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# CAPSTONE PROJECT

## DIGITAL FINANCIAL LITERACY AGENT

**Presented By:**

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& B.Tech(AI&DS)**

# OUTLINE

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

# PROBLEM STATEMENT

- India's growing digital economy has made tools like UPI, online banking, and digital lending widely available—but millions still lack **financial literacy** and are vulnerable to **online fraud** and **mismanagement of personal finance**.
- The challenge is to build an **AI Agent for Digital Financial Literacy** powered by **RAG (Retrieval-Augmented Generation)**. It should:
  - Retrieve verified content from trusted sources (e.g., RBI, banks, government portals)
  - Answer user queries like *“How do I avoid loan scams?”* or *“How do I create a simple budget?”*
  - Support **multilingual interaction** to serve users from various regions and literacy levels
  - Offer **real-time, personalized, and culturally sensitive guidance**All while leveraging **IBM Cloud Lite** and optionally **IBM Granite Models** for AI responses.

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# TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

# IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

# WOW FACTORS

- **RAG-based Smart Search:** Provides **reliable, real-time financial information** using retrieval + generation, unlike typical chatbots. Unique features:
- **Multilingual Support:** Users can interact in **regional languages**, making it **inclusive and accessible**. Citation and reference analysis to trace influence
- **Contextual Learning Paths:** Adapts suggestions based on user's knowledge level (beginner, moderate, advanced)
- **Fraud Awareness Engine:** Proactively educates users on **scam alerts, red flags, and safe digital practices**.
- **Conversational UI:** Human-like, intuitive interface using **IBM Watson Assistant or IBM Granite models**.
- **Hosted on IBM Cloud Lite:** Lightweight, scalable solution using **free-tier cloud services**.

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## END USERS

- **Senior citizens** new to digital banking
- **Research Institutions and Universities**
- **Rural and semi-urban populations** with limited access to financial education.
- **Students and young adults** learning budgeting and savings
- **Low-income families** managing loans, subsidies, and schemes
- **Small business owners** using UPI, POS, or digital loans

# RESULTS

IBM watsonx



Sinega --'s Account

Dallas

S-

[Deployment spaces](#) / [financial\\_advisor](#) / [financial\\_advisor](#) /



financial\_advisor ✓ Deployed Online

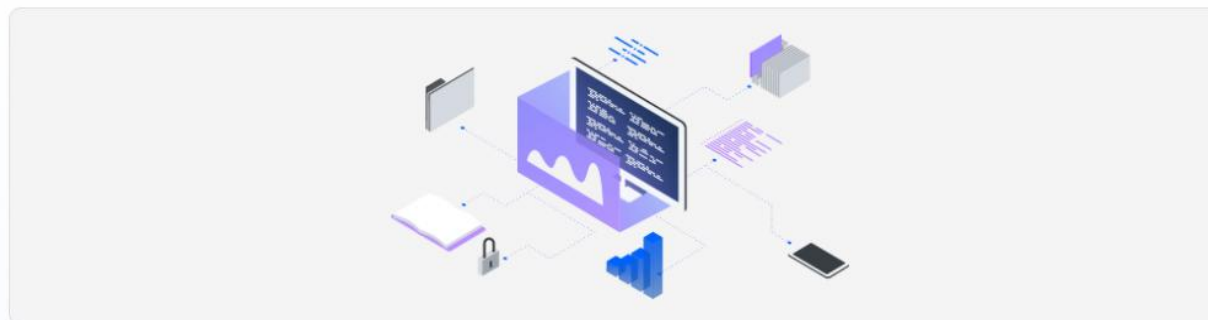
API reference

Test

Preview

New chat +

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



Quick start samples

how do i budget my monthly expenses?


what is the 50-30-20 budgeting rule?




Type something...






