# Business Requirement Analyzer

Presented by Prerna Kumari

# The Challenge of Manual Analysis

Business requirement analysis in software development is often manual, leading to significant challenges:

### Time-Consuming

Manual processes cause delays in project timelines.

### Error-Prone

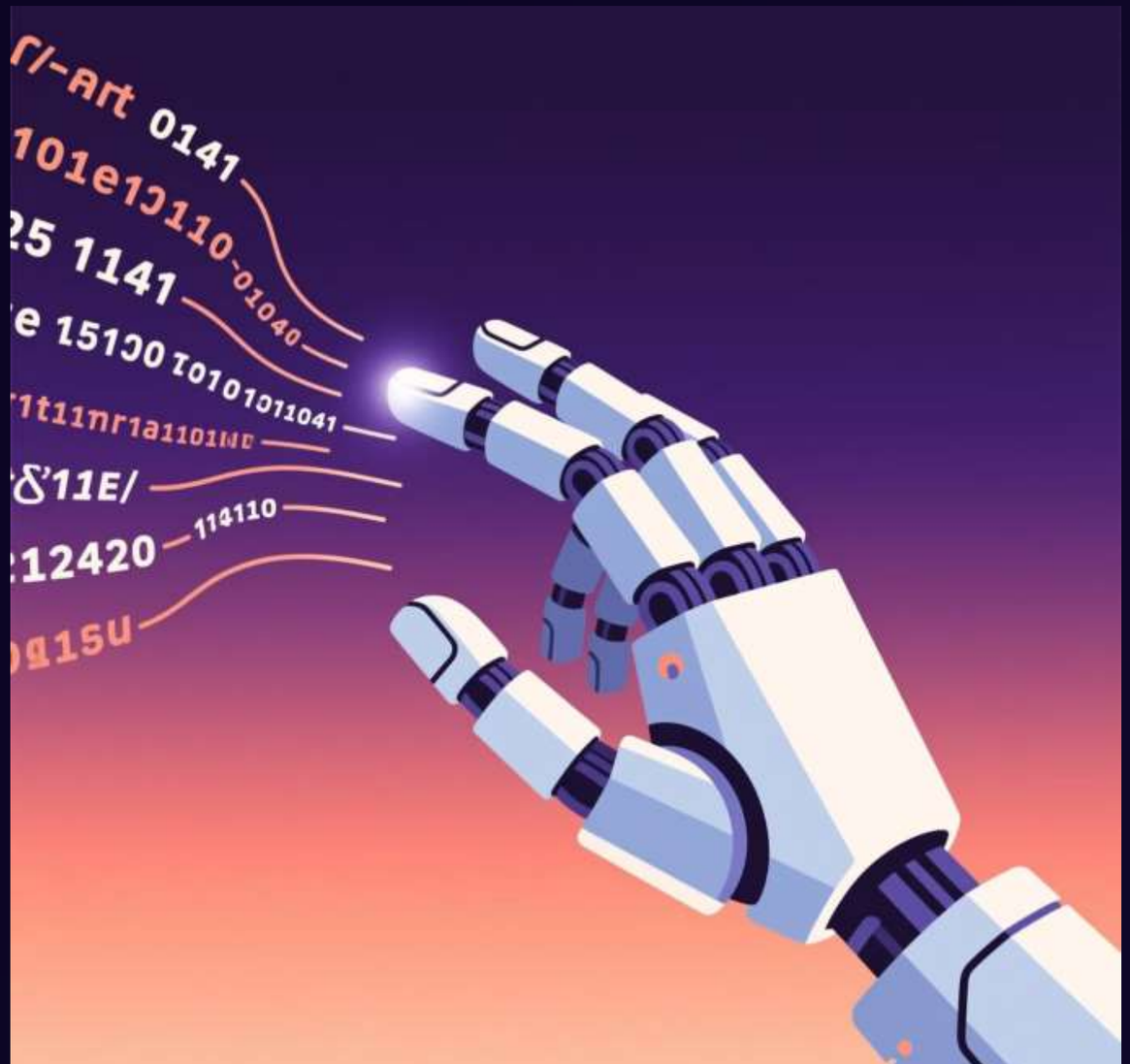
High potential for inconsistencies and ambiguities.

