Sri Eshwar College of Engineering
Coimbatore | Tamilnadu
An Autonomous Institution

Department of Artificial Intelligence and Data Science

Microsoft SEFA Hackathon 2025

Title : Modern Banking App: UX-Led Dev & Azure Cloud Deployment

Category: FinTech | Cloud | UX Design

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CHALLENGE STATEMENT

Traditional banking apps face serious **UX issues** like long, confusing onboarding, high KYC drop-offs, and poor mobile accessibility. Users often abandon the process due to form overload, **file upload errors**, and lack of feedback or personalization. These problems are worsened by outdated UI design, **weak error handling**, and non-responsive layouts—making the experience frustrating and non-inclusive.

KEY PROBLEMS:

1. Complex onboarding & high KYC drop-offs
2. Lack of personalization & feedback,
3. Accessibility & mobile usability gaps

CONCEPT / SCOPE OF SOLUTION

I propose a Design-Led + Cloud-Native solution:

- **Phase 1: UX Redesign with Design Thinking**
  - Empathize → Define → Ideate → Prototype → Test
  - Tools: Figma, Miro, Google Forms
  - Deliverables: User journey map, wireframes, usability metrics
- **Phase 2: Scalable Web App Development**
  - Frontend: React.js + Tailwind CSS
  - Backend: Node.js (Express)
  - Cloud: Azure App Service, Azure AD B2C, Cosmos DB, Blob Storage
  - CI/CD: GitHub Actions + Azure DevOps

LITERATURE SURVEY / BACKGROUND STUDY

Paper	Approach	Remarks
1. Enhancing User Engagement and Retention in Fintech: UX Strategies & Design Principles (May 2024)	Mixed-methods research combining surveys and quantitative UX analysis	Confirms user-centered, personalized flows improve satisfaction and retention
2. A Digital Cohort Analysis of Mobile Banking App Experience (Sept 2023)	Structural Equation Modeling (SEM) on 400+ user data, assessing emotional, pragmatic UX elements	Ease-of-use & emotional engagement drive continued app adoption, esp. during onboarding
3. Consumer Acceptance of Fintech App Payment Services: Systematic Review (2023)	Systematic literature review on usability, risk perception & trust in onboarding/payment flows	Frictionless onboarding (minimal forms, instant feedback) boosts user trust
4. Mobile Business Banking Onboarding: HSBC vs Revolut (May 2024)	Heuristic evaluation + usability testing + open-ended user surveys	Shows how legacy apps fail on clarity; highlights impact of progress indicators & clean UI
5. UX Audit of Banking App Onboarding (June 2025 by Urooba S.)	UI/UX audit of 10 top apps focusing on navigation, error handling, and feedback	Recommends contextual tooltips, clear CTAs, progressive disclosure, micro-interactions

EXISTING METHOD

- Linear Onboarding Flows: Most apps still use static, one-size-fits-all onboarding sequences with multiple screens and lengthy KYC steps, which cause drop-offs.
- Basic Authentication Systems: Traditional apps rely on username/password logins without integrating advanced identity management like Azure AD B2C or biometrics.
- Manual Document Uploads: Document verification is often handled manually or through legacy upload forms without blob storage or real-time feedback.
- Limited Personalization: There’s minimal use of behavioral data or role-based flows (e.g., customer vs. admin), leading to poor user engagement and reduced retention.

