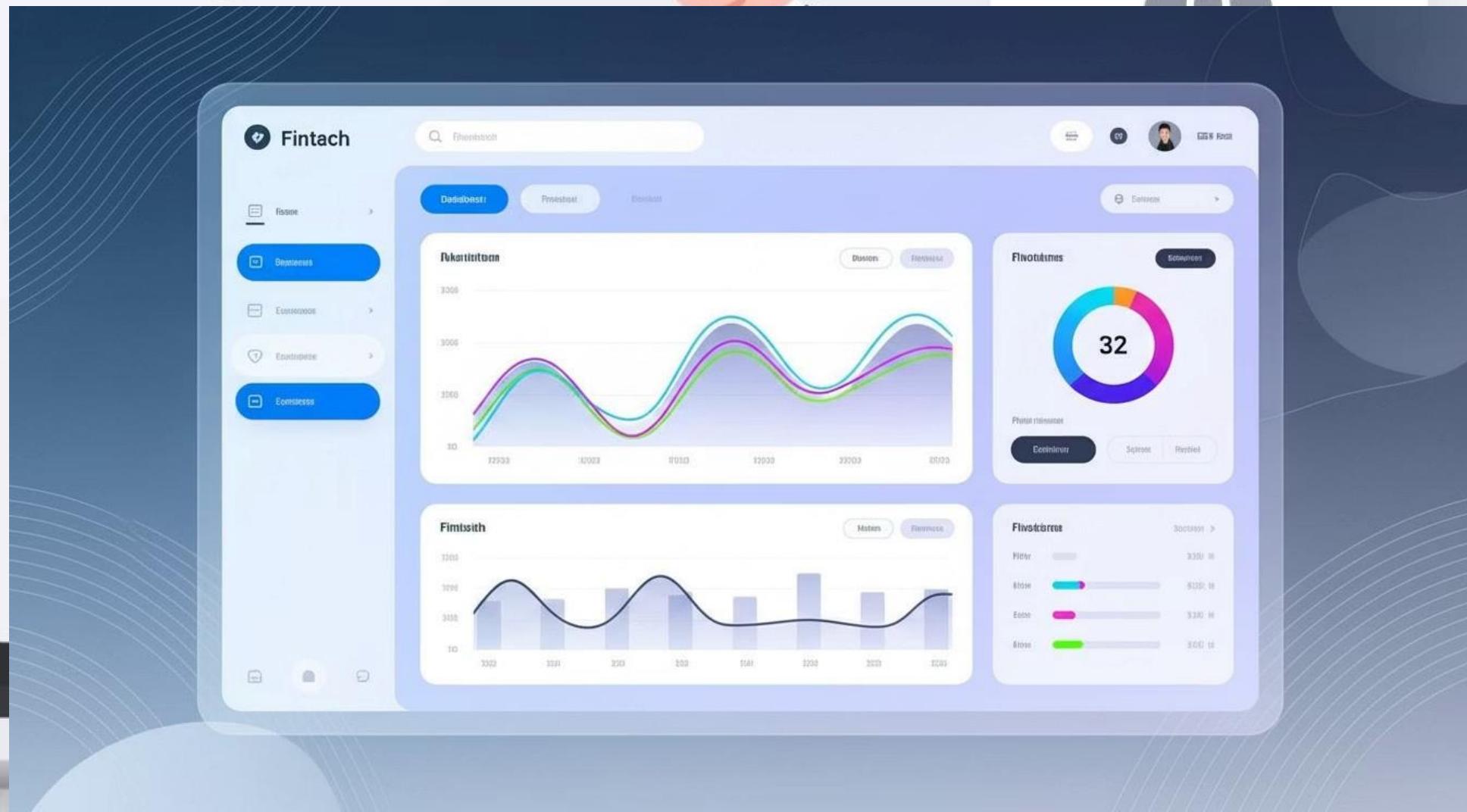


# SavingDM: Elevating Digital Finance with Intelligent Innovation

SavingDM is a digital savings, transactions, peer-to-peer transfers, notifications, AI assistant, device management, and admin-controlled fintech management platform. The system includes real-time AI support, security-focused authentication, automated notifications, admin analytics, and user feedback features.

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# Objectives

The SAVINGDM platform is designed with a clear set of objectives aimed at providing a comprehensive, secure, and intuitive financial management experience for users, while also equipping administrators with robust oversight capabilities. These objectives guide the system's architecture, feature development, and overall user experience.



