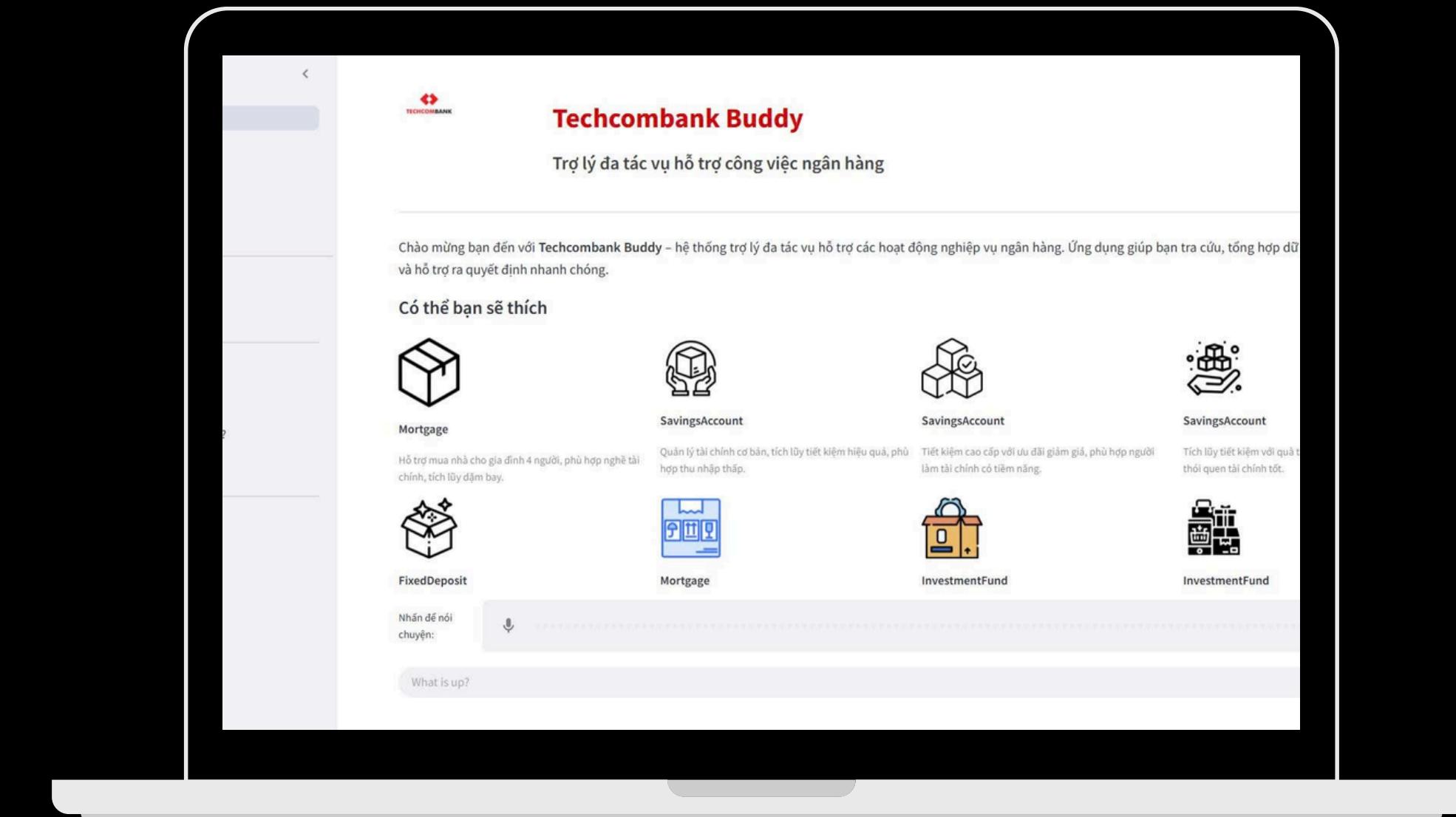
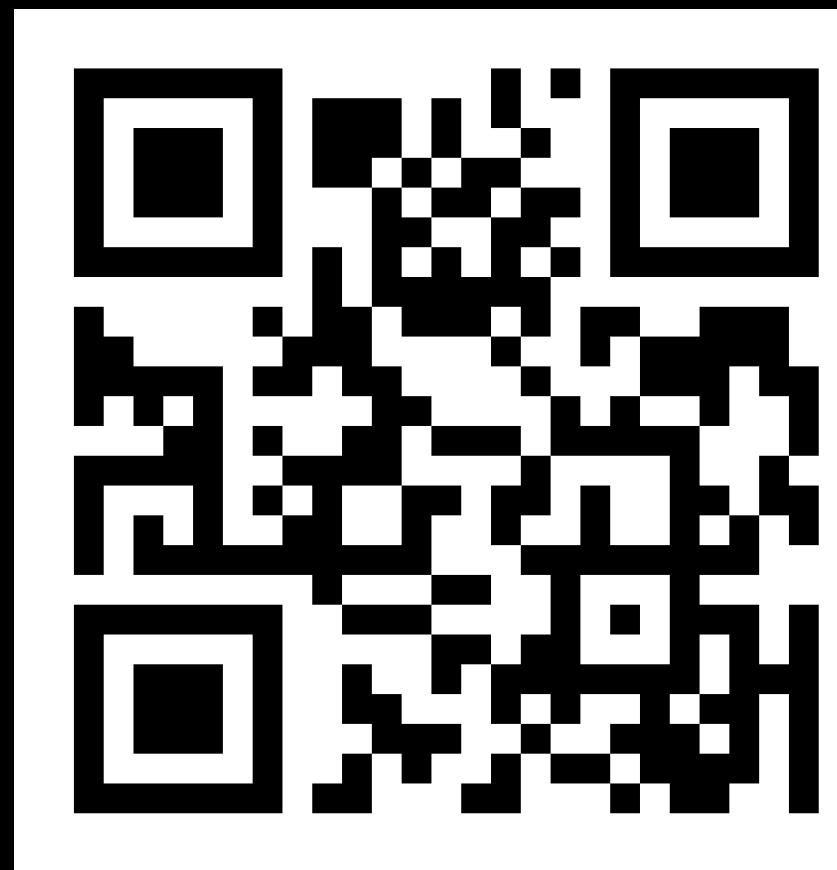