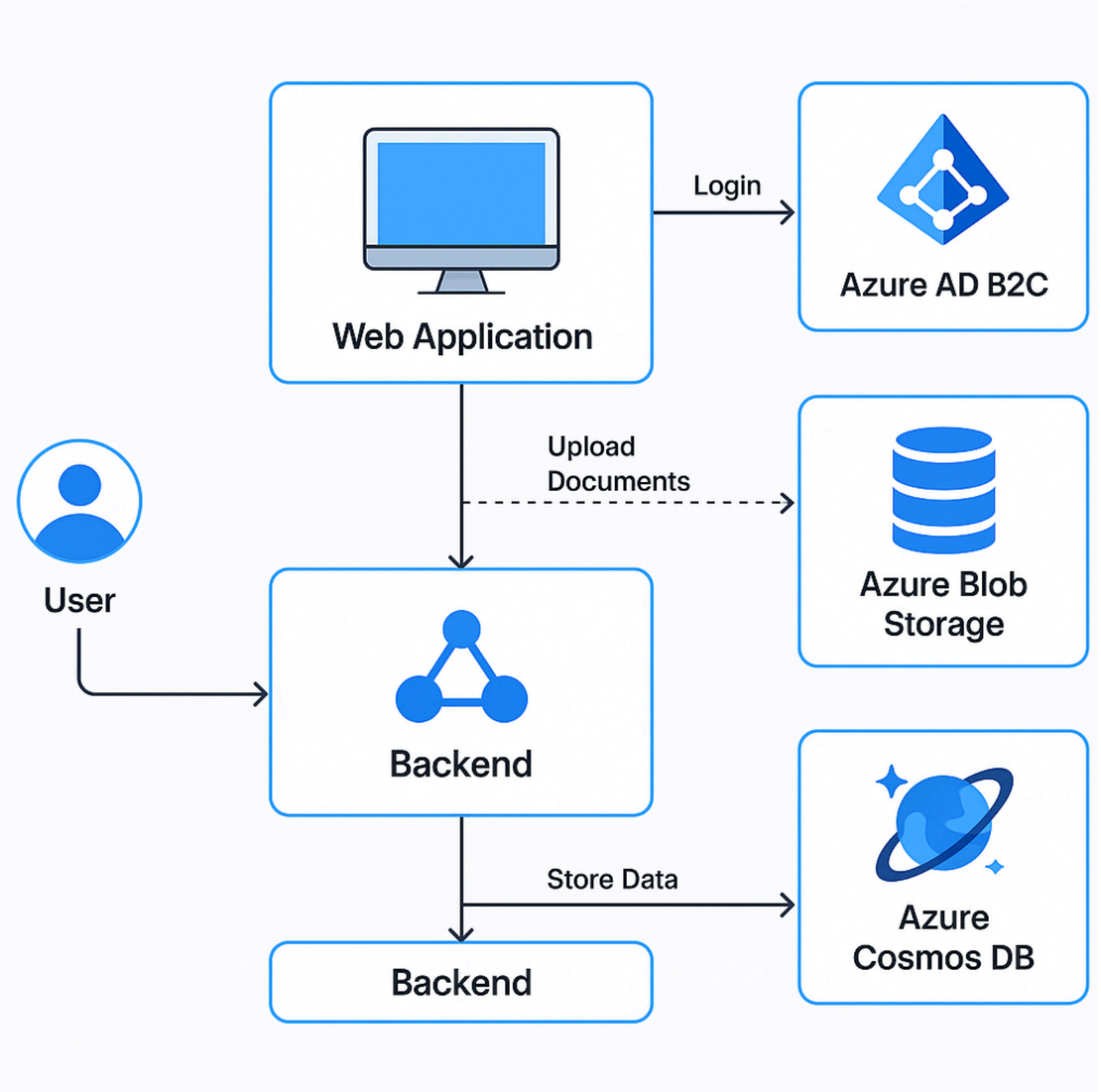
PROPOSED / INNOVATIVE METHOD

1. Develop a modular onboarding flow with progressive disclosure and role-based personalization using Azure AD B2C for secure, dynamic identity handling.
2. Implement intuitive UI/UX with step-indicators, micro-interactions, contextual tooltips, and adaptive error feedback based on real-time behavior.
3. Use Azure Blob Storage to securely handle KYC/ID documents and biometric uploads during onboarding with encrypted blob access.
4. Store user profiles and onboarding metadata in Azure Cosmos DB to ensure scalable, low-latency global access for cross-platform banking.
5. Integrate behavioral analytics and cohort tracking to detect drop-off points and adapt UI dynamically for digital natives vs immigrants.
6. Enable multi-role onboarding (Customer, Admin, Owner) through a unified backend, with role-specific logic and microservices.
7. Deploy a UX audit loop with ML-driven feedback mechanisms to continuously refine onboarding experience based on satisfaction scores.

