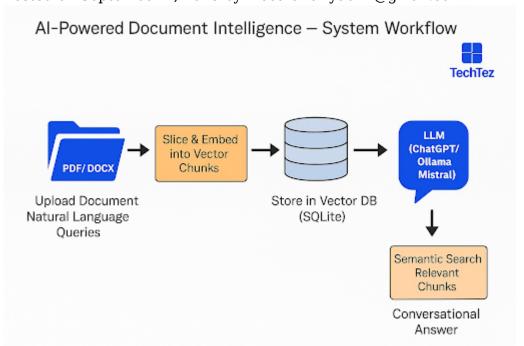


# **Conversational Chatbot Powered by Document Intelligence**

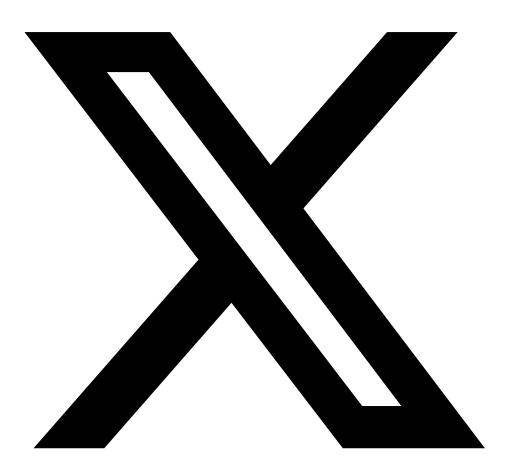
Posted on September 7, 2025 by meetkaneriya011@gmail.com



#### Case Study



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# **Conversational Chatbot Powered by Document Intelligence**

## Client

A mid-sized SaaS company specializing in HR and payroll management faced a growing barrier: their support and operations teams struggled to quickly extract key information from a maze of internal documents: policy PDFs, compliance guides, and technical manuals. Manual searching and frequent escalations to subject matter experts slowed down resolutions and increased workloads.

TechTez was brought in to develop an AI-powered chatbot that could extract context-aware answers from unstructured documents using natural language. The solution now powers internal support workflows across multiple departments.

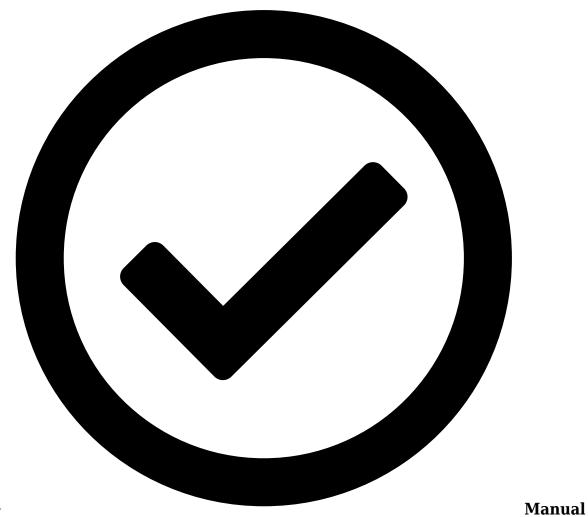
#### The Challenge

Enterprise teams are often buried under static, unstructured documents in a variety of formats (PDF, DOCX, etc.). Retrieving accurate, contextual answers is slow, labor-intensive, and not scalable, especially when answers are scattered across numerous files.

Key obstacles included:



**Search:** Existing document systems lacked the intelligence for natural, context-driven queries.



**Reviews:** Employees wasted valuable hours scanning lengthy documents.



**Disconnected** Answers: Traditional tools made it difficult to link user questions with the right portions of content.



Limited

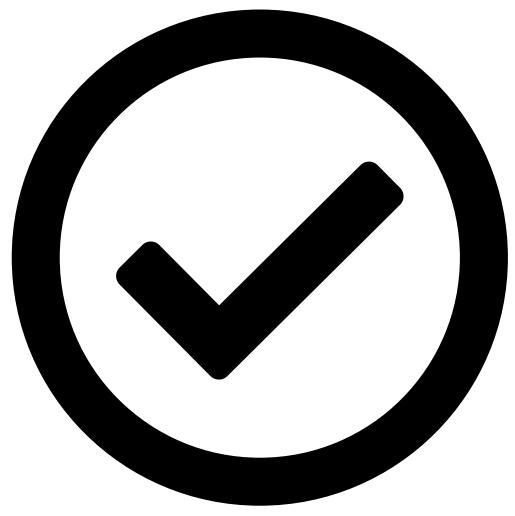
Accessibility: No intuitive interface for asking plain-language questions; only techsavvy users could dig deep.

#### **Our Strategy**

TechTez developed an advanced Conversational AI Chatbot using Retrieval-Augmented Generation (RAG) to transform how teams interact with company knowledge.