# RESULTS



UpgradeSinenga --'s Account ▾Dallas ▾

Deployment spaces / financial\_advisor / financial\_advisor /

financial\_advisor  Deployed Online

API reference

Test

Preview

Endpoints for inferencing ⓘ

Private endpoint

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/44847d9c-19ee-4aad-9512-a79a0e280465/ai\_service?vc

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/44847d9c-19ee-4aad-9512-a79a0e280465/ai\_service\_st

Public endpoint

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/44847d9c-19ee-4aad-9512-a79a0e280465/ai\_service?vc

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/44847d9c-19ee-4aad-9512-a79a0e280465/ai\_service\_st

[Learn more](#) about the 2021-05-01 version query parameter

Code snippets

API

Java

JavaScript

Python

Scala

Bearer <token> ⓘ

IAM

About this deployment ×

Name

financial\_advisor

Description

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

Deployment Details

Deployment ID: 44847d9c-19ee-4a...

Serving name: No serving name.

Software specification: runtime-24.1-py3.11 ⚙️


Hardware specification: Extra extra small: 1 CPU and 2 GB RAM

Copies: 1

Tags

wx-agent

Associated asset

 financial\_advisor

edunet  
foundation

# RESULTS

The screenshot displays the IBM Watsonx Financial Advisor interface. At the top, a dark header bar contains the IBM Watsonx logo, a help icon, a notification bell, and user account information for 'Sinaga --'s Account' in 'Dallas'. Below the header, a breadcrumb trail shows 'Deployment spaces / financial\_advisor / financial\_advisor /'. The main content area features the 'financial\_advisor' title with 'Deployed' and 'Online' status indicators. Three tabs are visible: 'API reference', 'Test', and 'Preview', with 'Preview' being the active tab. A 'New chat +' button is located in the top right corner of the chat area. The chat history shows a user query at 08:25 PM: 'Difference between technical analysis & fundamental analysis in stock market?'. The system response explains that Technical Analysis focuses on price charts, patterns, and indicators, while Fundamental Analysis looks at a company's financials, business model, and economic factors. It also includes two bullet points: 'Technical = "What does the chart say?"' and 'Fundamental = "What is the company worth?"'. At the bottom, there is a text input field with the placeholder 'Type something...' and a send button.

IBM watsonx

Deployment spaces / financial\_advisor / financial\_advisor /

financial\_advisor Deployed Online

API reference Test **Preview**

New chat +

? You 08:25 PM

Difference between technical analysis & fundamental analysis in stock market?

Technical Analysis focuses on price charts, patterns, and indicators to predict future stock movements.  
Fundamental Analysis looks at a company's financials, business model, and economic factors to determine its intrinsic value.

- ★ Technical = "What does the chart say?"
- ★ Fundamental = "What is the company worth?"

Type something...

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## CONCLUSION

The AI Agent bridges the gap between **digital finance availability** and **user understanding**. It simplifies complex financial terms, promotes **safe financial behavior**, and enables users to take **informed decisions**. With **RAG and IBM's AI ecosystem**, this solution can transform how India embraces digital finance—**safely and smartly**.

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# FUTURE SCOPE

- Integration with UPI apps
- Integration with UPI apps for in-app help (e.g., Paytm, PhonePe)
- Gamified learning modules on financial topics
- Collaboration with banks and NGOs for community deployment
- Expansion to other countries facing similar financial literacy gaps

# IBM CERTIFICATIONS

In recognition of the commitment to achieve professional excellence



## Sinega M

Has successfully satisfied the requirements for:

### Journey to Cloud: Envisioning Your Solution



Issued on: Jul 18, 2025

Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/7c493fb5-f7da-4ea6-815f-ca4a10bab124>



# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



## Sinega M

Has successfully satisfied the requirements for:

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### Getting Started with Artificial Intelligence

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Issued on: Jan 22, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/4e4d8548-01c4-40e4-875a-7691d6ac7256>





This certificate is presented to

Sinega Magesh

for the completion of

# Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 16 Jul 2025 (GMT)

**Learning hours:** 20 mins



**THANK YOU**