
CAPSTONE PROJECT

DIGITAL FINANCIAL LITERACY AI

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OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

The Challenge – An AI Agent for Digital Financial Literacy, 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.

PROPOSED SOLUTION

- The proposed system aims to address the challenge of improving digital financial literacy by providing an AI-powered, multilingual, and secure conversational agent accessible to all, including underserved communities. The solution will consist of the following components:
- **Data Collection:**
 - Gather curated financial education content from trusted sources such as RBI guidelines, government schemes, and financial literacy portals.
 - Utilize real-time updates on financial products, fraud alerts, and regulatory changes.
- **Data Preprocessing:**
 - Clean and organize collected data to ensure accuracy, remove outdated content, and standardize formats.
 - Perform knowledge structuring to enable the AI agent to answer context-based queries effectively.
- **AI Agent Algorithm:**
 - Implement an AI-powered conversational model (IBM watsonx.ai Granite Instruct) to deliver financial education interactively.
 - Incorporate personalization based on user profiles, goals, and preferred language.
- **Deployment:**
 - Develop a user-friendly interface available on web, mobile, and messaging platforms like WhatsApp/SMS for low-bandwidth areas.
 - Deploy the solution on a scalable and secure IBM Cloud infrastructure ensuring data privacy.
- **Evaluation:**
 - Measure user engagement, learning progress, and satisfaction using surveys and analytics.
 - Continuously update content and fine-tune the model based on feedback and changing financial regulations.
- **Result:**

Increased financial awareness, better decision-making, and greater inclusion in the digital economy, especially for rural and low-income populations.

SYSTEM APPROACH

- The "System Approach" section outlines the overall strategy and methodology for developing and implementing the AI-powered Digital Financial Literacy Agent. Here's a suggested structure for this section:
- System Requirements
- Hardware
 - Computer or cloud instance with at least 4 GB RAM and dual-core processor.
 - Stable internet connection for accessing IBM watsonx.ai and APIs.
- Software
 - Python 3.11 or later.
 - IBM Cloud account with watsonx.ai access.
 - Web or mobile interface platform for deployment.
- Library Requires to Built The Model
 - langchain_ibm – For Integrating IBM watsonx.ai LLMs
 - ibm_watsonx_ai – For authentication and API interaction
 - Langgraph – For agent Workflow Management

ALGORITHM & DEPLOYMENT

- In the Algorithm section, describe the AI model and approach chosen for delivering personalized financial literacy guidance. Here's the structure:
- **Algorithm Selection:**
 - Use IBM watsonx.ai Granite Instruct model integrated with langgraph to create an AI powered conversational agent.
 - Selected for its ability to handle multilingual queries, maintain conversation context, and deliver accurate, personalized financial information.
- **Data Input:**
 - Knowledge base includes curated RBI guidelines, government financial schemes, fraud prevention tips, and digital banking tutorials.
 - User profile inputs such as preferred language, financial goals, and literacy level for personalized responses.
- **Training Process:**
 - The AI is fine-tuned using domain-specific financial literacy datasets through tools in IBM cloud.
- **Prediction Process:**
 - The trained agent interprets user queries and retrieves the most relevant, context-aware financial advice.

RESULT

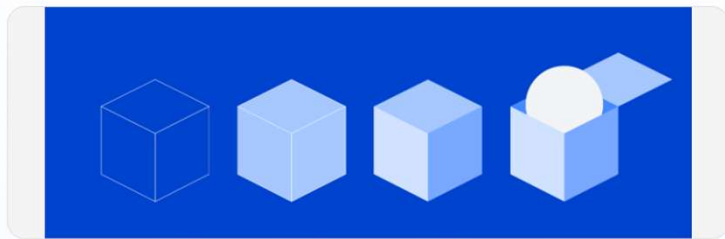
Agent preview



Digital Financial Literacy AI 03:30 PM

Welcome to Digital Financial Literacy AI

Helps users understand and navigate essential financial tools and practices.



Sample questions

What is UPI?



How can I find government financial literacy programs in my area?



What is Jan Dhan Yojana and how can I apply?



How do I create a strong and memorable password?



Type something...



Agent preview

AB

You: 03:30 PM

What is UPI?



Digital Financial Literacy AI 03:30 PM

UPI, or Unified Payments Interface, is a real-time payment system developed by the National Payments Corporation of India (NPCI). It allows instant money transfers between two bank accounts on a mobile platform. UPI is available 24x7, throughout the year, excluding bank holidays. It enables customers to make provisions for various payments through a single application.

For more detailed information, you can refer to the official NPCI UPI website or conduct a Google search with the term "UPI guide for beginners".

► How did I get this answer?



Type something...



RESULT

Agent preview



You: 03:51 PM

How can I secure my phone for digital payments?