# TECHCOMBANK BUDDY

"TECHCOMBANK BUDDY" Multi-Agent assistant that enhance user experience and provide personalized, data-driven recommendations.



# PROTOTYPE FOR TESTING



**TECHCOMBANK BUDDY**  
<http://54.254.153.200:8501/>

Một số câu hỏi mẫu:

- Tôi muốn đăng ký thẻ tín dụng
- Hãy gợi ý cho tôi một số chương trình về vay vốn
- Chuyển cho Châu 2 triệu rưỡi
- Tháng 5 tôi đã chuyển cho bà Mai mấy tiền, đó là những khoản nào?

# Impact of Poor User Experience on Engagement and Accessibility



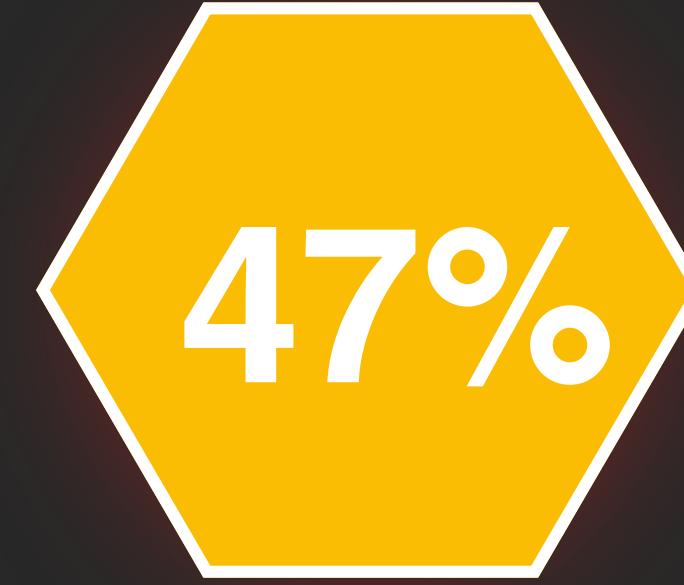
**Users won't return to an app or website after a poor UX experience**

*Amazon Web Services*



**Customers expect personalized digital banking experiences, and 76% feel frustrated without it**

*MX.com*



**People with disabilities face difficulties in administrative procedures**

*VnEconomy*

# CUSTOMERS SEGMENTATION

📱 Gen Z (<25): The Digital Natives

Expect Seamless AI; Value Authenticity.

💡 Millennials (25-40): The Tech-Savvy Optimizers

Demand Personalized Efficiency & Digital Solutions.

⚖️ Gen X (41-55): The Pragmatic Balancers

Prioritize Reliability; Appreciate Human Support.

🛡️ Seniors (>56): The Cautious Adopters

Need Simple, Secure Tech; Trust is Key.



## Core Accessibility Needs



STT & TTS(Essential).



Intuitive Interfaces(Critical).



Assistive Tech Ready(Fundamental).



Adaptable Support(Valued).