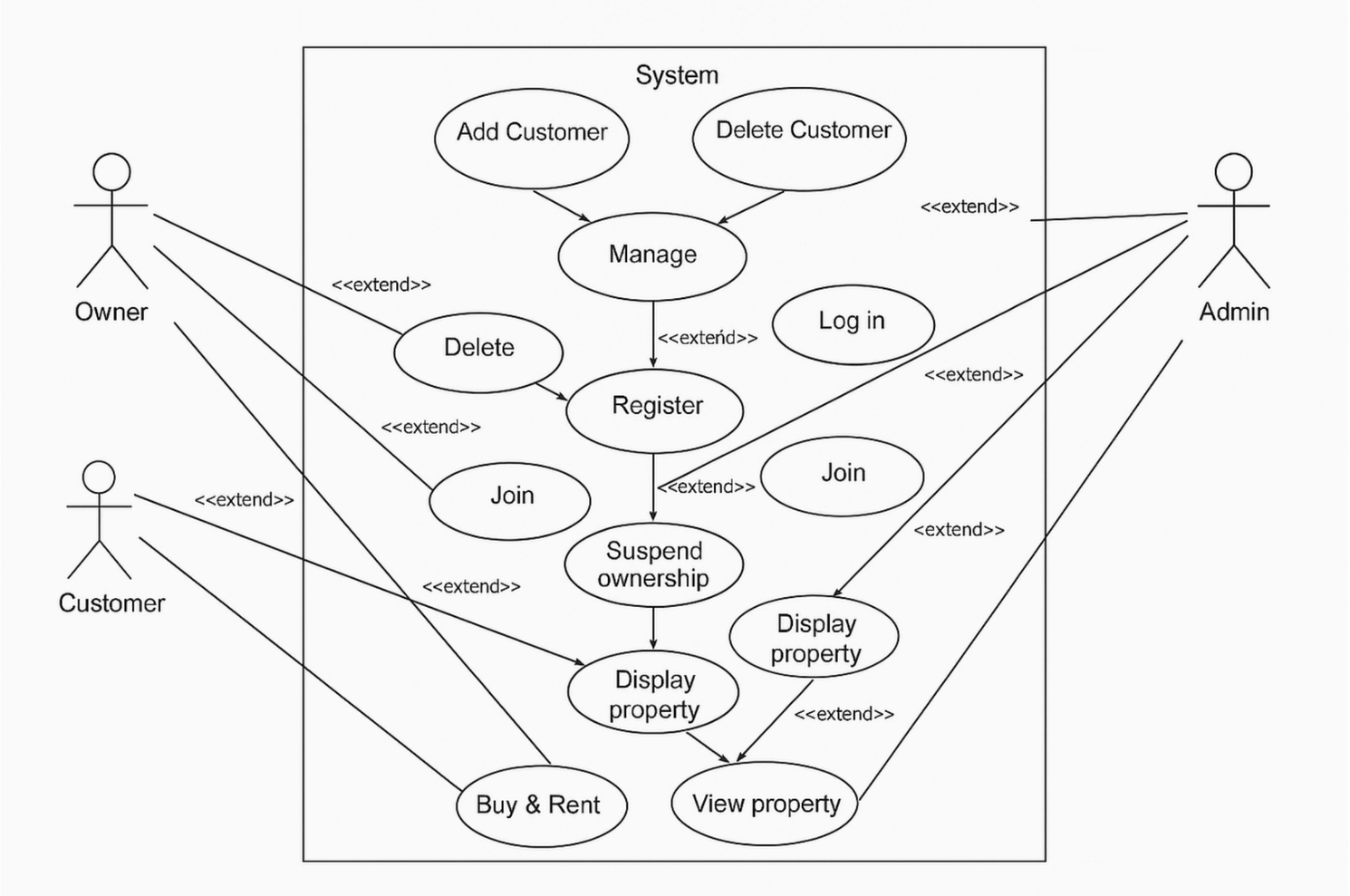
BLOCK / SCHEMATIC DIAGRAM

- User interacts with the Web App, logging in via Azure AD B2C.
- After login, users upload documents through the frontend, which passes through the backend server.
- The backend uploads the documents to Azure Blob Storage
- Simultaneously, user-related metadata or records are stored in Azure Cosmos DB, a globally distributed NoSQL database.