Digital Financial Literacy AI 03:51 PM

Securing your phone for digital payments involves several steps:

1. **Use a Strong Passcode or Biometric Authentication:** Set a strong passcode, PIN, or use biometric authentication like fingerprint or face recognition for unlocking your phone.
2. **Keep Your Software Updated:** Regularly update your phone's operating system and apps to ensure you have the latest security patches.
3. **Install Apps from Trusted Sources:** Download apps only from official app stores like Google Play Store or Apple App Store.
4. **Review App Permissions:** Be cautious about the permissions you grant to apps. Only allow access to necessary features.
5. **Use a Reliable Security App:** Install a reputable mobile security app that can provide features like anti-virus protection, web protection, and app locking.
6. **Enable Remote Lock and Wipe:** This feature allows you to remotely lock your device or erase its data in case it gets lost or stolen.

Type something...



Agent preview



Digital Financial Literacy AI 03:54 PM

Creating a strong and memorable password involves a balance of complexity and memorability. Here are some tips:

1. **Length:** Aim for at least 12 characters. Longer passwords are harder to crack.
2. **Complexity:** Use a mix of uppercase and lowercase letters, numbers, and symbols.
3. **Avoid Personal Information:** Don't use easily guessed information like your name, birthdate, or common words.
4. **Use a Passphrase:** Consider using a random phrase or sentence that you can remember. For example, "CorrectHorseBatteryStaple" is a famous example that's both memorable and strong.
5. **Substitute and Change:** Substitute letters with numbers or symbols, or add numbers or symbols to the end or middle of a word. For example, "P@ssw0rd" or "Travel123!".
6. **Password Managers:** Consider using a reputable password manager to generate and store complex passwords.
7. **Regular Updates:** Change your passwords regularly, especially for sensitive accounts.

Type something...



CONCLUSION

- The AI-powered Digital Financial Literacy Agent empowers individuals with the knowledge and tools to make informed financial decisions.
- By combining IBM watsonx.ai's intelligence with inclusive accessibility features, the solution promotes financial independence and security across diverse communities.

FUTURE SCOPE

- Voice-based interaction in multiple languages
- Integration with real-time government scheme updates
- AI-powered beginner investment guidance
- Gamified financial learning
- Expansion to international markets

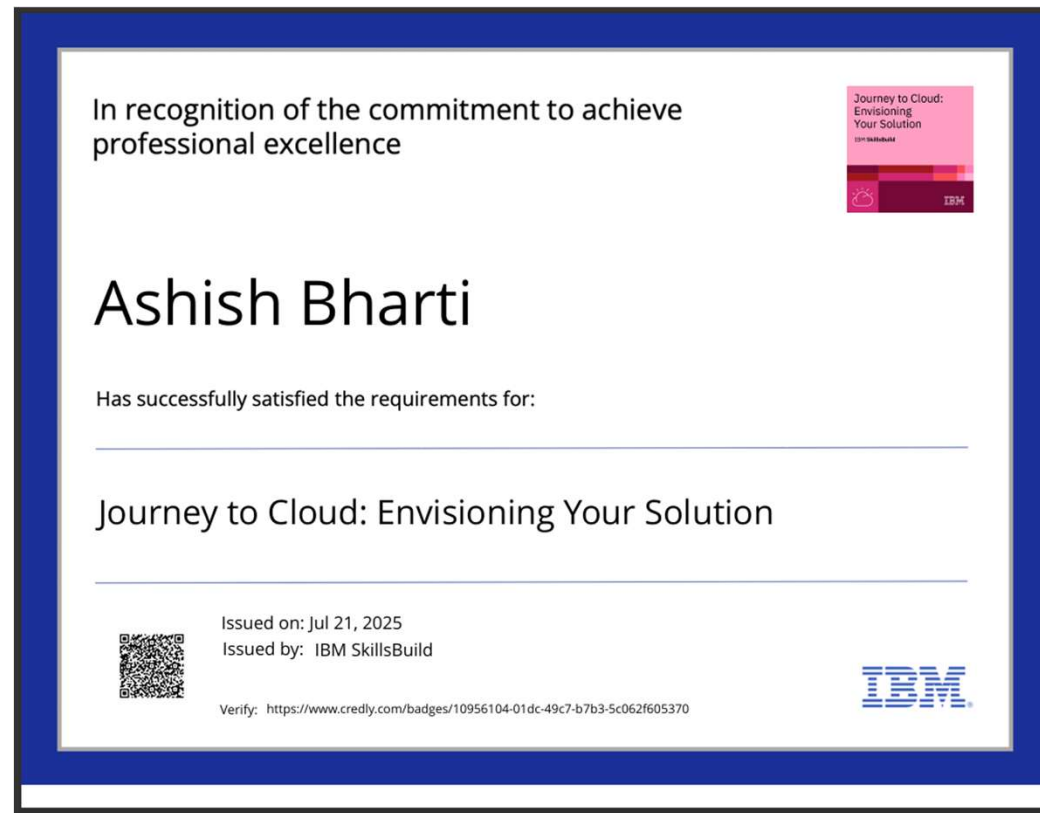
REFERENCES

- RBI Financial Literacy Guidelines – <https://rbi.org.in>
- Government of India Digital Financial Literacy Campaign – <https://www.pmjdy.gov.in>
- IBM watsonx.ai Documentation – <https://www.ibm.com/watsonx>

IBM CERTIFICATIONS



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THANK YOU