Survey Sheldon

Project Overview:

Survey Sheldon is a Python-based FastAPI application designed to transform complex DOCX survey documents into a structured JSON format. It automates the entire conversion pipeline while preserving the original survey logic and personalization.

Technologies Used:

- Python
- FastAPI
- GPT AI for intelligent text parsing
- Libraries for DOCX, HTML, and Markdown conversion

Roles & Responsibilities:

- Conversion Pipeline Development: Built and managed the full transformation process from DOCX to HTML to Markdown.
- AI Integration: Incorporated GPT AI to intelligently parse survey content and extract questions, dependencies, and special instructions.
- Logical Flow & Notation: Designed systems to reconstruct survey logic and implement advanced notation for identifying dependent questions.
- Optimization: Ensured the final JSON output is structured for seamless integration with modern survey platforms.

Key Features:

- Comprehensive Conversion: Transforms DOCX surveys into structured JSON through a multi-stage pipeline.
- Intelligent Parsing: Uses GPT AI to accurately identify and extract survey questions, dependencies, and instructions.
- Logical Reconstruction: Rebuilds the survey's flow by resolving conditional questions and mapping interdependent relationships.
- Advanced Notation & Piping: Implements a sophisticated mechanism that transforms instructions in a precise way to clearly identify dependent questions.
- Preservation of Complexity: Recognizes and maintains intricate elements such as skip patterns, conditional instructions, and question dependencies.

- Multi-stage Processing: Employs iterative AI calls for high accuracy and error reduction in complex survey structures.
- Some of the examples for notation will be **Entry Condition, Row Masking, Terminate Condition** etc based on the dependent question.

Challenges & Solutions:

- Complex Survey Structures:
  Challenge: Traditional methods struggle with the nuanced logic and conditional flows in surveys.
  Solution: Leveraging multi-stage GPT AI processing enables accurate parsing and reconstruction of complex survey elements.
- Maintaining Logical Flow & Personalization:
  Challenge: Preserving original branching logic and dynamic instructions during conversion.
  Solution: Developed an advanced notation and piping system that precisely transforms instructions to maintain dependency relationships.

Project Outcome & Impact:

Survey Sheldon significantly reduces the time and effort needed to digitize surveys by automating a traditionally manual and error-prone process. The final, optimized JSON output facilitates seamless integration with modern survey platforms, ensuring that even the most complex survey structures are preserved and accurately represented.