Term	Explanation
Web Application	Frontend interface (likely built with React, Angular, etc.) users interact with.
Azure AD B2C	Azure's identity management service for secure user login and authentication.
Backend	Server-side logic, typically built with Node.js, Python, or .NET, handles data.
Azure Blob Storage	Object storage solution for storing unstructured data like PDFs, images, etc.
Azure Cosmos DB	NoSQL database service offering high availability and global distribution.



USE CASE DIAGRAM

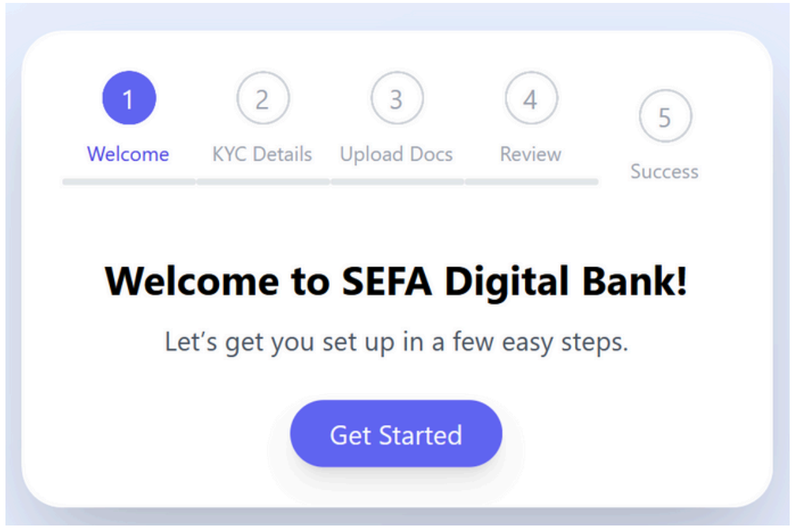


SPECIFICATION & BUDGET

Component	Technology	Purpose
Frontend	HTML/CSS + JS or React	Basic UI for user onboarding
Backend	Flask / Node.js	Handles registration & API logic
Auth	Azure AD B2C (Free tier)	Simple secure login
Storage	Azure Blob Storage	Store uploaded user documents
Database	Azure Cosmos DB (Free tier)	Store user data and logs
Hosting	Azure Static Web App	Host front-end & APIs

Category	Cost (INR)	Notes
Azure Services (Free Tier)	₹0 – ₹500	Eligible with student credits
Domain (Optional)	₹800 – ₹1,200	For production demo
Design & Assets	₹0 (Figma free)	Basic mockups
Misc. Dev Tools	₹0 – ₹1,000	GitHub, VS Code, Postman, etc.
Total	₹800 – ₹2,000	Very low-cost prototype/MVP setup

COMPLETED WORKS UPTO THIS REVIEW



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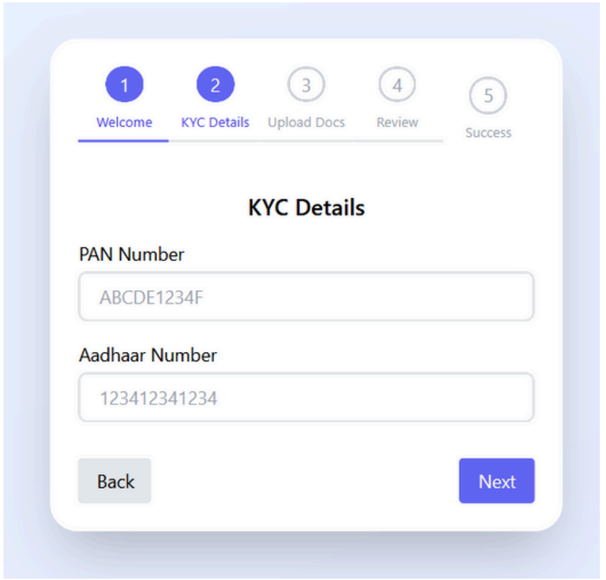