### Scalability Issues

Difficult to manage large-scale projects effectively.

# Automating Requirements with NLP

Our solution is an automated tool leveraging Natural Language Processing (NLP) to streamline business requirement analysis.



## Faster Analysis

Automates categorization and keyword extraction.

## Improved Consistency

Reduces human error and ensures uniformity.

## Enhanced Traceability

Provides clear links between requirements.

# NLP's Role: Classification & Extraction

NLP automates key tasks like requirement classification and keyword extraction. This project primarily uses a rule-based approach for simplicity and efficiency.

## Requirement Classification

Categorizes requirements based on predefined keywords.

## Keyword Extraction

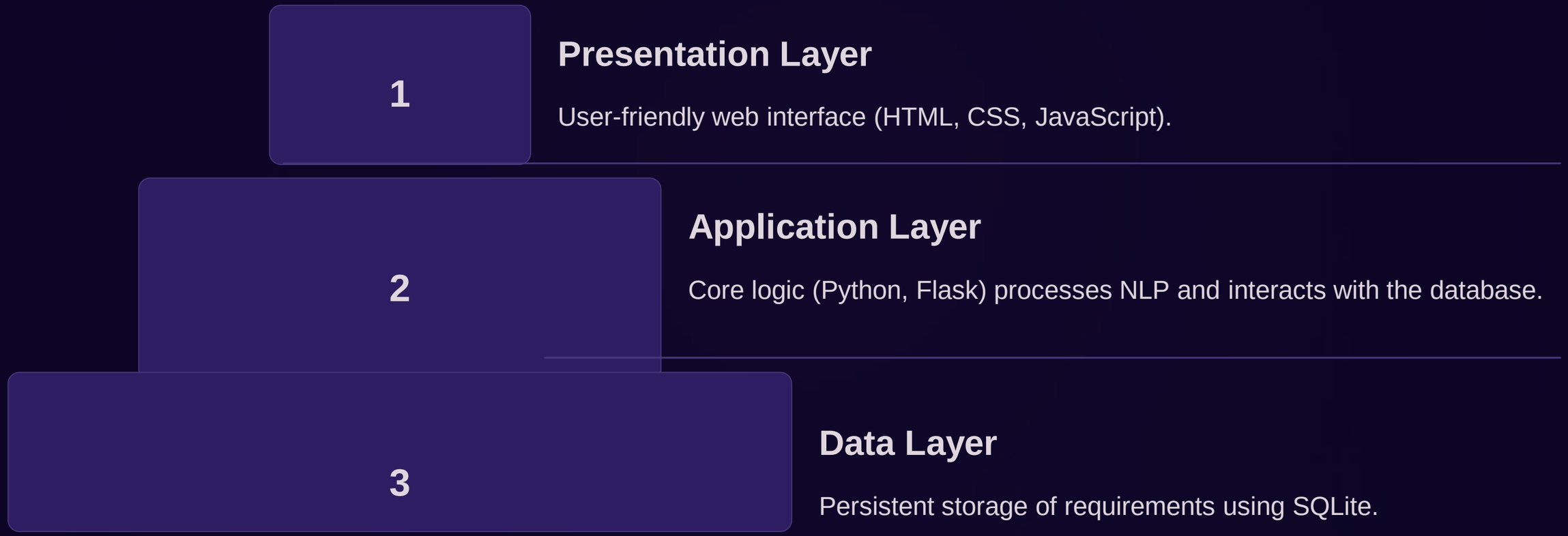
Identifies important terms for summarisation.

## Future: Machine Learning

Potential for more advanced and accurate analysis.

# System Architecture: Three Layers

The system follows a client-server model, structured into three distinct layers for robust functionality.




## Presentation Layer

User-friendly web interface (HTML, CSS, JavaScript).

## Application Layer

Core logic (Python, Flask) processes NLP and interacts with the database.

## Data Layer

Persistent storage of requirements using SQLite.

