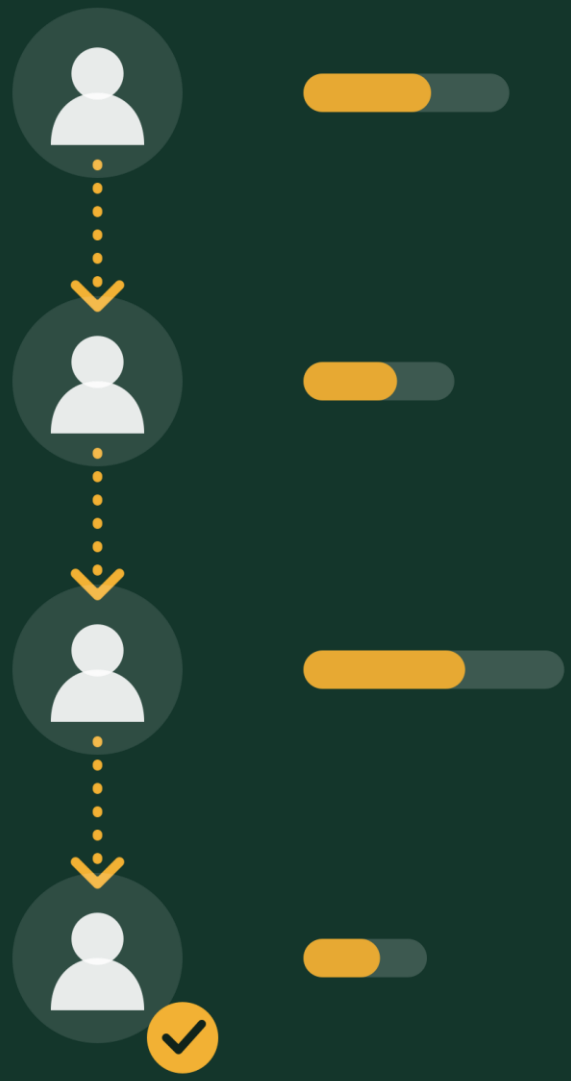
FINAL YEAR PROJECT

# TransactPro

## Financial Transaction and Approval System

An automated financial transaction and approval management system

- Case Study: JESE Uganda



**Presented by Ninsiima Pearl Mary**

# Overview of the Project

## The problem

Financial work at JESE was done on paper. That meant delays in approvals, difficulty tracking transactions, and weak records of who spent what and whether receipts were returned.

## The solution

TransactPro is a web-based system that digitises financial planning, fund requests, approvals, expenditure, accountability and receipts on one platform, so every step is faster, visible and accountable.

## The financial workflow

**1 Plan**
Staff, Manager, Finance

→

**2 Request**
Staff

→

**3 Approve**
Manager, Finance, Director

→

**4 Pay**
Finance

→

**5 Account**
Staff, with receipts

→

**6 Verify**
Finance closes it

**5**
kinds of user: Staff, Manager, Finance, Director, Admin

**14**
tables in MySQL

**UGX 10M**
and above also needs the Director

**Live**
transactpro.rwenzorilabs.com

# Module Description

## 1 Authentication and access

Secure sign-in, user accounts, role-based access and account lock after repeated failures.

## 2 Projects, teams and budgets

Projects with budget lines and one team per project. People only see their own project.

## 3 Financial planning

Staff draft plans, then Manager and Finance approve, reject or return them.

## 4 Fund requests

Requests tied to a project, budget line and approved plan, checked against the available budget.

## 5 Approvals

Manager, then Finance, then the Director for high-value requests, with comments and full history.

## 6 Payments

Finance records each payment once, with method and reference, and sets the accountability deadline.

## 7 Accountability and receipts

Staff list each receipt and the items bought, upload the receipt and return any balance.

## 8 Verification and reports

Finance verifies and closes, unspent money goes back to the budget. Reports export to CSV.