**Note: Analyzing based on age**

**Note: Analyzing based on disabled people**

# OUR SOLUTION



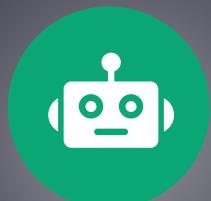
## AI Transaction Agent

Transaction insights history & manage personal spending



## AI Navigate Support

Navigation app feature access with natural language



## AI Assistant

Personalized user support & guidance



## AI Personalized Recommendations

Data-driven products/services recommendations & personalized experiences

ALL-IN-ONE AI SOLUTION

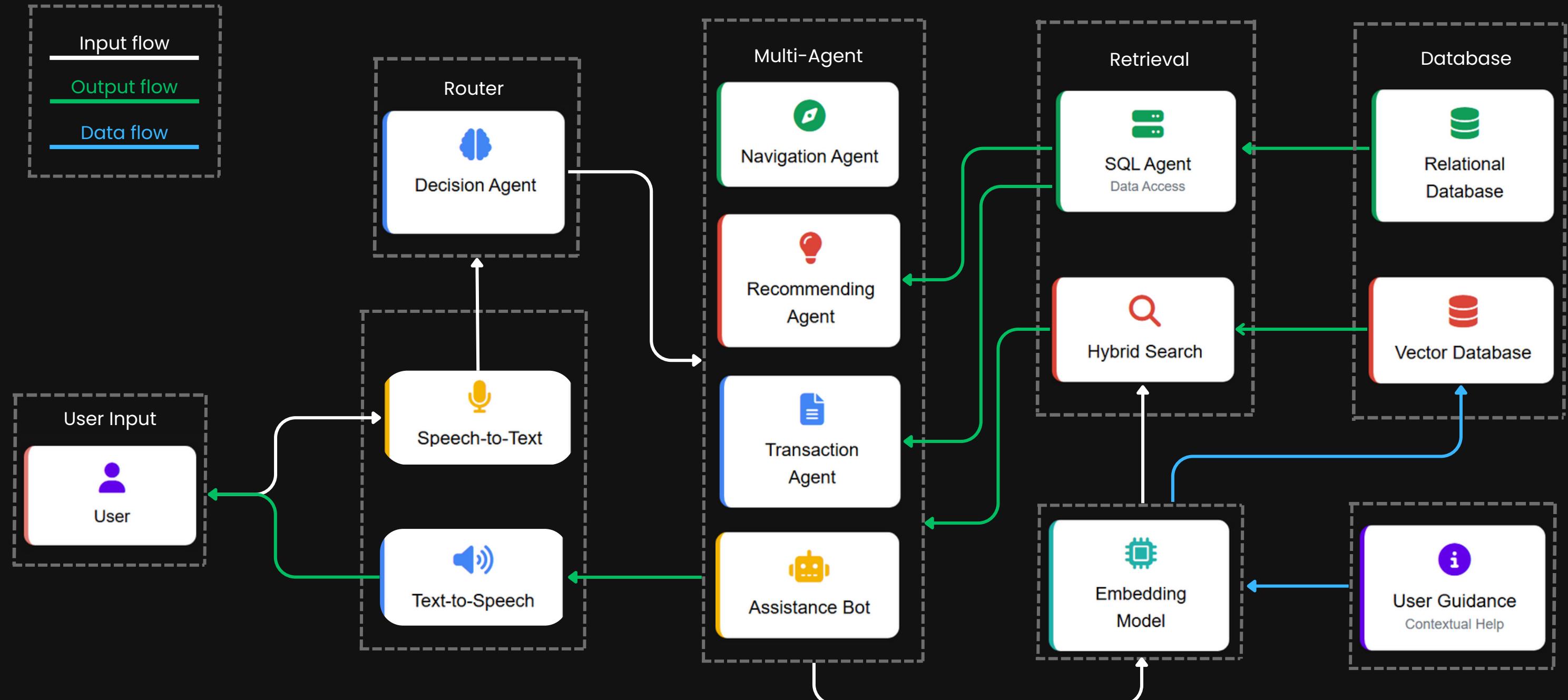
# TECHCOMBANK BUDDY



**One AI System  
Include Four Powerful AI Features**

# How does It work?

## Solution Flow



## Technology

### Speech Processing



PhoWhisper Mms-tts-vie



### AI Framework



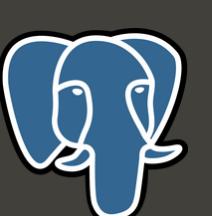
Ollama LangChain



### Database



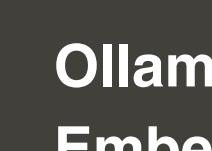
FAISS MongoDB PostgreSQL