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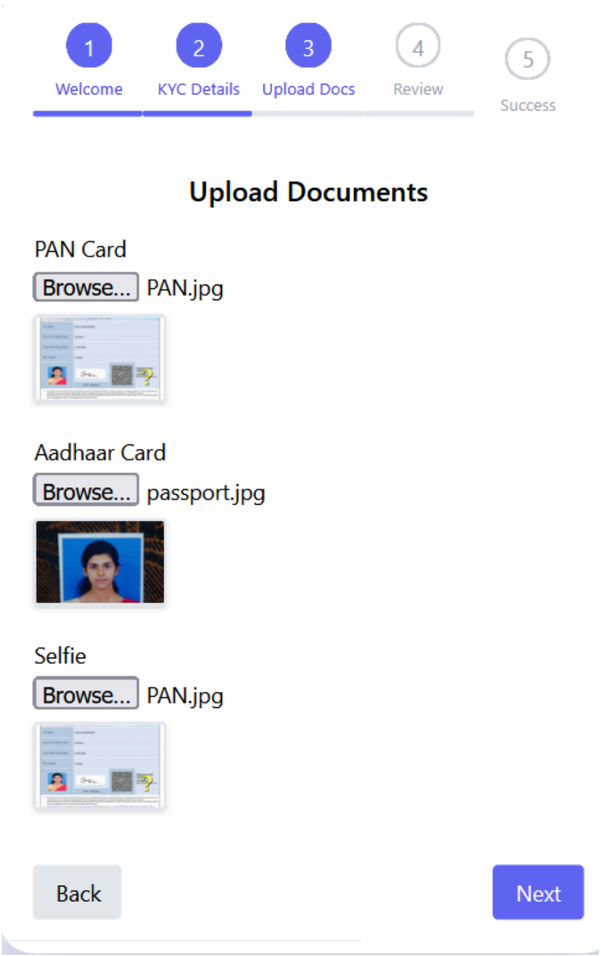

