



PENDRAGON

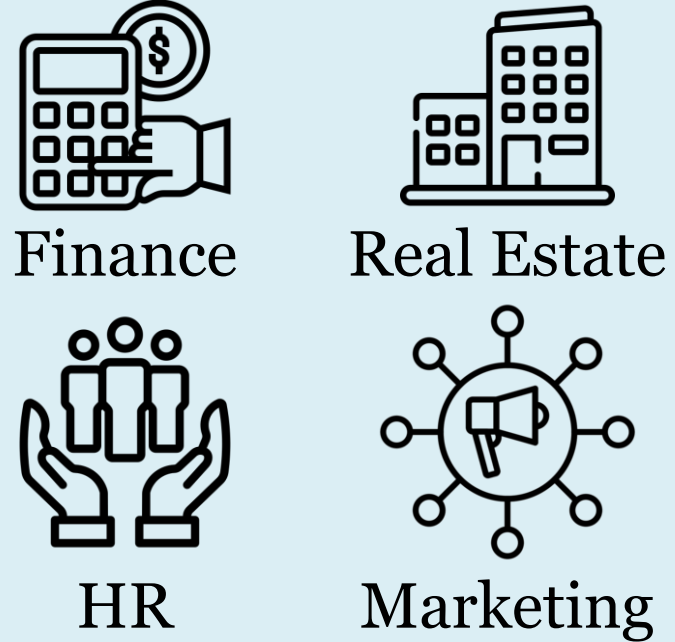
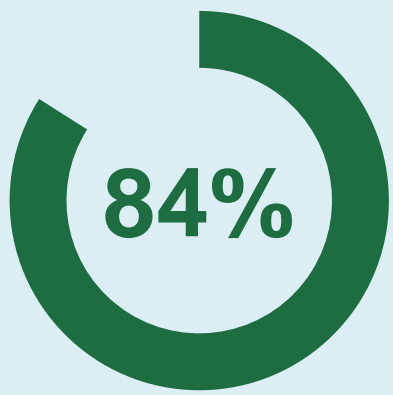
Parsing Excel Notebooks – Dynamic Retrieval-Augmented Generation with Object Notation



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Project Background

Excel in Industry



84%
Of Professionals Use Excel Daily

Excel is widely used due to its versatility.

- Data Analysis
- Financial Tools
- Data Management
- Visualization Tools

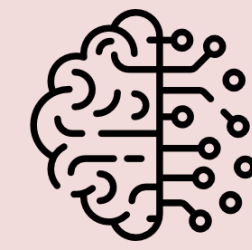
Real Estate Deal Evaluation

Feasibility Study model using Excel

- 1) Input**
Assumptions such as rent roll information.
- 2) Update**
Revise assumptions based on project's progress.
- 3) Present**
Generate report with statistics and charts.
- 4) Review**
Subject to audit, and may be reused for similar projects.

Key Terms

Large Language Models (LLM)



AI systems capable of understanding and generating human-like text, performing tasks such as coding.

Retrieval-Augmented Generation (RAG)

Technique that retrieves information from a vector store to be fed into the LLM to enhance its response accuracy.



Real Estate Feasibility Study (FS)



A process to simulate and evaluate a real estate deal viability and potential returns, often performed using Excel.

Pain Points

- Input requires manual processing of rent rolls, which is time-consuming and error-prone.
- With multiple asset types using different assumptions, hard to familiarize with all.
- Complexity of FS Excel models makes them difficult to comprehend during onboarding.