## 9 Notifications, audit and settings

Pop-up alerts, an audit trail of every action, and admin settings such as the threshold.

# Operational Environment

## Built and tested with

- Windows with XAMPP (Apache)
- PHP for the back end
- MySQL for the database
- HTML, CSS and JavaScript for the screens
- Visual Studio Code and Google Chrome

## Hardware and users

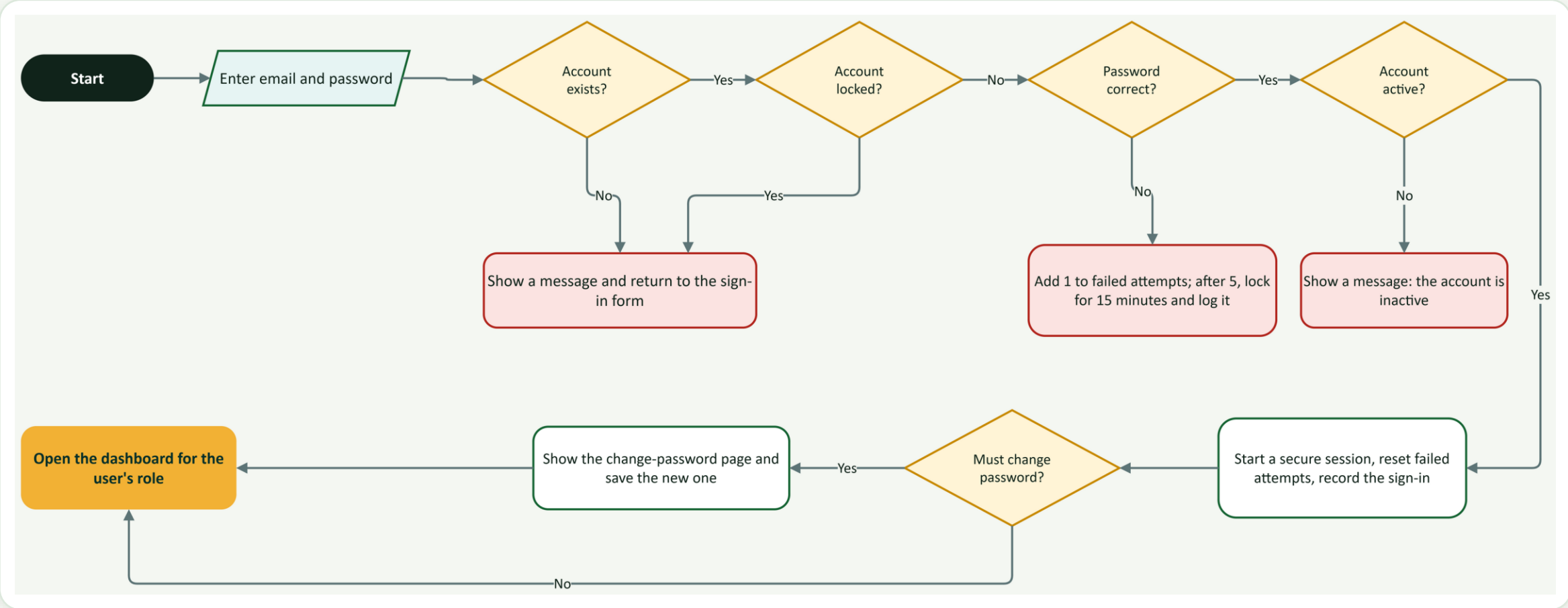
- Laptop or desktop computer with at least 4 GB of memory
- A web browser and a network connection
- Five roles: Staff, Manager, Finance, Director and Admin

## Runs online on

- Hostinger VPS with Ubuntu 24.04
- Docker: PHP with Apache, and MySQL 8
- Caddy gives automatic HTTPS
- transactpro.rwenzorilabs.com