#### **Architecture & Workflow**

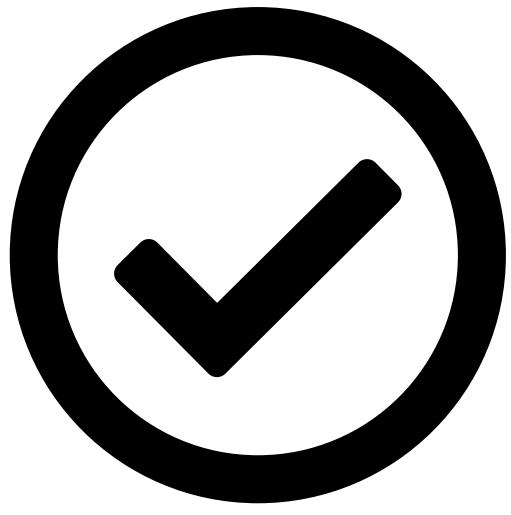
# **Solution Highlights:**



**Document** Ingestion & Structuring: All internal documents (PDF, DOCX) are automatically divided into logical, searchable blocks for optimal retrieval.



Vectorization & Storage: Each content block is embedded and stored in a lightweight vector database (SQLite) for high-speed, accurate semantic search.



**Semantic** Matching: When users ask a question, the chatbot semantically matches the query to the most relevant sections of content—regardless of wording.



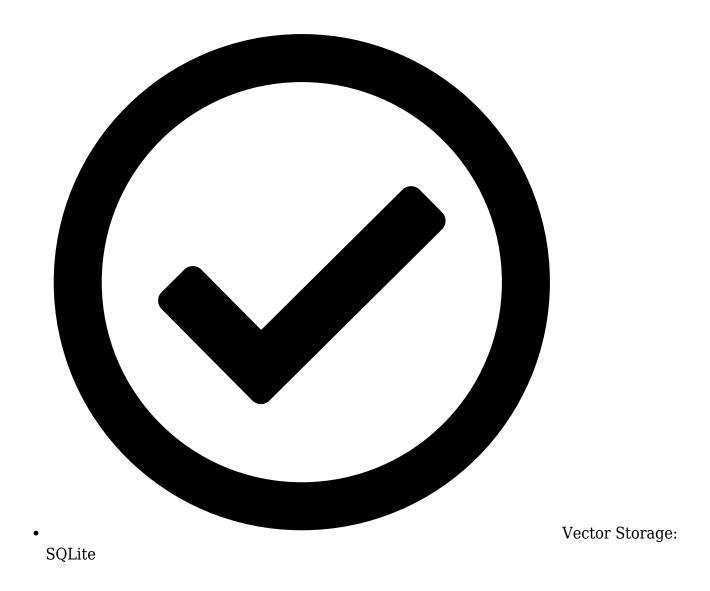
**AI-Powered** 

Answer Generation: Relevant sections are passed to a Large Language Model (ChatGPT or Ollama Mistral) to generate clear, human-like responses.

# **Technology Architecture**



LLMs: ChatGPT,

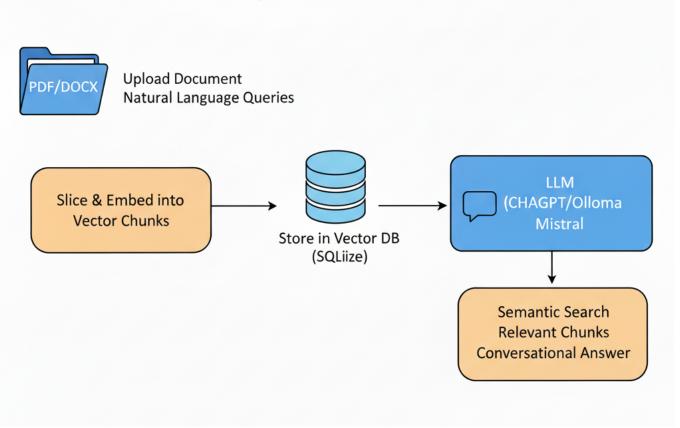




Python, LangChain, Retrieval-Augmented Generation (RAG)

Programming:

# Al-Powered Document Intelligence -System Workflow



# From Frustration to Conversation – Impact of the AI Chatbot

#### **Before**

- Manual document scanning
- Static keyword search
- Hard for non-nontechninicall users
- X Slow response time time
- No semantic context

#### **After**

- Conversational querying
- LLM-backed context answers
- Fast & dynamic info access
- Minimal manual effort
- Works across formats

### **Results & Impact**



conversational access to any internal document

Instant,



reduced from minutes to seconds

Search time



No need for manual tagging or indexing



• User-friendly: usable by non-technical staff



support (PDF, DOCX, etc.)

