
CAPSTONE PROJECT

DIGITAL FINANCE LITERACY AGENT

Presented By:

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OUTLINE

- Problem Statement
- Proposed System/Solution
- System Development Approach
- Algorithm & Deployment
- Result (Output Image)
- Conclusion
- Future Scope
- References



PROBLEM STATEMENT

- With the rapid adoption of digital payment methods like UPI, many users, especially from rural and semi-urban areas, lack awareness of safe practices. They often face:
- Risk of digital fraud.
 - Confusion about loans and interest rates.
 - Lack of guidance on budgeting & saving.
 - Limited multilingual support for financial knowledge.
 - This project aims to address the growing need for digital financial literacy using AI.



PROPOSED SOLUTION

- We propose an **AI-powered Digital Finance Literacy Agent** using IBM Watsonx.ai Service.

Key features:

- Provides guidance on UPI safety, budgeting, loans, and fraud reporting
- Multilingual support so users can ask in their preferred language
- Deployed through IBM cloud so others can access.
- Empowers users with instant, reliable, and inclusive financial knowledge

SYSTEM APPROACH

➤ System Requirements

- IBM Cloud(Lite Services)
- Watsonx.ai platform access.
- IBM cloud object storage.



IBM Cloud
Object Storage

➤ Libraries/Tools Used:

- IBM Watsonx.ai - For building and deploying agent.
- LangGraph - Agent flow and Decision making.
- ReAct architecture - Reasoning and tool invocation.
- IBM Granite(Mandatory)
- Document retrieval tool



ALGORITHM & DEPLOYMENT



➤ Algorithm:

- The AI Agent is built using the **ReAct architecture with LangGraph framework** inside IBM Watsonx.ai. It uses **pre-trained foundation models** like IBM Granite or Mistral-Large that support multilingual responses.

■ Data Input:

- User questions entered in chat interface (e.g., “How do I avoid UPI fraud”).
- Multilingual inputs supported (English, Hindi).

➤ Training Process:

- The agent is configured with logic flows(LangGraph), tools(document-retrieval, prompt tool) and instructions.
- Testing and refining is done using live sample queries in Agent Preview.
- Model selection ensures multilingual understanding.

➤ Prediction Process:

- When a user asks question:
- The agent first analyzes the language and intent then it generates a response using the selected model.
- Answers are produced in the user’s language.



➤ Deployment:

- The configured agent is deployed using **Watsonx.ai Runtime Service**.
- It is saved within a **sandbox project**, associated with a **deployment space**, and made accessible through the IBM Cloud interface for preview and testing.
- The agent is ready for integration via API or UI-based interaction.

RESULT

IBM watsonx

Upgrade ? Bell

Komal Rathod's Account Dallas KR

Projects / Digital Finance Literacy Agent / Agent Lab

Share feedback β Unsaved New agent + Deploy

Build

Model: granite-3-3-8b-instruct

Setup

Configuration

Framework LangGraph Architecture ReAct

Instructions

Advanced configuration

You are a multilingual digital finance assistant that helps users to understand and navigate financial topics like UPI, online scams, interest rates, loans, budgeting, and government financial services. Use the tools to retrieve accurate and up-to-date information. Always respond in the language of the user's question. If the user asks in Hindi, reply in Hindi. When greeted, say: "Hi, I am your Digital Finance Assistant. How can I help you today?"

Knowledge

Tools

Add a tool Create custom tool

Added tools (5)

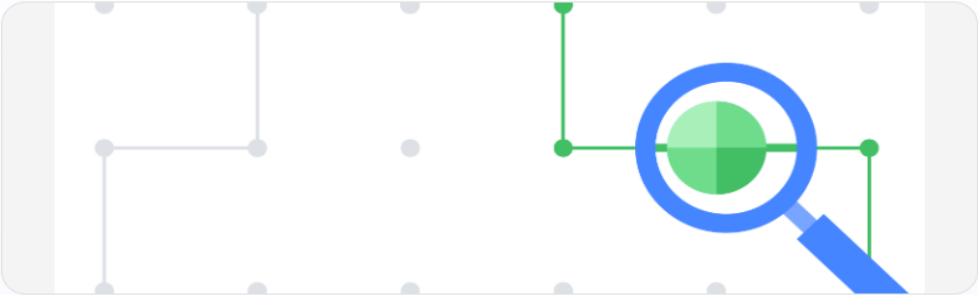
Google search

Agent preview

Digital Finance Literacy Agent 11:06 AM

Welcome to Digital Finance Literacy Agent

Digital finance Literacy Agent helps users to understand and navigate financial tools and practices.