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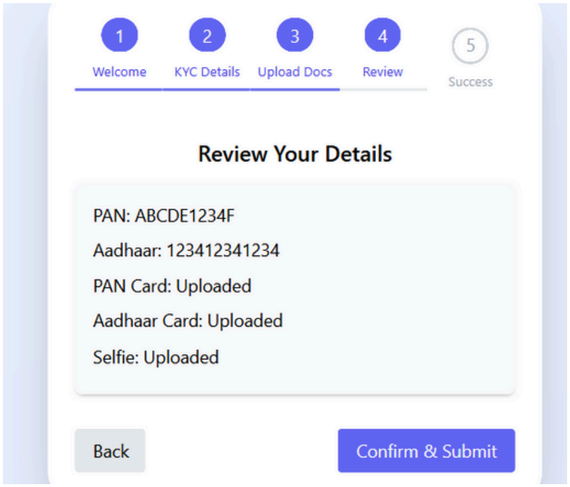
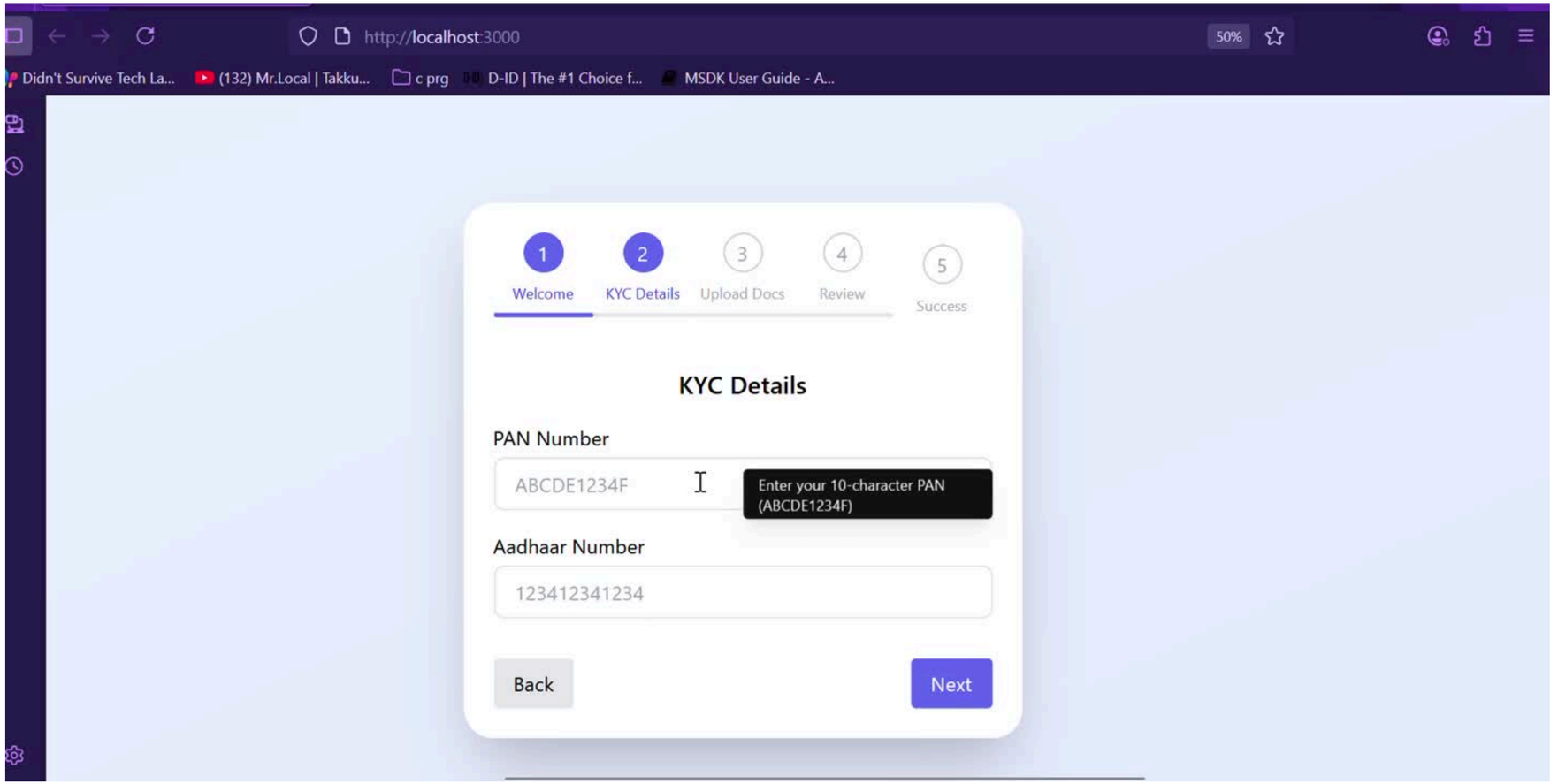


OUTPUT VIDEO



GITHUB LINK

CONCLUSION

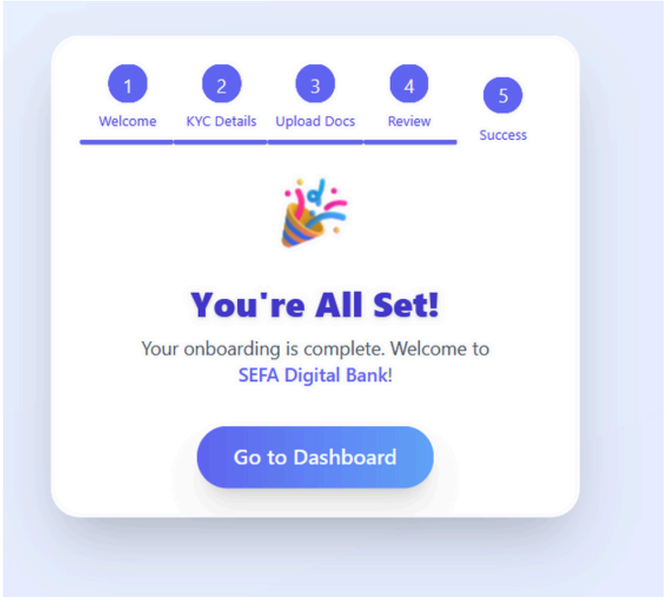
Revamping the banking app onboarding using design thinking and Azure ensures a seamless, personalized, and accessible user experience. This solution boosts user trust, reduces KYC drop-offs, and enhances mobile usability, making onboarding efficient and intuitive

