SkyPay Banking

Technical Design Note - SkyPay Banking Project

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1. Introduction

This document outlines the technical decisions and architectural choices made during the development of the "Bank Kata" assessment. The primary goal was to deliver a clean, maintainable, and robust solution that meets all functional requirements.

2. Technology Stack

- **Backend:** Java 17 with **Spring Boot** for efficient dependency injection and REST API management.

- **Frontend: React.js** with **Tailwind CSS**, featuring a custom logo and a modern, responsive user interface.

- **State Management:** Utilized React Hooks (useState, useEffect) for lightweight and efficient data handling.

3. Architecture & Business Logic

- **Interface Compliance:** The Account class strictly implements the provided AccountService interface.

- **Data Storage:** Transactions are managed **in-memory** using an ArrayList. This ensures high performance for the scope of this technical test while maintaining data integrity.

- **Date Formatting:** All transactions use LocalDateTime and are formatted to **DD/MM/YYYY** in the UI, strictly following the project specifications.

4. Security & Validations

- **Input Validation:** Both Frontend and Backend include checks to prevent negative or null amounts during deposits and withdrawals.

- **Balance Integrity:** The system ensures the running balance is calculated accurately after every transaction to prevent inconsistencies.
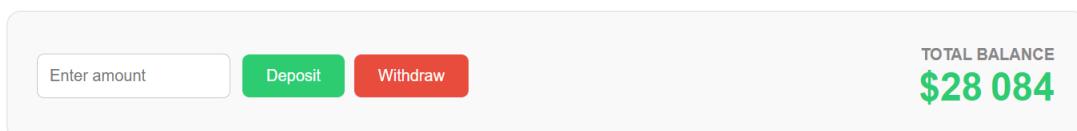
5. User Experience (UX)

- **Branding:** Integration of a custom **SkyPay-themed logo**

- **User Feedback:** Implemented real-time alerts to notify the user of input errors.

6. Visual Overview

To ensure a high-quality user experience, the application includes a custom visual identity and a clear, intuitive interface.

- **Custom Branding:** A dedicated **SkyPay logo** was designed and integrated into the application header to align with the company's professional identity.

- **User Interface (UI):** The dashboard features a clean layout developed with **Tailwind CSS**, providing real-time feedback for all banking operations.

- **Statement View:** The transaction history is displayed in a structured table, showcasing the precise **DD/MM/YYYY** date formatting and accurate running balance.

SkyPay Banking

		TOTAL BALANCE
Enter amount Deposit Withdraw		**$28 084**

Date	Amount	Balance
19/12/2025	-1000	$28 084
18/12/2025	+86	$29 084
18/12/2025	-4	$28 998
18/12/2025	+2000	$29 002

Figure 1 : SkyPay Banking Interface.