### AI model

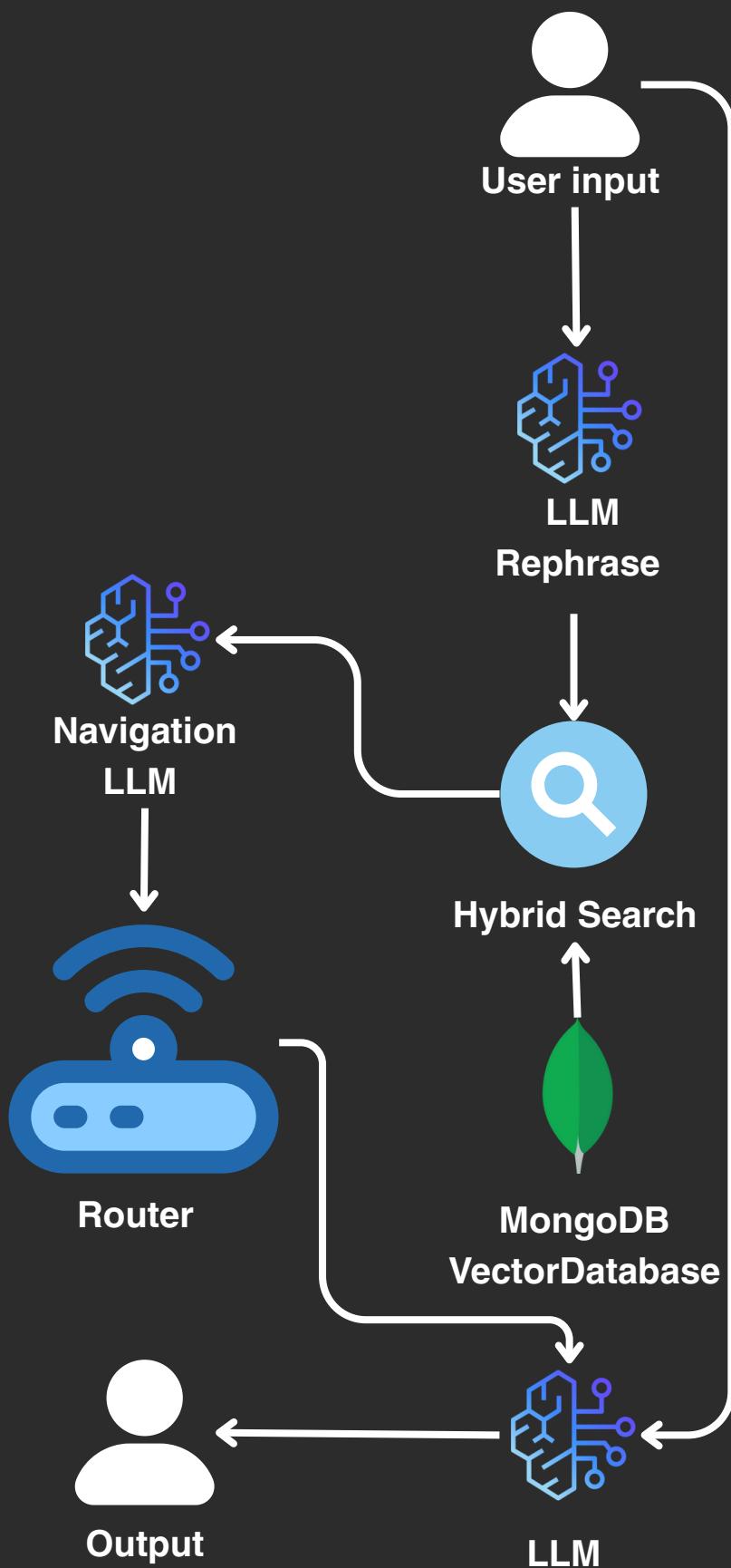


Large Language model Hugging Face Ollama Embed

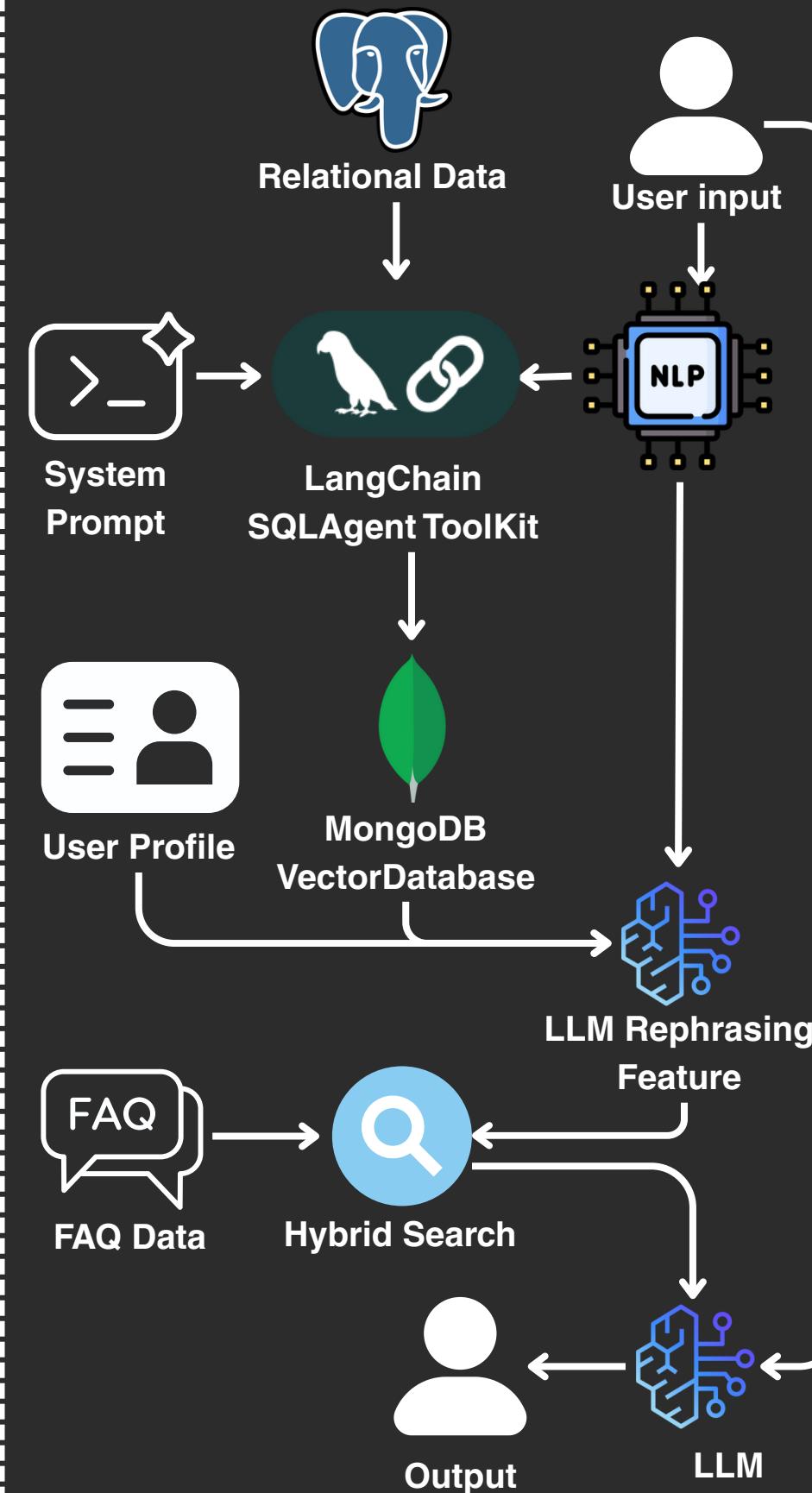


# Multi-Agent System

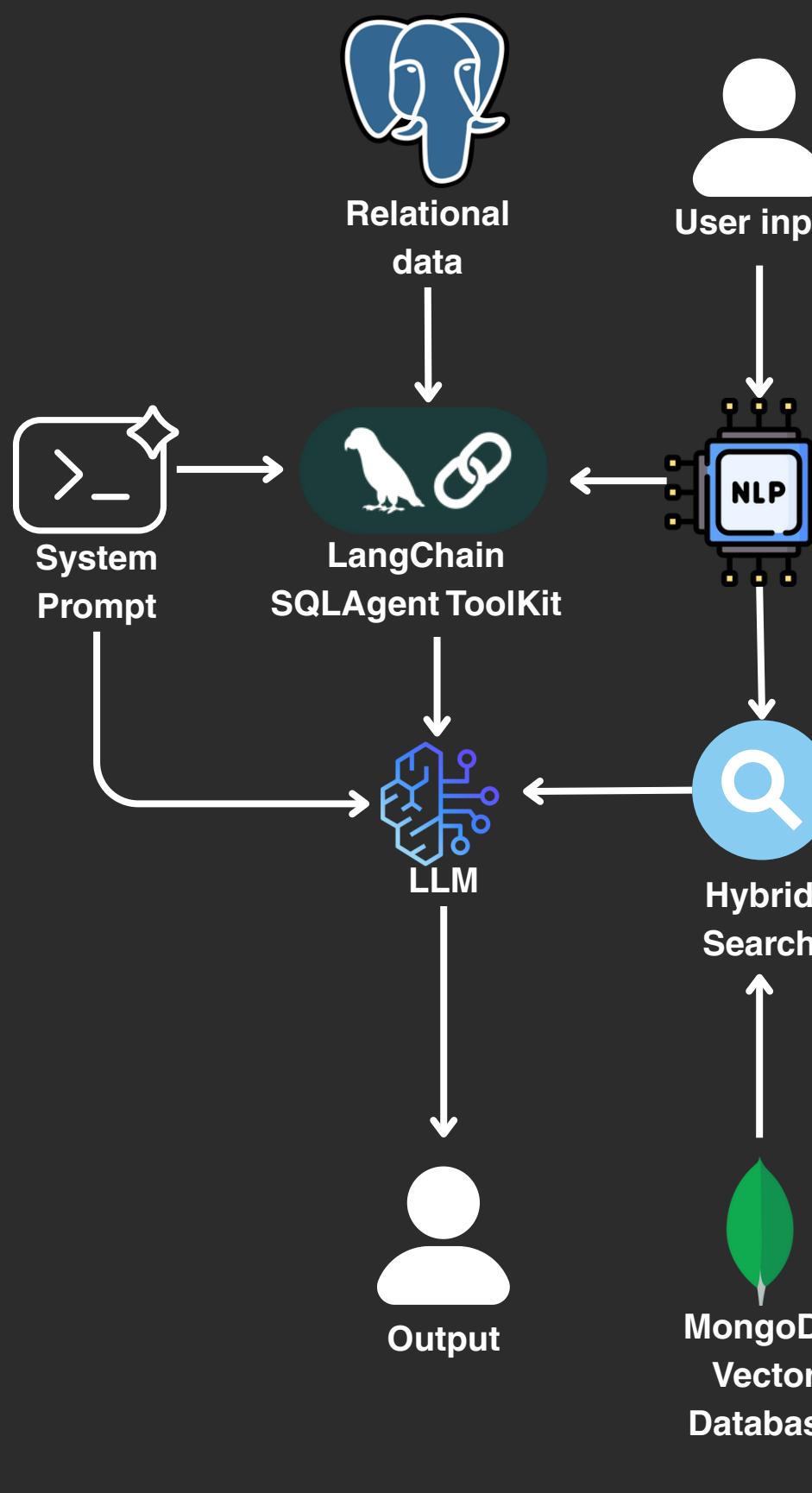
## Navigation Agent



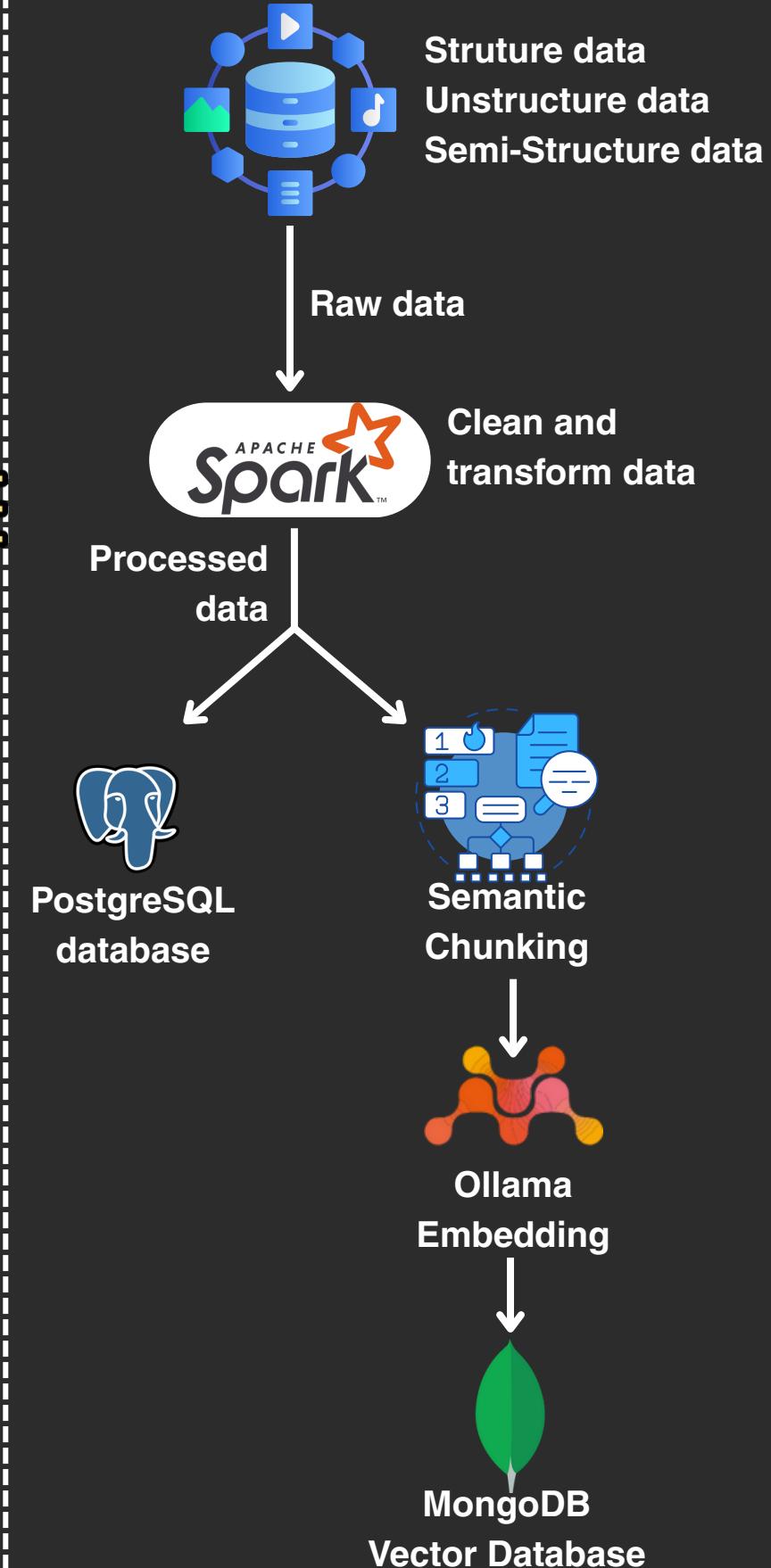
## Recommending Agent



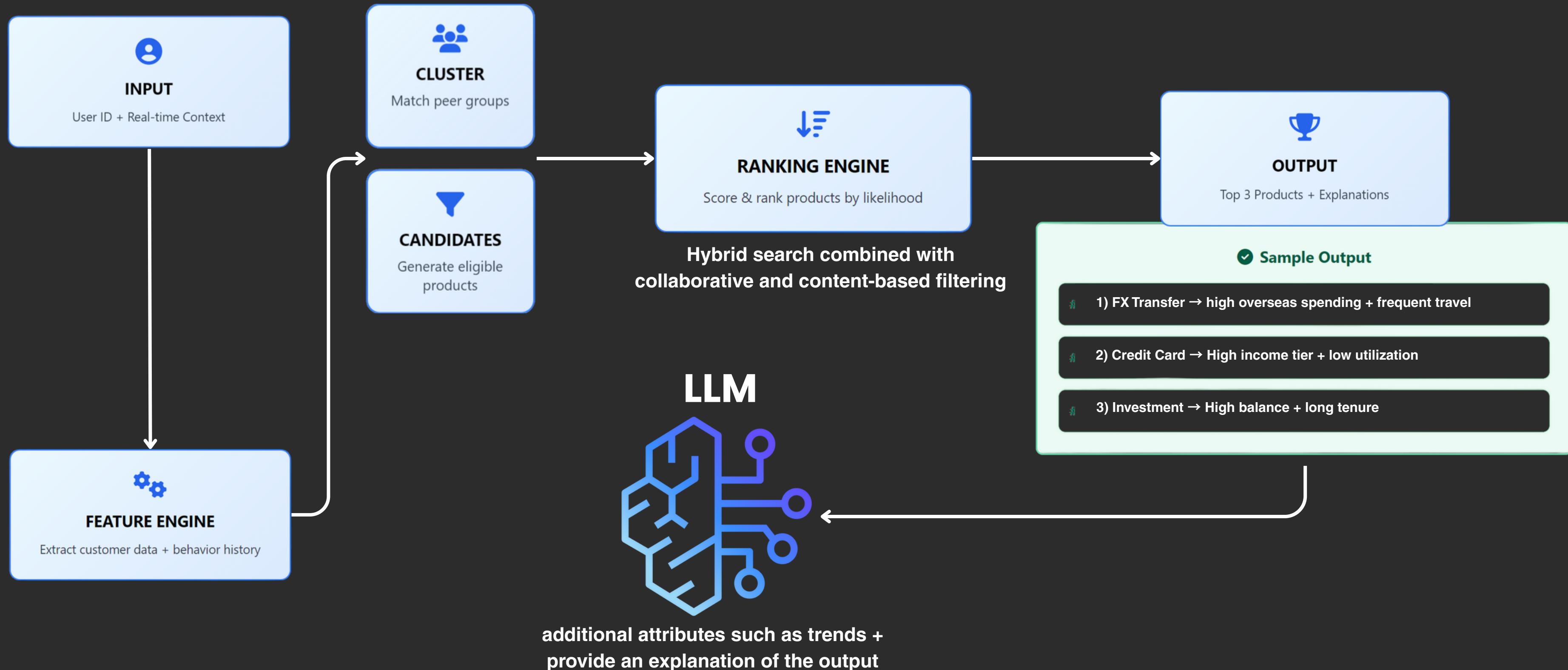
## Transaction Agent



## Data Flow



# Recommendation automation



Dataset: : customers, products, and adoptions