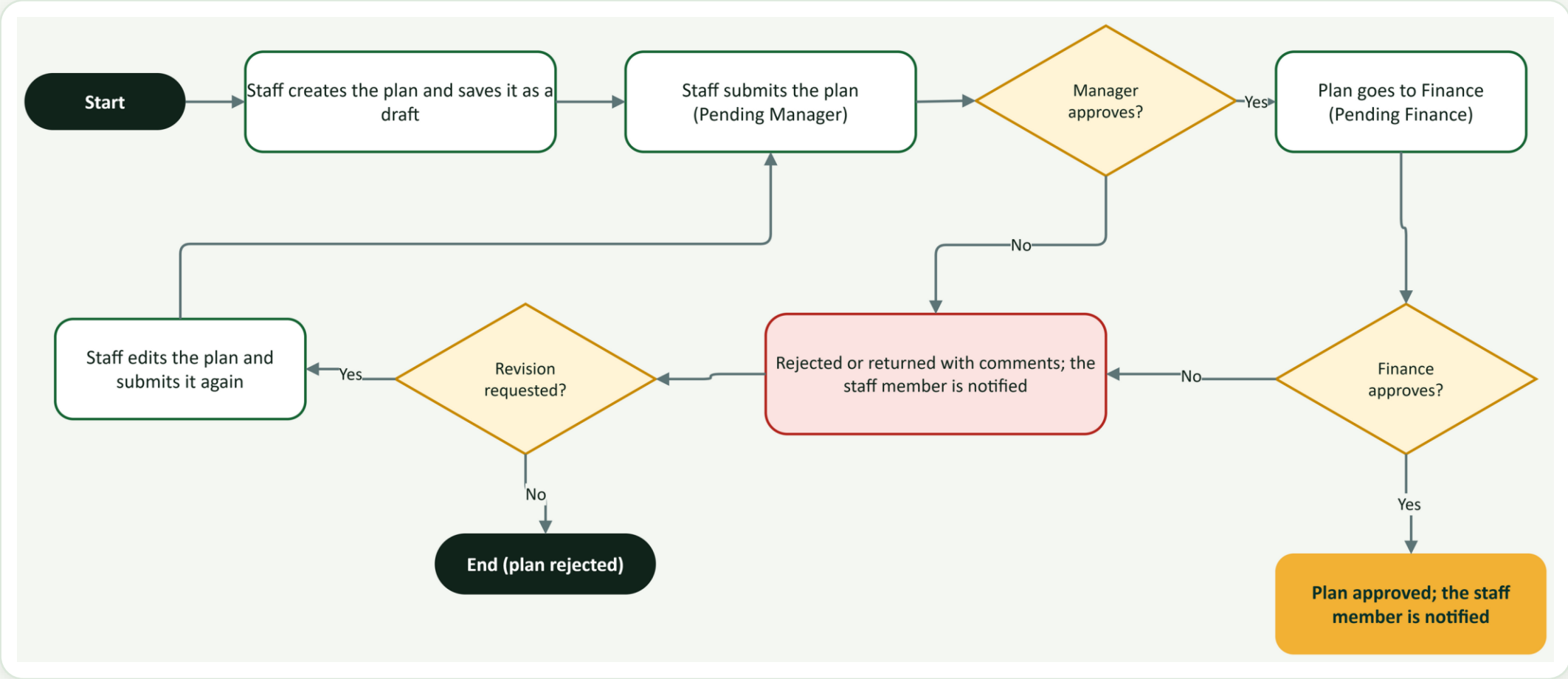
**Security:** hashed passwords, CSRF protection, account lock after 5 failed sign-ins, automatic sign-out after 30 minutes idle, full audit log

