified:"

    )


    response = openai.ChatCompletion.create(

        model="gpt-4",

        messages=[{"role": "user", "content": prompt}],

        temperature=0.5,

        max_tokens=300

    )
```

```python
    return response.choices[0].message["content"].strip()


def simplify_contract(clauses):
    simplified = []
    for i, clause in enumerate(clauses):
        print(f"Simplifying clause {i+1}/{len(clauses)}...")
        simple = simplify_clause(clause)
        simplified.append((clause, simple))
    return simplified


def save_simplified_contract(simplified_clauses, output_path):
    with open(output_path, 'w', encoding='utf-8') as file:
        for original, simple in simplified_clauses:
            file.write("Original:\n" + original + "\n\n")
            file.write("Simplified:\n" + simple + "\n")
            file.write("="*80 + "\n\n")


if __name__ == "__main__":
    input_file = "sample_contract.txt"
    output_file = "simplified_contract.txt"

    print("Reading contract...")
    contract_text = read_contract(input_file)

    print("Splitting into clauses...")
    clauses = split_into_clauses(contract_text)

    print("Simplifying clauses...")
    simplified = simplify_contract(clauses)

    print("Saving simplified contract...")
```

```python
    save_simplified_contract(simplified, output_file)

    print("Done. Simplified contract saved to:", output_file)
```