Objectives

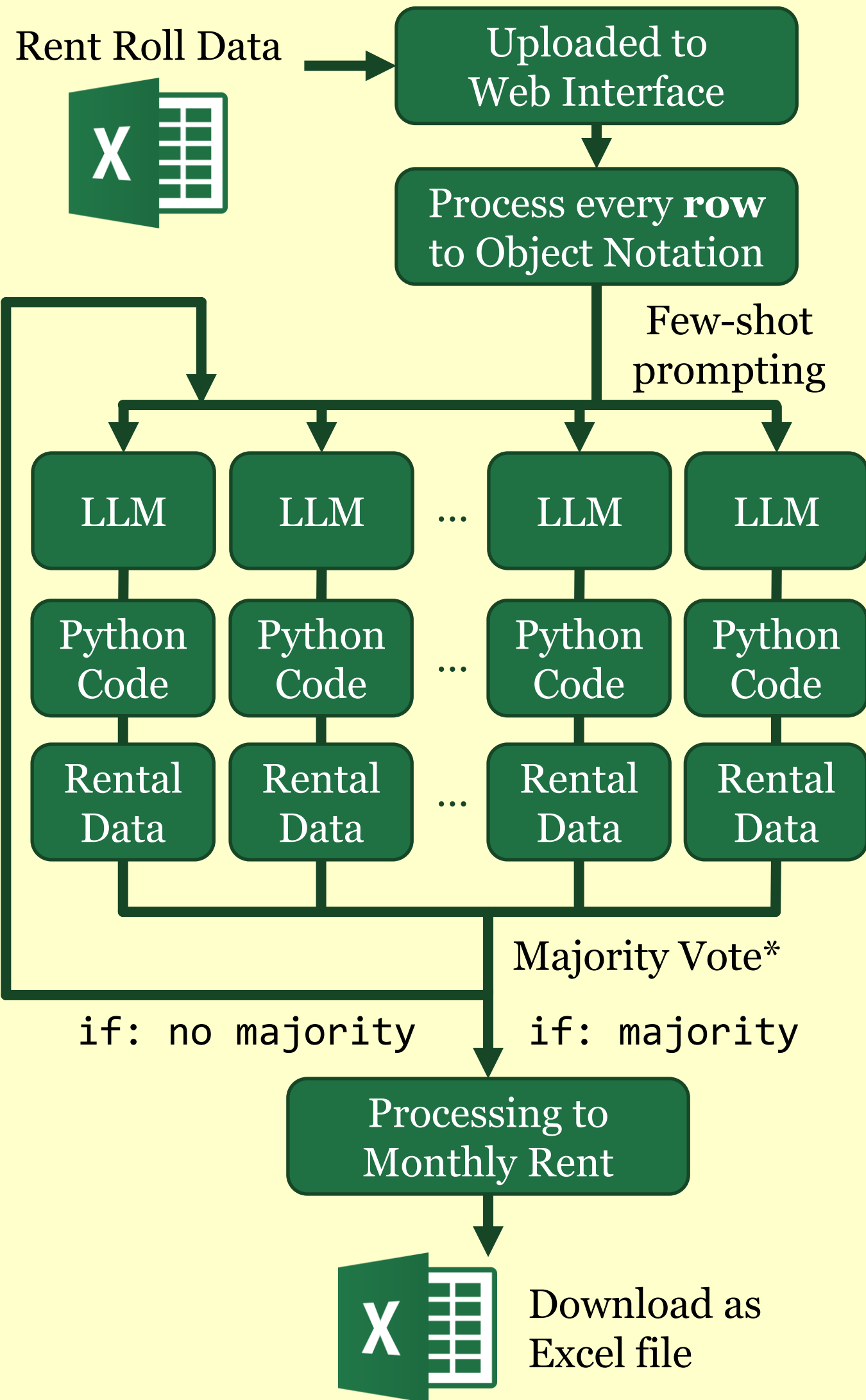
Phase 1
Rent Roll AI (3 months)
Automate Rent Roll Processing using LLM