# Benefits for Customers



Hyper-Personalized Experience



Time Saving



Discover Financial Opportunities



Enhanced Understanding



Feeling Valued

# Benefits for Techcombank



**Increase  
Conversion Rate  
and Revenue**



**Optimize Cross-  
selling & Up-selling**



**Increase Customer  
Lifetime Value (CLV)**



**Enhance Customer  
Satisfaction &  
Loyalty**



**Optimize Marketing  
Costs**



**Data Collection and  
Deep Insights**



**Create Sustainable  
Competitive  
Advantage**



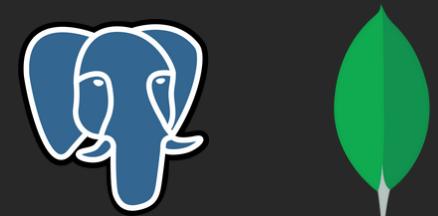
**Improve Product  
Development**

# Development Roadmap

06/2025

## Demo

- Set up PostgreSQL & MongoDB



- Data Processing with Spark



- AI Voice Support: with PhoWhisper, Hugging Face Model & LLM Model



07/2025

## Official Launch

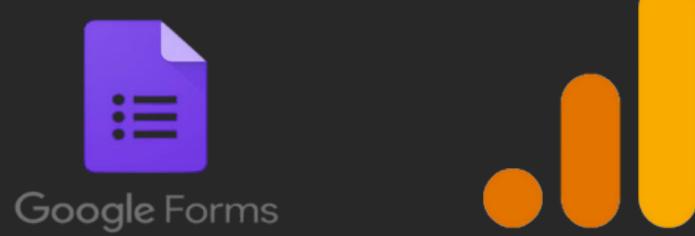
- AI Assistant: Transactions Based Chatbot & RAG with LangChain and Llama Model