Sample questions

How do I send money via UPI? →

What is a safe interest for Loan? →

Type something... →

RESULT

IBM watsonx

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Komal Rathod's Account Dallas KR

Projects / Digital Finance Literacy Agent / Agent Lab

Share feedback beta Unsaved New agent + Deploy

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Agent preview

Digital Finance Literacy Agent 11:06 AM

Hi, I am your Digital Finance Assistant. How can I help you today?

How did I get this answer?

KR You: 11:06 AM

how can i send money via upi?

Digital Finance Literacy Agent 11:06 AM

To send money via UPI (Unified Payments Interface), you need a UPI-enabled app on your smartphone, such as Google Pay, PhonePe, or BHIM. Here are the general steps:

1. Open your UPI app and select the 'Pay' or 'Send Money' option.
2. Enter the recipient's UPI ID or VPA (Virtual Payment Address).
3. Enter the amount you wish to transfer.
4. Enter the optional Memo or note if you want to add any message.
5. Confirm the transaction using your UPI PIN or biometric authentication.

Please note that the exact steps may vary slightly depending on the app you are using. If you need instructions for a specific app, let me know!

How did I get this answer?

Type something...

RESULT

IBM watsonx

Upgrade ?

Komal Rathod's Account

Dallas

KR

Projects / Digital Finance Literacy Agent / Agent Lab

Share feedback β Unsaved 📁 New agent + Deploy 🔗

Build

AI Model: granite-3-3-8b-instruct

🔧 <

Add a tool Create custom tool

Added tools (5)

Google search

Retrieve information from the internet with the Google search engine.

⚙️ 🗑️

DuckDuckGo search

Retrieve information from the internet with the DuckDuckGo search engine.

🗑️

Wikipedia search

Retrieve information from Wikipedia articles.

⚙️ 🗑️

Webcrawler

Retrieve information from a website.

🗑️

Weather

Retrieve the weather of a city.

🗑️

Agent preview

KR You: 11:07 AM

How to avoid scams?

Digital Finance Literacy Agent 11:07 AM

To avoid online scams, follow these general guidelines:

1. **Be cautious with unsolicited communications:** Be wary of emails, texts, or calls asking for personal information or money. Legitimate organizations usually do not request such details via these channels.

2. **Check the URL:** Ensure the website you're using starts with 'https://', and there's a padlock symbol in the address bar, indicating it's secure.

3. **Secure your personal information:** Never share sensitive information like your bank account details, credit card numbers, or UPI PINs unless you're sure the request is legitimate and you initiated the contact.

4. **Use strong, unique passwords:** Don't reuse passwords across multiple sites. Use a password manager if needed.

5. **Keep your software updated:** Regularly update your operating system, web browser, and antivirus software to protect against known vulnerabilities.

6. **Be cautious with public Wi-Fi:** Avoid conducting financial transactions over public Wi-Fi.

Type something...

OneDrive - Personal Up to date

RESULT

IBM watsonx

Upgrade ? Komal Rathod's Account Dallas

Projects / Digital Finance Literacy Agent / Agent Lab Share feedback Unsaved New agent + Deploy

Build Model: granite-3-3-8b-instruct

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LangGraph

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Knowledge

Tools

Add a tool

Create custom tool

Added tools (5)

Agent preview

You: 11:10 AM

What is a safe interest rate for loan?

Digital Finance Literacy Agent 11:10 AM

The "safe" interest rate for a loan can vary greatly depending on several factors, including the type of loan, your creditworthiness, the lender, and the prevailing market interest rates.

As of now, here are some general benchmarks:

- 1. Personal Loan:** In many countries, personal loan interest rates typically range from about 6% to 36% per annum. A rate at the lower end of this range might be considered relatively safe and good for a borrower.
- 2. Home Loan:** Home loan interest rates usually range from around 6% to 10% per annum in many countries. Again, a rate at the lower end of this range would generally be considered favorable.
- 3. Auto Loan:** Auto loan interest rates can range from 3% to 10% or more, depending on factors like your credit score and the loan term. A lower rate would be safer for your finances.

Remember, these are just general guidelines. It's crucial to shop around and compare offers from different lenders to find the best rate for your specific situation. Also, consider the loan term, monthly payments, and total cost of the loan, not just the interest rate.