# Flowchart: Sign-in Process



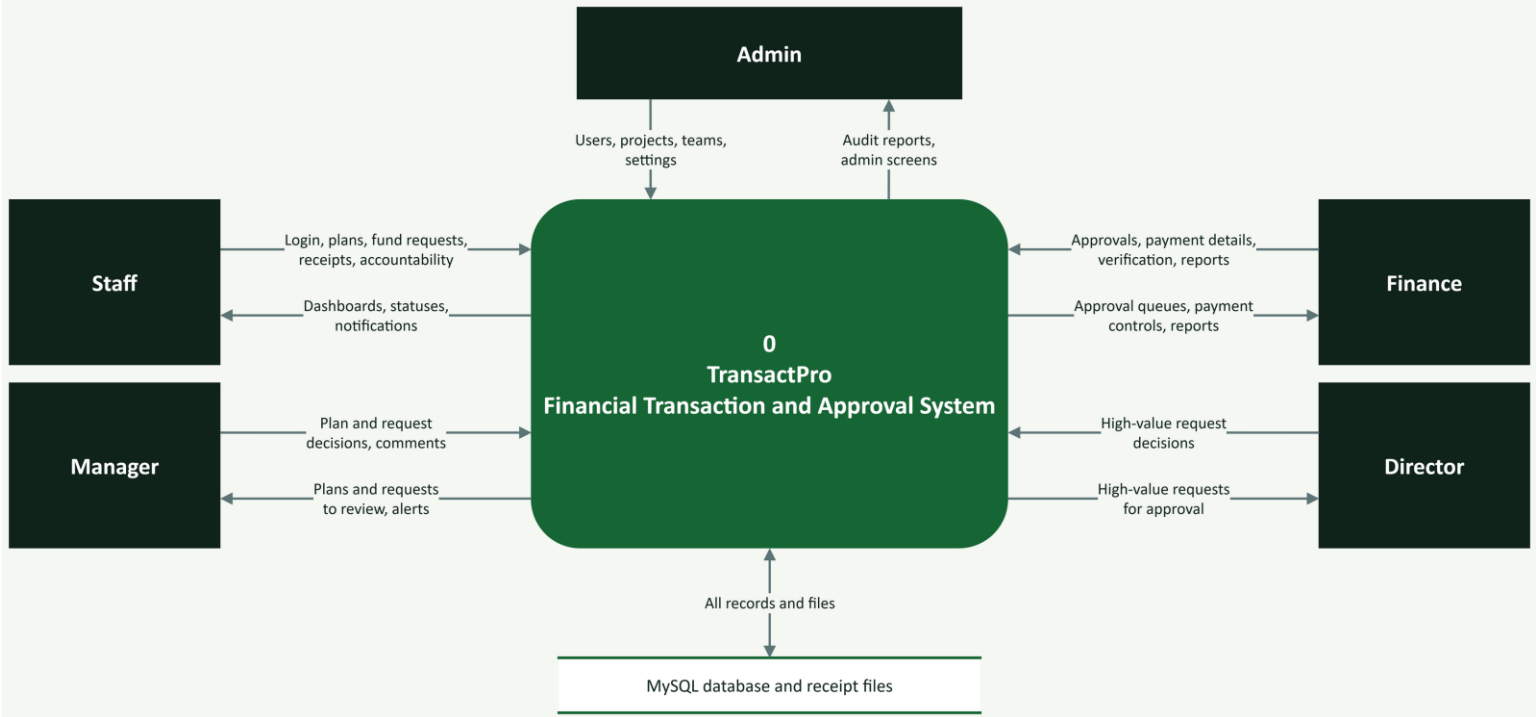

Wrong passwords are counted. After 5 failures the account locks for 15 minutes, and every lock and sign-in is written to the audit log.

# Flowchart: Financial Plan Approval




A plan needs two approvals, Manager then Finance. Rejected plans come back with comments and can be revised and resubmitted.