Multi-format

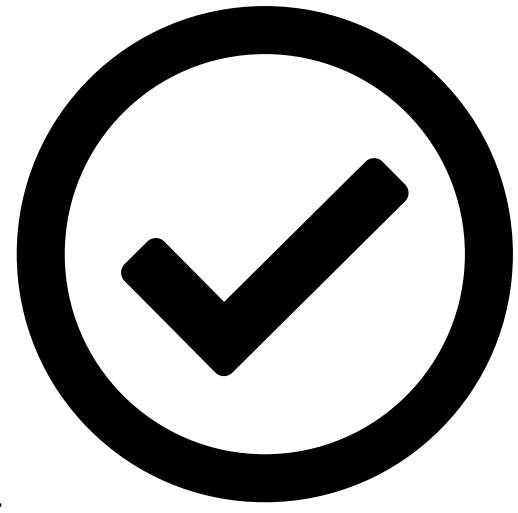


Scalable, model-

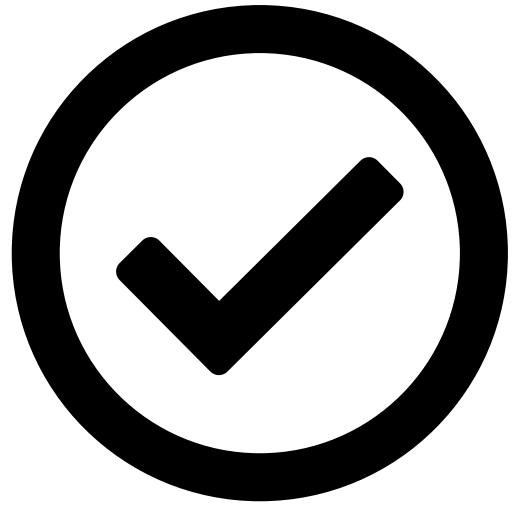
### **Outcomes:**



reduction in average document lookup time within the first two weeks

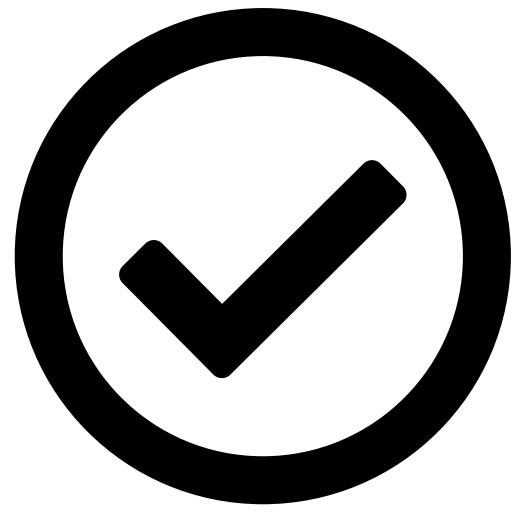


**30%** decrease in support case resolution times



in escalations to SMEs, freeing experts for higher-value work

Significant drop



response accuracy, reducing follow-up queries

Improved

## **Our Thought Leadership Guides**

• Case Study

# Load Testing vs. Stress Testing: Key Differences Explained

It's launch day. Thousands of users flood your app. Cart values are up. Engagement is spiking. Then





#### Load

Goal: steady performance at expected traffic Range: normal to peak Metrics response time, throughput, error ate Outcomes capacity planning SLA verification



#### **Stress**



find breaking point & recovery

Range: beyond peak until failure

Metrics degradation, time-to-failure

Outcomes resilience, failover tuning



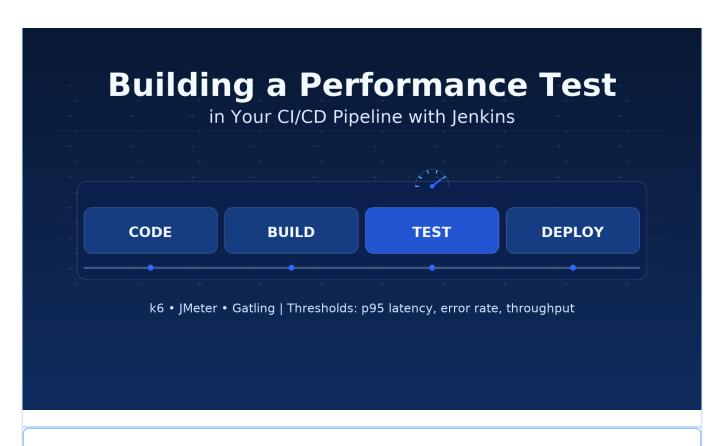




Case Study

#### Building a Performance Test in Your CI/CD Pipeline with <u>Jenkins</u>

In the world of rapid software delivery, releasing fast is no longer enough—releasing fast...



• Case Study

### Conversational Chatbot Powered by Document Intelligence

A mid-sized SaaS company specializing in HR and payroll management faced a growing barrier:

