Team : NIRVANA

Problem Statement

PS -17

Business Contract Validation

To classify content within the Contract Clauses and to determine deviations from Template and highlight them.

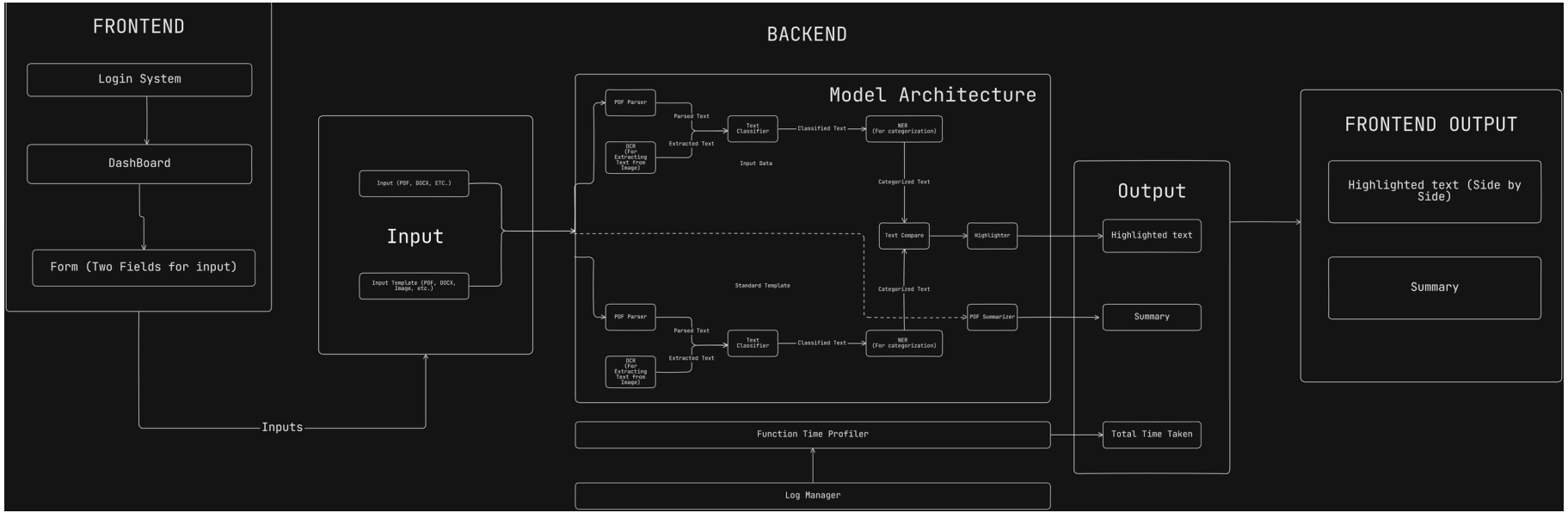
Unique Idea Brief (Solution)

Business contracts are complex legal documents with structured content. The Business Contract Validator Website enhances the contract review and validation process by utilizing Natural Language Processing (NLP) to extract key entities from uploaded PDFs, such as parties' names, agreement date, amount, and document type. It compares this extracted data against a predefined template to identify discrepancies and missing elements, generating a summary that highlights key points and potential issues. This approach streamlines the contract analysis process, improving efficiency, accuracy, and consistency with a user-friendly interface and robust backend technologies.

Features Offered

- Text Extraction from PDFs
- PDF-Parser
- Named Entity Recognition (NER)
- Text Classification
- Entity Highlighting
- Text Comparison
- Text Summarization
- User-Friendly Interface

Process flow

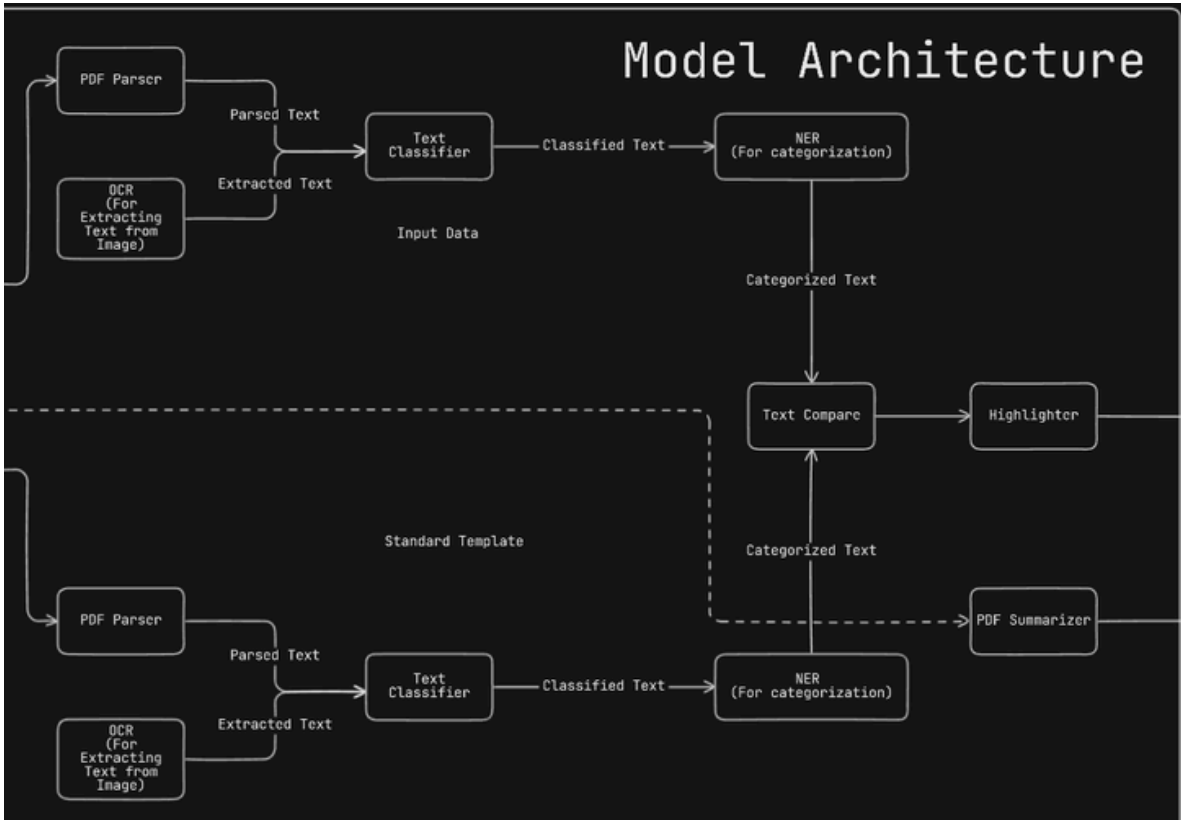


- *Parse Business Contracts* : Extract and identify the structured content from business contracts, including clauses and sub-clauses.

- *Extract Entities* : Assign the extracted content to their respective clauses and sub- clauses.

- *Determine Deviations* : Compare the parsed contract content with a given template. Highlight any deviations from the template.

Architecture Diagram



Technologies used

Frontend: 

Backend: 

Model: 

Mentor : Abhishek Raj

Team members and contribution:

1. *Anisha Raj* :

Worked on the Frontend development using React and Next.js along with responsive, user-friendly interfaces, reusable components, and ensured smooth integration with backend services.

2. *Himanshu Shekhar Nayak* :

Worked on the Machine Learning model used for Text comparison, training algorithms capable of comparing and analyzing textual data extracted from contracts.

3. *Adarsh Kumar* **:**

Developed the Named Entity Recognition (NER) model, which automatically identifies and highlights key entities in contract texts, and also created the summarizer model to generate concise summaries of lengthy contracts for quick understanding. In addition, implemented and maintained the backend infrastructure for the application, and prepared the compared model to highlight differences between two contracts.

4. *Prateek Sahoo* **:**

Utilized Streamlit to integrate the models for Named Entity Recognition (NER) and Text compare into Web applications that allows uploading of PDF contracts which are then processed by the corresponding Machine Learning models.

Conclusion

The Business Contract Validator Website leverages advanced NLP and machine learning to automate contract review and validation. By extracting key entities, classifying content into clauses, and comparing against templates, it identifies discrepancies and missing elements. This system enhances the efficiency, accuracy, and consistency of contract analysis, providing users with a streamlined, user-friendly interface and robust backend technologies for reliable legal document management.

Thankyou

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