- AI Personalized Recommendations with Tensorflow & Llama Model



- Release Demo & Feedback Collection through Google Form and Google Analytics



10/2025+

## Scaling Phase

- Update RAG Pipeline: Semantic Chunking & Hybrid Search



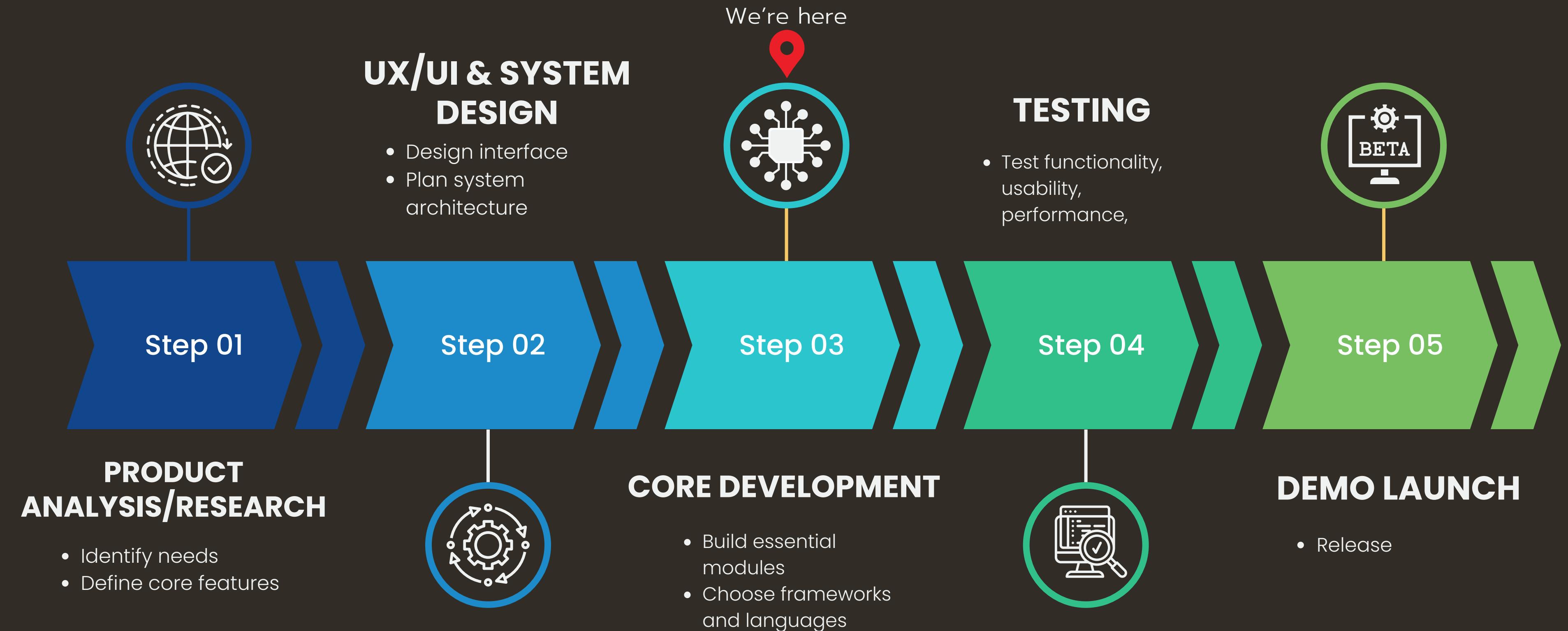
- Augmented Features for Agent: Web Search, Real-Time & Streaming Retrieval



- Improve AI Personalized Recommendations & AI Voice support

- Continuously update and optimize

# PRODUCT DEVELOPMENT PROCESS



# TECHCOMBANK BUDDY

A Multi-Agent System that enhance user experience and provide personalized, data- driven recommendations.

TECHCOMBANK X HUST  
Hack <CX> Together 2025

Hack it Smart. Build it Fast.

## DATA FLOW



Trịnh Minh Châu - leader/AI Engineer  
National Champion - GDGOC 2025  
Top 10 Denso Hackathon



Ngô Đức Mạnh - Backend dev  
National Champion - GDGOC 2025  
Scholarship of FPT University  
Scholarship of Nitori 2024



Lê Nguyễn Thanh Bình - Frontend dev/presenter  
National Champion - GDGOC 2025  
Scholarship of FPT University  
Top 7 FinSpark



Nguyễn Ngọc Hiếu - Fullstack dev  
National Champion - GDGOC 2025  
Scholarship of FPT University



Trần Minh Nhật - Devops  
AI Engineer at ISTS(Bank Credit Scoring), Visssoft, LexEngine