# Data Flow Diagram: Level 0




Outside party

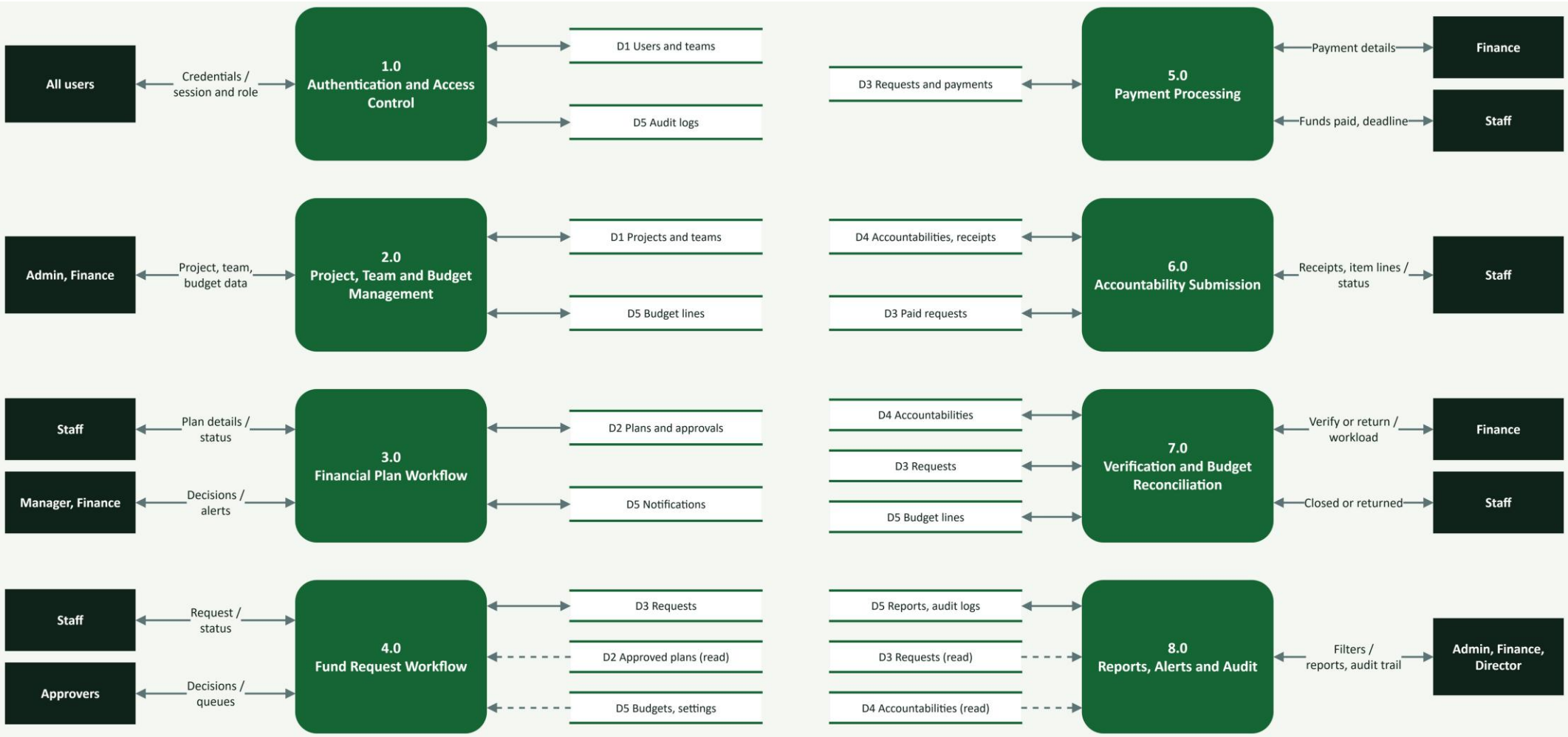
Process

Data store

