

CAPSTONE PROJECT

AI AGENT FOR DIGITAL FINANCIAL LITERACY

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OUTLINE

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Problem Statement

An AI Agent for Digital Financial Literacy, powered by RAG (Retrieval-Augmented Generation), helps users understand and navigate essential financial tools and practices. It retrieves reliable content on using UPI, avoiding online scams, understanding interest rates, budgeting, and personal finance management from government portals, banking websites, and educational platforms. With multilingual support, users from diverse backgrounds can interact in their preferred language and ask questions like “How do I send money via UPI?” or “What is a safe interest rate for a loan?” The agent ensures financial literacy is accessible, personalized, and culturally inclusive. This AI-driven assistant empowers users with knowledge, protects them from fraud, and builds confidence in digital finance.

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
- IBM Cloud Storage Bucket

Wow factors

An AI Agent for Digital Financial Literacy delivers a transformative experience by offering hyper-personalized learning paths tailored to each user's financial knowledge, age, and goals. It features real-time simulations, gamified learning, and fraud detection training to make financial concepts practical and engaging. With support for regional languages, voice interaction, and an “Explain Like I’m 5” mode, it ensures accessibility for all age and literacy levels. The agent integrates with real financial tools, provides emotion-aware guidance, works offline for rural inclusion, and even acts as a smart co-pilot for real-life financial decisions — making it a powerful, inclusive, and intelligent financial mentor.

End users

- Academic Researchers
- Research Institutions and Universities
- Industry R&D Teams
- Educators
- Developer

Results

The screenshot displays the IBM Cloud Pak for Data web interface. The browser's address bar shows the URL: `dataplatfom.cloud.ibm.com/analytics/notebooks/v2/5ee7b219-3218-4c32-b6e3-d3e37826688b?projectid=58d9a29a-8701-4db6-97b4-91677eb5c91a&context=cpdaas`. The page header includes the IBM Cloud Pak for Data logo, a search bar, and user information for Bhawna Jha. The main content area shows the 'FinAdvisor' chatbot interface, which is 'Deployed' and 'Online'. The 'Preview' tab is selected, showing a chat history. The user's message is 'How do I budget my monthly expenses?'. The chatbot's response provides a structured guide on creating a monthly budget, starting with identifying income and then listing expected expenses like rent, utilities, and groceries. The interface also includes a 'New chat' button and a text input field at the bottom.

IBM Cloud Pak for Data

Search in your workspaces

Upgrade

Bhawna Jha's Account

Dallas

BJ

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)
 - Groceries
 - Transportation
 - Entertainment
 - Insurance
 - Debt payments
 - Savings

Type something...

11:43 03-08-2025

Results

The screenshot displays the IBM Cloud Pak for Data interface, specifically the 'Build' and 'Agent preview' sections. The browser address bar shows the URL: dataplatform.cloud.ibm.com/analytics/notebooks/v2/5ee7b219-3218-4c32-b6e3-d3e37826688b?projectid=58d9a29a-8701-4db6-97b4-91677eb5c91a&context=cpdaas. The interface includes a top navigation bar with 'IBM Cloud Pak for Data', a search bar, and user information. The main content area is divided into two panels: 'Build' on the left and 'Agent preview' on the right. The 'Build' panel shows 'Quick start questions' and 'Configuration' options. The 'Agent preview' panel shows 'Sample questions' and a 'Type something...' input field. The bottom of the screen shows a Windows taskbar with various application icons and a system clock indicating 11:45 on 03-08-2025.

IBM Cloud Pak for Data

Search in your workspaces

Upgrade

Bhawna Jha's Account

Dallas

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Projects / FINADVISOR / FinAdvisor

Share feedback

Autosave on

New agent +

Deploy

Build

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

Agent preview

Quick start questions

Add up to 4 quick start questions that your users can select.

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?

Configuration

Framework

Architecture

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...

11:45 03-08-2025

Results

IBM Cloud Pak for Data

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Projects / fitn

Overview Assets Jobs **Manage**

Project

- General
- Access control
- Environments
- Resource usage
- Services & integrations**
- Tools
- Pipeline

Services & integrations

IBM services (2) Third-party integrations

Associate IBM Cloud services with this project to add tools, compute environments, or other capabilities. [Learn more.](#)

Find services

Associate service +

<input type="checkbox"/> Name	Service type
<input type="checkbox"/> watsonx Assistant-0k	Watson Assistant
<input type="checkbox"/> watsonx.ai Runtime-ff	watsonx.ai Runtime

10:36 03-08-2025

Results

Browser tabs: (4) WhatsApp, Digital-Financial-Literacy, IBM-Cloud-Fitness-Buddy, clickk — fitn | IBM Cloud P, fitn — Projects | IBM Cloud, Service instances | IBM Cloud

Address bar: dataplatform.cloud.ibm.com/analytics/notebooks/v2/5ee7b219-3218-4c32-b6e3-d3e37826688b?projectId=58d9a29a-8701-4db6-97b4-91677eb5c91a&context=cpdaas

Google Chrome isn't your default browser. Set as default

IBM Cloud Pak for Data Search in your workspaces Upgrade ? Bhawna Jha's Account Dallas BJ

Projects / FINADVISOR / FinAdvisor Share feedback Autosave on 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 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...

Windows taskbar: 11:43 03-08-2025

Results

The screenshot displays the IBM Cloud Pak for Data interface. The top navigation bar includes the IBM Cloud Pak for Data logo, a search bar, and user account information. The main interface is divided into two panels: 'Build' and 'Agent preview'.

Build Panel:

- 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 Panel:

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...

Conclusion

- The AI Agent for Digital Financial Literacy is a powerful step toward building a financially aware and empowered society. By combining personalization, accessibility, real-world integration, and interactive learning, it bridges the gap between complex financial concepts and everyday understanding. It not only educates but also equips individuals with the confidence and skills to make smart, secure, and informed financial decisions in the digital age.

FUTURE SCOPE

- **Voice and Local Language Support** – Makes financial learning easy for everyone.
- **Real-Time Financial Advice** – Acts as a smart advisor for daily money decisions.
- **Fraud Detection Alerts** – Warns users about scams and risky actions.
- **Integration with Govt Schemes** – Helps users access benefits and subsidies.
- **Offline Access** – Works even in low-internet rural areas.

IBM Certifications

Screenshot/ credly certificate(getting started with AI)

In recognition of the commitment to achieve
professional excellence



Bhawna Jha

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/4b76b6e2-89b8-48ee-be8c-5e08158be07e>



IBM Certifications

Screenshot/ certificate(RAG LAB)

7/27/25, 12:26 AMCompletion Certificate | SkillsBuild

IBM SkillsBuild**Completion Certificate**



This certificate is presented to

Bhawna Jha

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

IBM Certifications

Screenshot/ credly certificate(Envisioning Your Solution)

In recognition of the commitment to achieve
professional excellence



Bhawna Jha

Has successfully satisfied the requirements for:

Journey to Cloud: Envisioning Your Solution



Issued on: Jul 22, 2025
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GitHub Link

Git hub link : <https://github.com/bhawna31/digitalFinanceLiteracy.git>