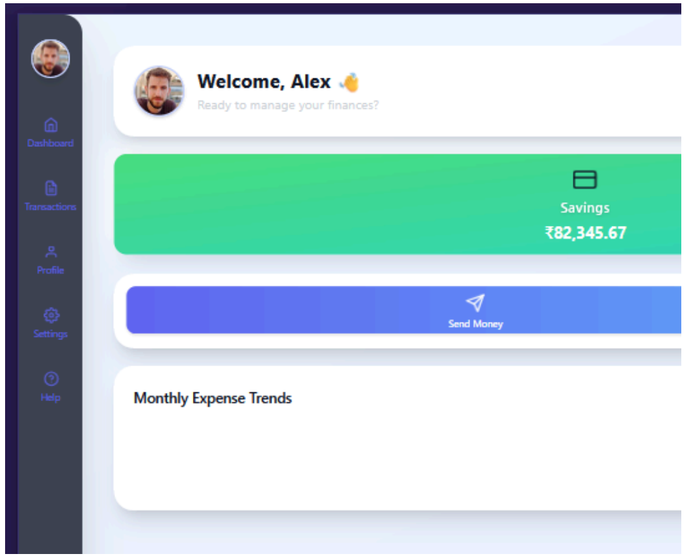
- Integrate AI-powered chatbots for real-time onboarding help
- Enable biometric/KYC automation using facial recognition
- Add multi-language & voice onboarding for accessibility
- Expand to cross-platform banking ecosystems (IoT, wearables)

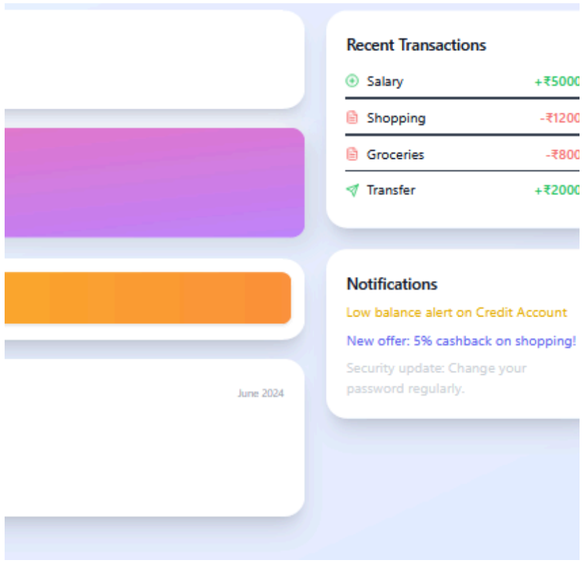
Key Points:

- Enhanced UX reduces friction in fintech onboarding
- Design-led approach improves user retention & trust
- Scalable on Azure for enterprise-level deployment
- Personalization & accessibility drive adoption

EXPERIMENTAL RESULTS







PENDING WORK

Day	Date	Phase	Activities	Deliverables
1	23 Jul 2025	Research & Planning	Finalize core problem, UX	Problem statement, tech stack, goal
2	25 Jul 2026	Design Thinking + Wireframe	Sketch journey, user persona, low-fi	Wireframes, onboarding flow
3	25 Jul 2025	Frontend Dev Setup	Setup Streamlit/React app, navigation, form flow	Initial UI working
4	24 Jul 2025	Backend + Azure Setup	Setup Flask backend or Node.js, connect	Deployed backend on Azure
5	27 Jul 2025	Testing & UX Polish	Run usability testing, optimize UI/UX, improve mobile responsiveness + accessibility	UX fixes + feedback loop
6	29 Jul 2025	Docs + Final Touch	Write README, finalize animations, documentation, polish UI	Final documentation + complete interface
7	31 Jul 2025	Demo + Submission	Record demo, prepare pitch deck,	GitHub repo, demo video, live app, report

REFERENCES

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- https://onlinelibrary.wiley.com/doi/10.1111/ijcs.12989 file:///C:/Users/admin/Downloads/JETIR2304734.pdf
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THANK YOU