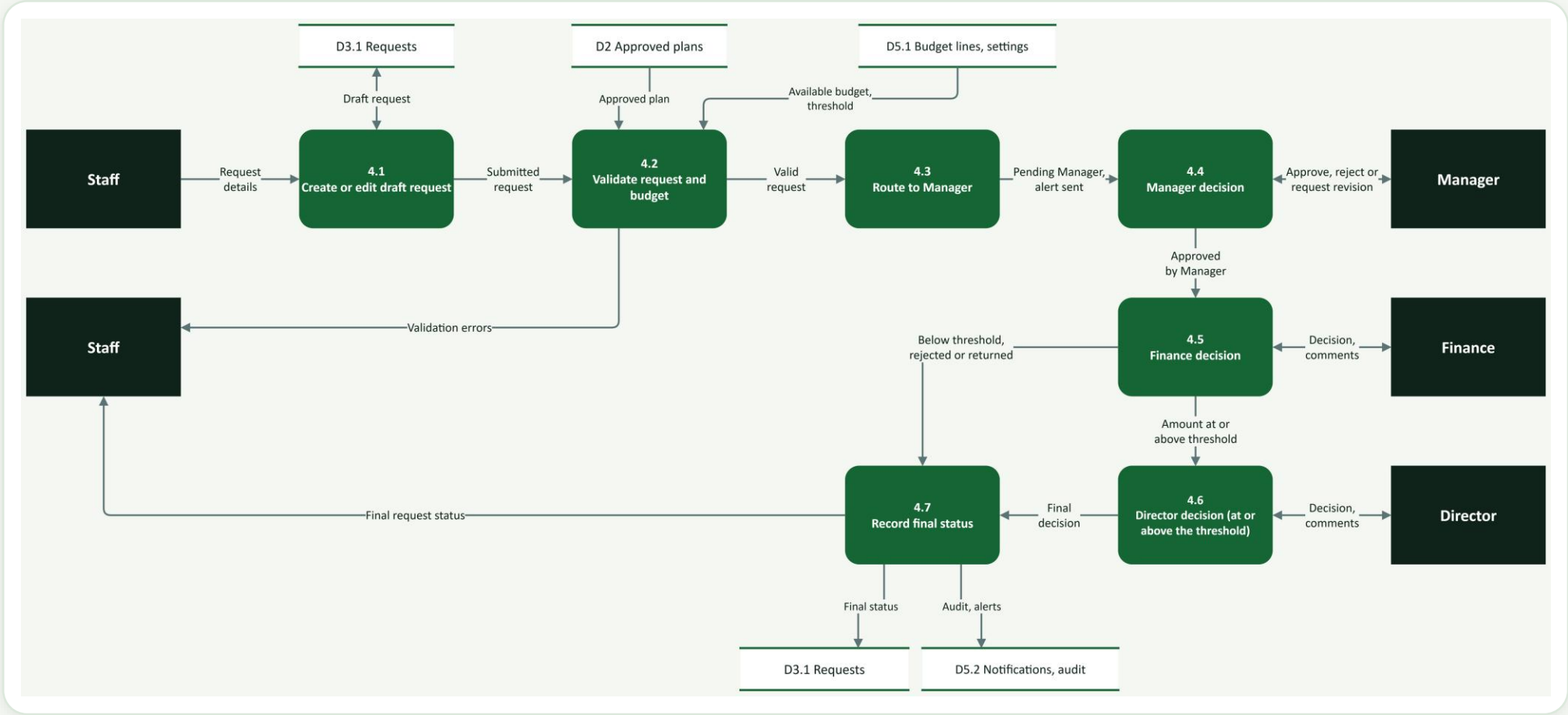
Data flow

Level 0 shows the whole system as one process, with five kinds of user and one database.

