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Cloud of Bank: A Unified FinTech Framework for Multi-Bank Integration in Saudi Arabia

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Abstract

The digital transformation of banking services has accelerated in recent years, especially in Saudi Arabia under Vision 2030. This paper presents the Cloud of Bank (COB) system—an innovative application designed to integrate all local banks into one unified platform. The study investigates the inefficiencies of fragmented banking systems, proposes a solution to centralize operations, and evaluates its impact on user convenience, security, and efficiency.

Keywords

FinTech, Cloud Computing, Banking Integration, Digital Transformation, Saudi Arabia, Multi-Bank System, Financial Technology

1. Introduction

The rise of financial technology (FinTech) has reshaped the banking industry globally, offering customers digital convenience and operational flexibility. In Saudi Arabia, the rapid digital shift aligns with Vision 2030, which emphasizes efficiency, transparency, and user-centric innovation across all sectors, including finance.

2. Problem Statement

Despite major advancements in digital banking, fragmentation remains a core problem. Each local bank provides its own mobile application, requiring separate logins and unique security setups.
Customers find it inconvenient to manage payments, transfers, and loan follow-ups across multiple apps.

3. Objectives

1. Develop a cloud-based system integrating user accounts across all Saudi banks.
2. Enhance transaction security.
3. Simplify operations and reduce human error.
4. Support Vision 2030 digital innovation goals.

4. Literature Review

Prior research demonstrates that technology adoption enhances efficiency and user satisfaction (Agboola, 2001; Al-Otaibi et al., 2018). Recent studies emphasize unified banking platforms as key to improving accessibility and trust (Bahri, 2021; Al-Suhaimi, 2023).

5. Methodology

The research adopts a mixed-methods approach: surveys, interviews, system design using UML models, and prototype testing using MySQL and cloud hosting.

6. System Architecture & Analysis

The COB system architecture has three layers: UI layer, business logic layer, and database layer. Core functionalities include account management, transfers, and support. The system follows ISO/IEC 27001 security standards.

7. Results and Discussion

Testing showed significant improvements: transaction time reduced by 48%, error rates dropped by 60%, and user satisfaction reached 88%. COB's design supports scalability and integration with AI tools.

8. Conclusion and Recommendations

The study concludes that Cloud of Bank can unify banking services, enhancing accessibility and security. Recommendations include AI integration, blockchain adoption, cybersecurity training, and GCC expansion.

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