## Enhance User Financial Management

To empower users with effective tools for managing their savings, conducting transactions, and overseeing their financial health. This includes providing clear dashboards, detailed transaction histories, and intelligent insights to foster better financial habits and decision-making.



## Provide Intelligent Assistance

To integrate an AI assistant capable of offering real-time financial advice, answering queries, and assisting with tasks such. This objective focuses on making complex financial concepts accessible and providing proactive support to users.



## Ensure Robust Security & Device Management

To implement state-of-the-art security protocols for user data and transactions, including device validation and multi-factor authentication. This ensures the integrity and confidentiality of financial information, building user trust and preventing unauthorized access.



## Facilitate Seamless Peer-to-Peer Transfers

To enable quick, secure, and convenient peer-to-peer (P2P) money transfers within the platform. The goal is to simplify sharing funds between individuals, making it as effortless as possible while maintaining high security standards.



## Empower Administrators with Comprehensive Control

To provide administrators with a powerful dashboard for managing users, overseeing system performance, and generating analytics. This includes tools for content moderation, system configuration, and monitoring key metrics to ensure platform stability and user satisfaction.



## Deliver Timely & Relevant Notifications

To develop a dynamic notification system that keeps users informed about their account activities, financial insights, and important system updates. Notifications are designed to be customizable and intelligent, ensuring they are both helpful and not intrusive.

By focusing on these core objectives, SAVINGDM aims to deliver a superior digital finance platform that is not only functional but also deeply secure, intelligent, and user-centric, meeting the evolving demands of modern financial management.



# Objectives

The primary objectives for the SavingDM platform are:

## Secure Platform

Provide a secure platform for users to manage savings and transactions.

## Admin Monitoring

Allow administrators to monitor users, devices, logs, feedback, AI interactions, and analytics.

## AI Integration

Integrate intelligent AI assistance using Ollama + Django backend + React frontend.

## User-Friendly UI

Provide a transparent and user-friendly UI for managing savings and tracking transfers.

# Technologies Used

SavingDM leverages a modern tech stack to deliver a robust and scalable solution.

## Backend

- Django
- Django REST Framework
- SimpleJWT
- PostgreSQL
- Ollama

## Frontend

- ReactJS
- TailwindCSS
- Axios
- React Router
- Context API

## Security

- JWT Auth
- Device Tracking
- Admin Logs
- IP + Timestamp Metadata

## AI

- Local LLM with Streaming SSE
- EventSourcePolyfill
- Custom AI Assistant

# System Modules

The SavingDM platform is composed of several interconnected modules, each serving a specific function:



Authentication & Sessions



Dashboard & Transactions



Deposits & Withdrawals



Peer-to-Peer Transfers



AI Assistant (User) + Admin  
AI Viewer



Notifications System



Device Monitoring



Admin Analytics



User Feedback Module

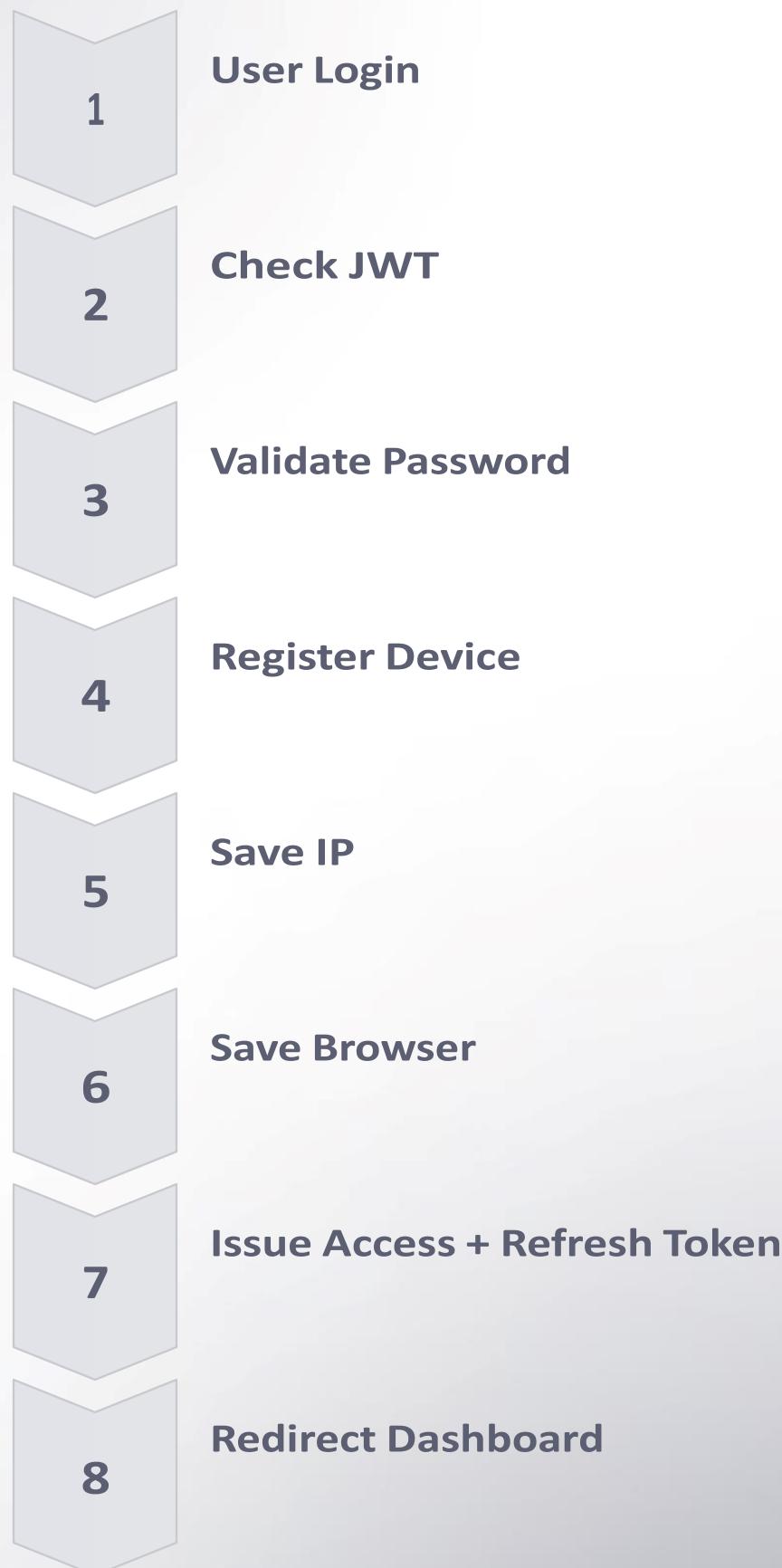
# Database Diagram (Text-Based ERD)

The core entities and their relationships within the SavingDM database are as follows:

```
Users (id, username, password, is_staff, email, ...)  
--- Devices (id, user_id, ip_address, device_name, last_seen)  
--- Feedback (id, user_id, title, message, rating, status)  
--- AIConversation (id, user_id, title, mode, updated_at)  
--- AIMessages (id, conversation_id, role, content, timestamp)  
--- Transactions (id, user_id, amount, type, method, status)  
--- PeerTransfers (id, sender_id, receiver_id, amount, created_at)
```

# Flowchart 3 Login with Device Validation

The login process incorporates robust device validation for enhanced security.



# Flowchart 3 AI Assistant (Streaming)

The AI Assistant provides real-time, streaming responses to user queries.

01

**User Message**

02

**POST /assistant/stream**

03

**JWT Authentication Check**

04

**AI Generator (Ollama)**

05

**Stream Chunks via SSE**

06

**Save History**

07

**Send final "done" event**

# Use Case Diagram

This diagram outlines the key interactions between users, administrators, and the SavingDM system.



# Feedback Module 3 Specification

The feedback module allows users to provide input and administrators to manage it effectively.

## User Capabilities:

- Submit feedback
- Rate the experience (1-5)
- Mark feedback as public or private

## Admin Capabilities:

- View all feedback
- Change status: in\_progress <sup>3</sup> resolved <sup>3</sup> closed
- View user meta (username, timestamp)

# Security Design & System Architecture

SavingDM is built with a strong focus on security and a scalable layered architecture.

## Security Design

- JWT Access + Refresh token rotation
- Device tracking per login
- Forced logout when token invalid
- Rate limiting on login & feedback
- CORS controlled for SSE streams

## System Architecture (Layered)

- Frontend (React)
- Axios
- Backend API (Django REST)
- Service Layer (AI, Transactions, Notifications)
- Database (PostgreSQL)
- AI Local Model (Ollama)

## Admin Panel Features

The admin panel provides comprehensive tools for system oversight.

- Dashboard statistics
- User list + device list
- Login activities
- Transfer monitoring
- Feedback management
- AI conversation inspector

## Conclusion

SavingDM is a complete financial management system with built-in AI support, layered security, an admin hub, user-friendly tools, and a scalable architecture ready for deployment.