Phase 2
FS Excel AI (9 months)
Dynamic Interaction with Excel using LLM

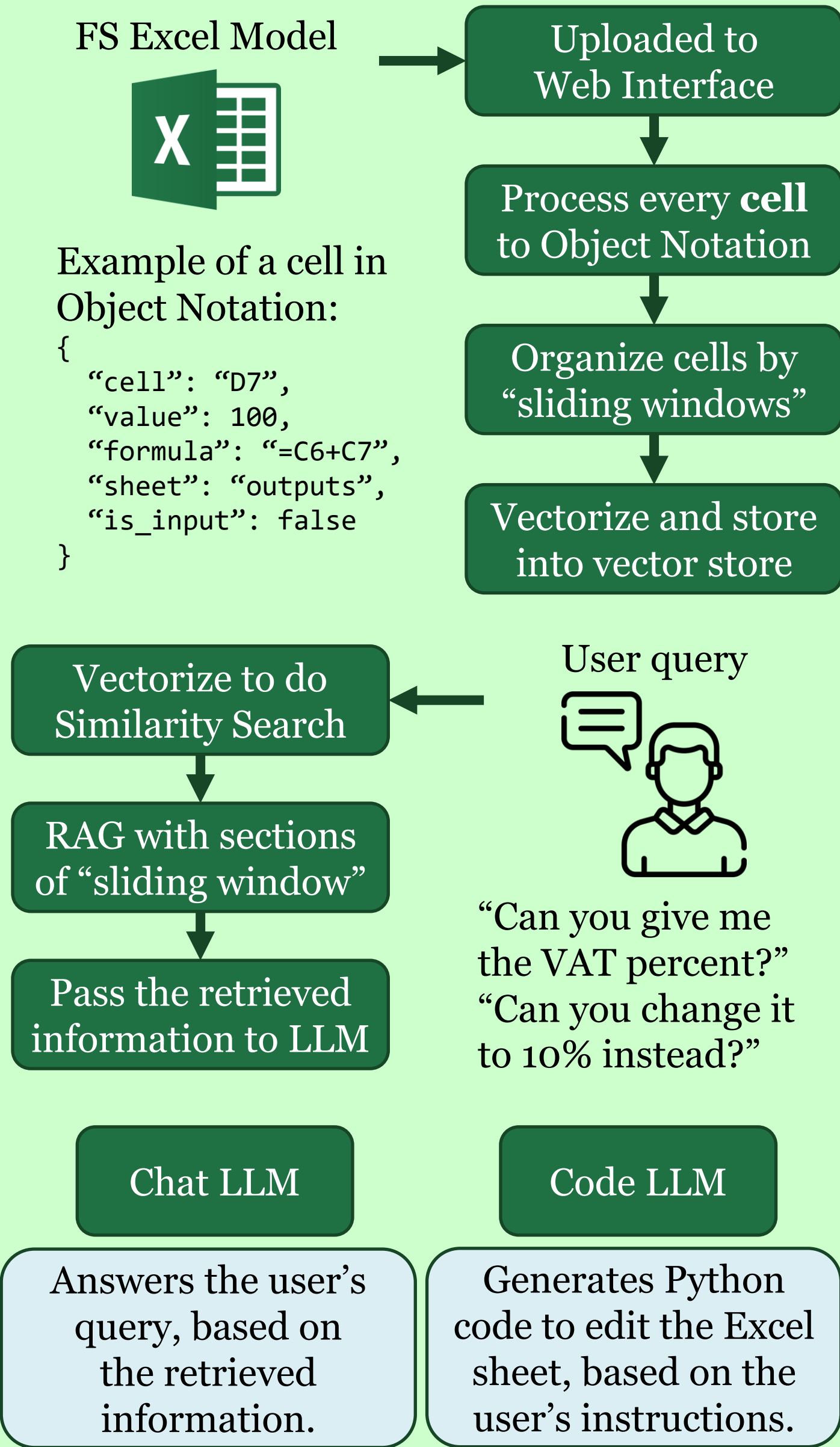
- Reduce Human Errors
- Increase Data Accuracy
- Easy to Understand
- Faster Processing Time
- Eliminate Manual Tasks
- Boost Work Efficiency

Solution Architecture

Rent Roll AI



FS Excel AI



Technical Stack

	LLM GPT-4o	Reason Best Quality
	Web Interface Streamlit	Reason Rapid Development
	Vector Store FAISS	Reason Fast Performance
Cloud Service – Azure		
	Hosting Authentication CI/CD	Azure App Service Azure Entra ID Azure DevOps

Business Value

Rent Roll AI

- Deployed and go-live within **3 Months**
- 95%↑** Accuracy of rent roll parsing
- Time saved using rent roll AI † **>50%**

FS Excel AI

The full integrated solution is estimated to save over **50% of the total time** † needed for real estate deal evaluation. This allows employees to focus on **higher-value tasks**, generating more value.

† Disclaimer: Figures cited are blocked for confidentiality reasons.