# Data Flow Diagram: Level 1

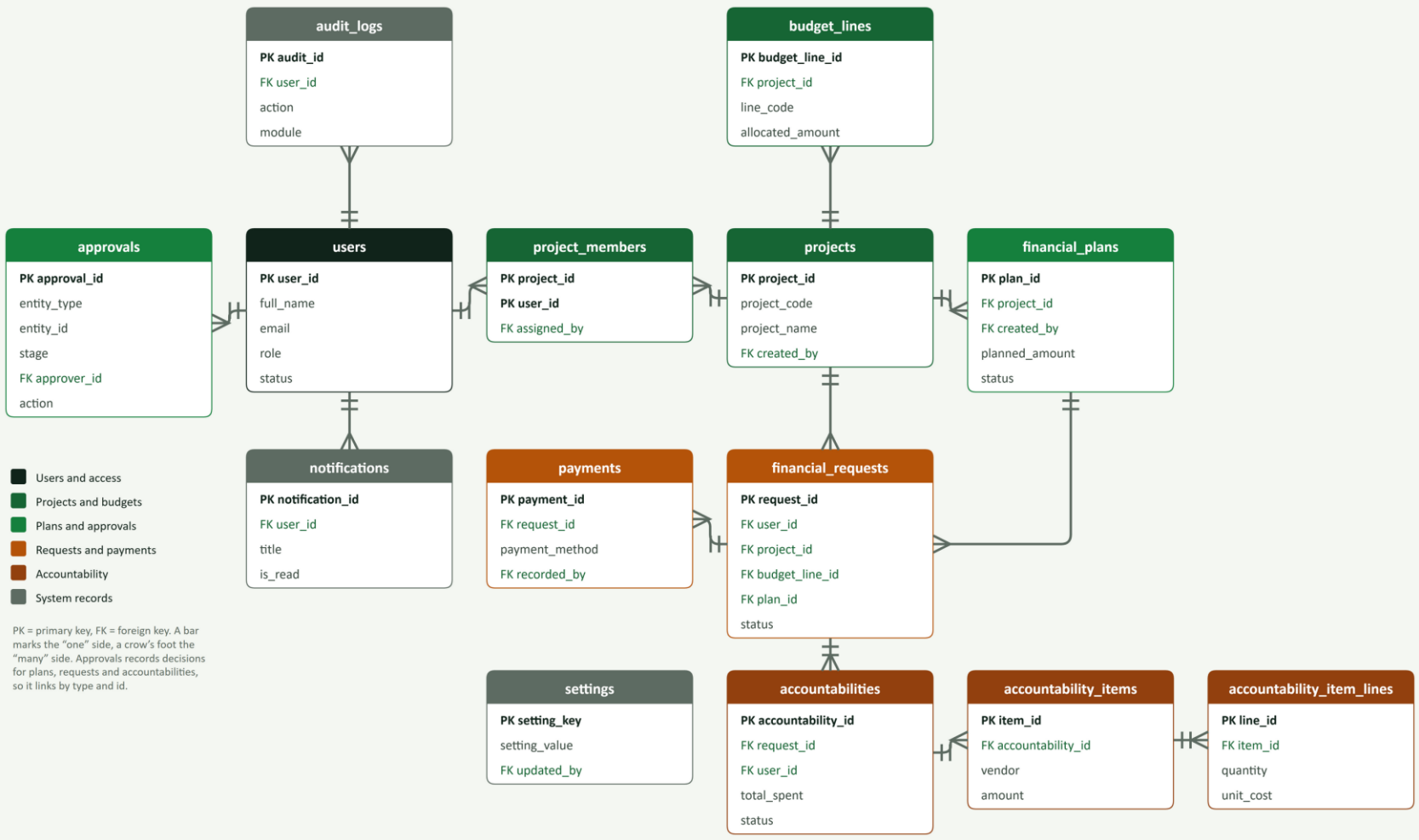


# Data Flow Diagram: Level 2




Process 4.0, the fund request workflow, in seven steps. Requests of UGX 10,000,000 or more also go to the Director.

# E-R Diagram




**14**

tables in MySQL, linked by 22 foreign keys

**Once**

one payment and one accountability per request, enforced by the database

**Traceable**

every decision is kept in approvals and every action in the audit log