Type something...

RESULT

IBM watsonx

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Projects / Digital Finance Literacy Agent / Agent Lab

Share feedback β Unsaved 📁 ▼ New agent + Deploy 🔗

Build

AI Model: granite-3-3-8b-instruct ⚙️ <

Setup ▼

Configuration ^

Framework

LangGraph ▼

Architecture

ReAct ▼

Instructions

Advanced configuration

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Knowledge ▼

Tools ^

Add a tool

Create custom tool

Added tools (5)

Agent preview

▶ How did I get this answer?

KR You: 11:10 AM

यूपीआई आईडी से पैसे कैसे भेजें?

Digital Finance Literacy Agent 11:10 AM

यूपीआईआईआई (Unified Payments Interface) का उपयोग करके पैसे भेजने के लिए, आपको एक UPI-एनेबल्ड ऐप की आवश्यकता होती है, जैसे Google Pay, PhonePe, या BHIM, आपके स्मार्टफोन पर। यहां सामान्य चरण दिए गए हैं:

1. अपने UPI ऐप खोलें और 'भुगतान' या 'पैसे भेजें' विकल्प चुनें।

2. प्राप्तकर्ता के UPI ID या VPA (वर्चुअल पेमेंट एड्रेस) दर्ज करें।

3. आप कितना पैसा स्थानांतरित करना चाहते हैं, यह दर्ज करें।

4. यदि आप चाहें तो एक वैकल्पिक नोट या संदेश दर्ज करें।

5. अपने UPI PIN या बायोमेट्रिक प्रमाणीकरण का उपयोग करके लेनदेन की पुष्टि करें।

कृपया ध्यान दें कि विशिष्ट चरण आपके उपयोग किए जा रहे ऐप के आधार पर थोड़ा भिन्न हो सकते हैं। यदि आपको किसी विशिष्ट ऐप के लिए निर्देशों की आवश्यकता है, तो मुझे बताएं!

▶ How did I get this answer?

🔄

Type something...

📄 ▶

edunet
foundation

RESULT

IBM watsonx

Upgrade ?

Komal Rathod's Account

Dallas

KR

Deployment spaces / Digital Finance Literacy agent / Digital finance literacy agent

Digital finance literacy agent ✓ Deployed Online

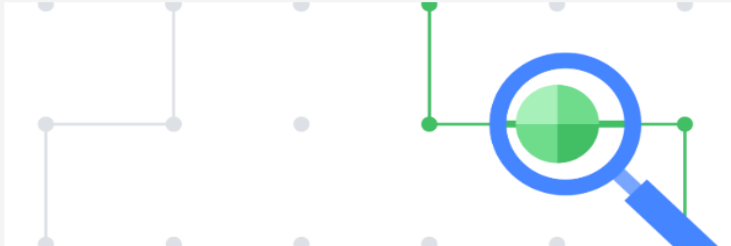
API reference Test **Preview**

New chat +


Digital finance literacy agent 11:41 AM

Welcome to Digital finance literacy agent

Digital finance Literacy Agent helps users to understand and navigate financial tools and practices.



Quick start samples

Type something... 

CONCLUSION

- The project successfully demonstrates how an AI Agent can improve digital financial literacy using multilingual support, document retrieval, and Watsonx foundation models. The solution provides accessible, reliable financial knowledge to users with minimal technical effort.

FUTURE SCOPE

➤ Future Enhancements:

- Add voice-based support using speech-to-text.
- Include more Indian languages (Marathi, Tamil, etc.).
- Integrate with a chatbot on websites or mobile apps.
- Fetch live RBI updates via API integration.
- Improve UI and responsiveness for end users.



REFERENCES

- IBM Cloud Documentation
- Watsonx.ai Agent
- Reserve Bank of India(RBI) – Digital Payments & Security guidelines
- National Centre for financial Education(NCFE)
- Digital India Program - Financial Inclusion



IBM CERTIFICATIONS

In recognition of the commitment to achieve professional excellence



Komal Rathod

Has successfully satisfied the requirements for:

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IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Komal Rathod

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT)

Learning hours: 20 mins

The background is a light blue gradient with faint, overlapping financial charts, including line graphs and bar charts. A decorative horizontal bar at the top consists of three segments: a dark grey segment on the left, a bright blue segment in the middle, and a dark grey segment on the right. The text "THANK YOU" is centered in a bold, dark blue font.

THANK YOU