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# **IBM AICTE PROJECT**

## **AI AGENT FOR DIGITAL FINANCIAL LITERACY**

**Presented By:**

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# OUTLINE

- Problem Statement
- Technology used
- Wow factor
- End users
- Result
- Conclusion
- Git-hub Link
- Future scope
- IBM Certifications

# PROBLEM STATEMENT

- Many individuals, especially from rural or less digitally aware communities, face challenges in understanding digital financial tools such as UPI, online banking, loan procedures, or scam prevention. Lack of awareness leads to financial mismanagement, fraud risks, and exclusion from government schemes.

## Proposed Solution:

- An **AI-powered Financial Literacy Agent** using **Natural Language Processing (NLP)** and **Retrieval-Augmented Generation (RAG)** to educate users on essential financial topics. The assistant provides clear guidance on digital transactions, budgeting, loans, and scam prevention — all with multilingual support and reliable responses sourced from government portals and financial institutions.

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# TECHNOLOGY USED

- IBM cloud lite services
- IBM Watsonx.ai Studio
- IBM Granite Foundation Model (LLM)
- Natural Language Processing (NLP)
- Vector Index (Watsonx.ai)
- Retrieval Augmented Generation (RAG)

## IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model
- IBM Cloud Object Storage
- IBM Cloud IAM (Identity and Access Management)

# WOW FACTORS

- This AI agent aims to empower users with accurate, accessible, and personalized financial knowledge.
- It will reduce misinformation, help users make better money decisions, and increase trust in digital financial systems.
- The solution is especially impactful for underserved communities and first-time digital users.
- **Unique features:**
  - Retrieval-based answers from trusted sources like RBI and NPCI
  - Natural Language Processing (NLP) for understanding diverse user queries
  - Document-based responses using a Vector Index (RAG implementation)
  - Safe handling of off-topic or unrelated questions
  - Designed for multilingual interaction to reach regional users
  - Covers essential topics like UPI, online scams, loans, budgeting, and savings

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## END USERS

- General Public
- First-time Digital Users
- Elderly Citizens
- Students and Young Adults
- NGOs and Government Outreach Programs
- Self-Help Groups / Women's Collectives
- Educators / Institutions
- Microfinance Beneficiaries

# RESULTS : SETTING UP

IBM watsonx

Upgrade ? Bell PANDALA SHIVA's Account Dallas PS

Projects / FINADVISOR / FinAdvisor

Share feedback β Autosave on New agent + Deploy Lock Info

Build

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

Setup


Name  
FinAdvisor

Description 100/100  
Aims to develop an intelligent virtual assistant that enhances financial awareness and digital safet

Icon Placeholder image

Quick start questions

Agent preview



Sample questions

How do I budget my monthly expenses? →

Difference between tehcnical analysis & fundamental analysis in stock market? →

What are the metrics to value to stock? →

what is ROE & ROCE? →

Type something... →



# RESULTS : AGENT PREVIEW

IBM watsonx

Upgrade ? Bell PANDALA SHIVA's Account Dallas PS

Projects / FINADVISOR / Agent Lab

Share feedback β Unsaved 📁 New agent + Deploy 🚀

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

Setup ^


Name



FinAdvisor

Description 100/100


Aims to develop an intelligent virtual assistant that enhances financial awareness and digital safety

Icon





Placeholder image



Agent preview

▶ how did I get this answer?

PS You: 08:17 PM

How do I know if a stock is overpriced or undervalued?

FinAdvisor 08:17 PM

Determining if a stock is overpriced or undervalued involves analyzing its financials and comparing them to its market price. Here are some steps you can follow:

1. **Price-to-Earnings (P/E) Ratio:** This ratio compares a company's stock price to its earnings per share (EPS). A high P/E ratio might suggest the stock is overpriced, while a low P/E ratio could indicate it's undervalued. However, this should be considered alongside other ratios.

Type something... 🗑️ 🔒

# RESULTS : TOOLS USED (ALSO USED VECTOR DATABASE INDEX)

IBM watsonx

Upgrade ? Bell

PANDALA SHIVA's Account Dallas PS

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Share feedback Autosave on New agent Deploy

Build

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

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

what is ROE & ROCE?

FinAdvisor 08:25 PM

ROE (Return on Equity) and ROCE (Return on Capital Employed) are financial metrics used to assess a company's profitability and efficiency.

**Return on Equity (ROE):**

- ROE measures how efficiently a company uses shareholders' equity to generate profit.
- It's calculated by dividing net income by shareholder equity.
- Formula:  $ROE = \text{Net Income} / \text{Shareholder Equity}$
- A higher ROE indicates that a company is more efficient in utilizing its shareholders' investment to generate profits.


**Return on Capital Employed (ROCE):**




- ROCE measures a company's profitability in relation to the capital used by the







Type something...


# RESULTS

## Deployed AI Agent

 IBM watsonx


Upgrade ?  PANDALA SHIVA's Account  Dallas  PS

Deployment spaces / FinAdvisor / FinAdvisor /      


FinAdvisor  Deployed Online

API reference Test **Preview**

New chat +


 You 08:25 PM

How do I budget my monthly expenses?

 FinAdvisor 08:25 PM

Creating a monthly budget can be a straightforward process if you follow these steps:

- 1. Identify your income:** Start by determining your total monthly income. This includes your salary, any side jobs, rental income, or other sources of money coming into your household.
- 2. List your expenses:** Write down all your expected monthly expenses. These typically include:
  - Rent/Mortgage
  - Utilities (electricity, water, gas, internet)

Type something... 

## CONCLUSION

- The Digital Financial Literacy AI Agent leverages the power of IBM Watsonx.ai and Retrieval-Augmented Generation (RAG) to deliver accessible, accurate, and context-aware financial guidance.
- By addressing real-world concerns like UPI safety, loan awareness, and scam prevention, the assistant empowers users to make informed financial decisions.
- With multilingual support and document-backed answers, it ensures inclusivity, trust, and reliability.
- This solution has the potential to bridge the digital divide and promote financial well-being across diverse communities.

# GITHUB LINK

## Github:

- <https://github.com/ShivaNetha1/Digital-Financial-Literacy-AI-agent>
- Building – Testing – Deployment videos on my personal Youtube channel :  
<https://www.youtube.com/watch?v=oanWlnqpiP4>
- <https://www.youtube.com/watch?v=SfwFLWpIVdk&t=13s>

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# FUTURE SCOPE

- Multilingual Research Support
- Voice-Activated Research Assistant
- Real-Time Collaboration Features
- Research Gap and Novel Topic Identification
- Integration with Publishing Platforms
- AI-Assisted Paper Drafting

# IBM CERTIFICATIONS

- Screens

In recognition of the commitment to achieve professional excellence



PANDALA SHIVA

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 16, 2025

Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/edb39b4b-8250-4068-84c3-d2420f9d0480>



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

PANDALA SHIVA

for the completion of

**Lab: Retrieval Augmented Generation with  
LangChain**

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 17 Jul 2025 (GMT)

**Learning hours:** 20 mins





**THANK YOU**