# Core Logic & Database Design

A simple SQLite database stores requirements, categorised using keyword matching. Keyword extraction uses spaCy's part-of-speech tagging.

## Database Fields

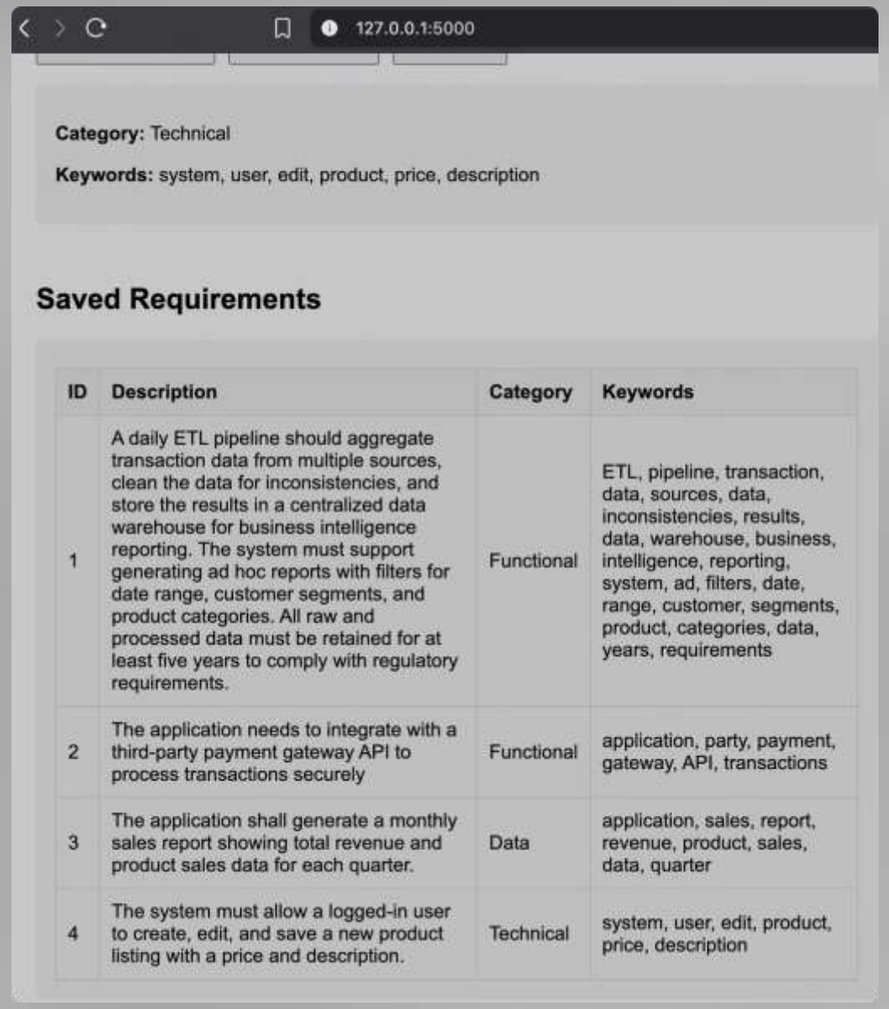
- Raw text
- Category
- Keywords

## Categorisation Example

Terms like "feature" or "process" classify a requirement as "Functional."

## Keyword Extraction

spaCy identifies important nouns and proper nouns for summarisation.




# Intuitive Web Interface

The web interface enables users to input, analyse, and save requirement descriptions. Results are displayed instantly, with options to view all saved requirements.

## Input & Analyse

Users can easily submit requirement descriptions.

## Instant Display

Categorised results and extracted keywords appear immediately.

## Data Management

View all saved requirements or clear data as needed.

# Future Enhancements & Conclusion

This project provides a strong foundation, with potential for significant future improvements.

## Key Future Work

- Machine learning for accuracy.
- Semantic understanding (word embeddings).
- Scalable databases (PostgreSQL/MySQL).
- Richer summaries and integration APIs.

## Conclusion

The Business Requirement Analyzer automates initial analysis, boosting speed and consistency. While current limitations exist, it forms a solid base for future enhancements.

# Thank You

Prerna Kumari