DF_Ticketing System

A Visual Overview of the Financial Workflow Engine

System at a Glance

The DF_Ticketing System is a comprehensive, web-based platform designed to streamline and automate financial requests across the Deshpande Foundation and its associated entities.

3	**5+**	**3+**
Core Workflows	**User Roles**	**Supported Entities**
Reimbursement, Procurement, and Advance	From Employees to Admins and Finance	DF, DET, Sandbox Startups, and more

System Architecture & Technology

Three-Tier Logical Architecture

The system is built on a robust and scalable 3-tier model, separating concerns for maintainability and performance. This structure ensures a clear data flow from user interaction to data storage.

① **Presentation Layer (Frontend)**
Built with **ReactJS**. Manages the user interface and all client-side interactions.

↓

② **Application Layer (Backend)**
Powered by **NodeJS & Express.js**. Contains all business logic, handles API requests, and enforces security.

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③ **Data Layer (Database)**
Utilizes **MySQL**. Responsible for the persistent storage and retrieval of all system data.

Technology Stack

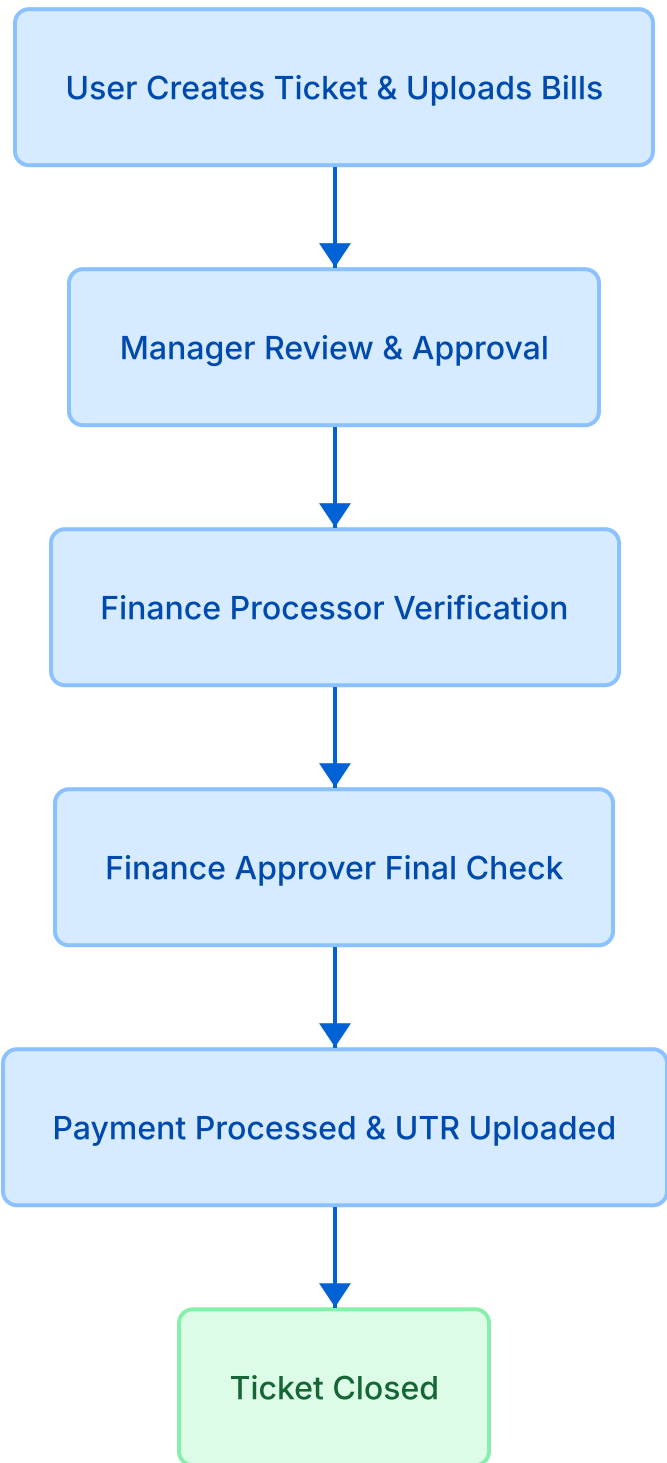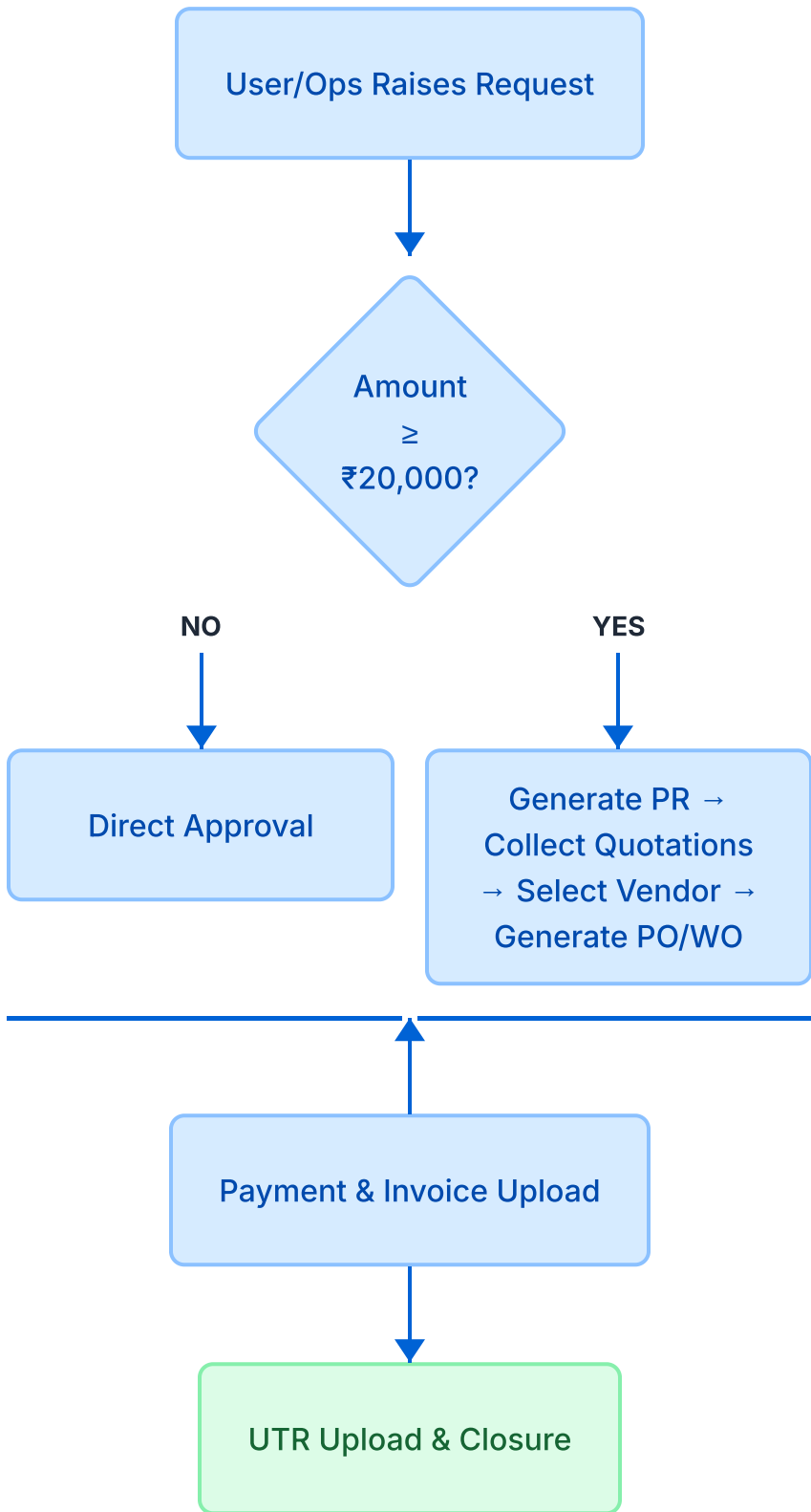A modern, reliable stack ensures the system is secure, performant, and developer-friendly.

🖥️ **ReactJS**	⚙️ **NodeJS**
🗃️ **MySQL**	☁️ **AWS EC2**
🔑 **JWT Auth**	🔁 **Axios API**

Core Financial Workflows

Reimbursement Workflow

- User Creates Ticket & Uploads Bills
- ↓
- Manager Review & Approval
- ↓
- Finance Processor Verification
- ↓
- Finance Approver Final Check
- ↓
- Payment Processed & UTR Uploaded
- ↓
- Ticket Closed

Procurement Workflow

- User/Ops Raises Request
- ↓
- Amount ≥ ₹20,000?
  - **NO** → Direct Approval
  - **YES** → Generate PR → Collect Quotations → Select Vendor → Generate PO/WO
- ↓
- Payment & Invoice Upload
- ↓
- UTR Upload & Closure

Advance Workflow

- User Requests Advance Amount
- ↓
- Manager & Finance Approval
- ↓
- Advance Paid to User
- ↓
- User Uploads Bills Post-Expense
- ↓
- Finance Reconciles Bills
- ↓
- Balance Settled & Closed
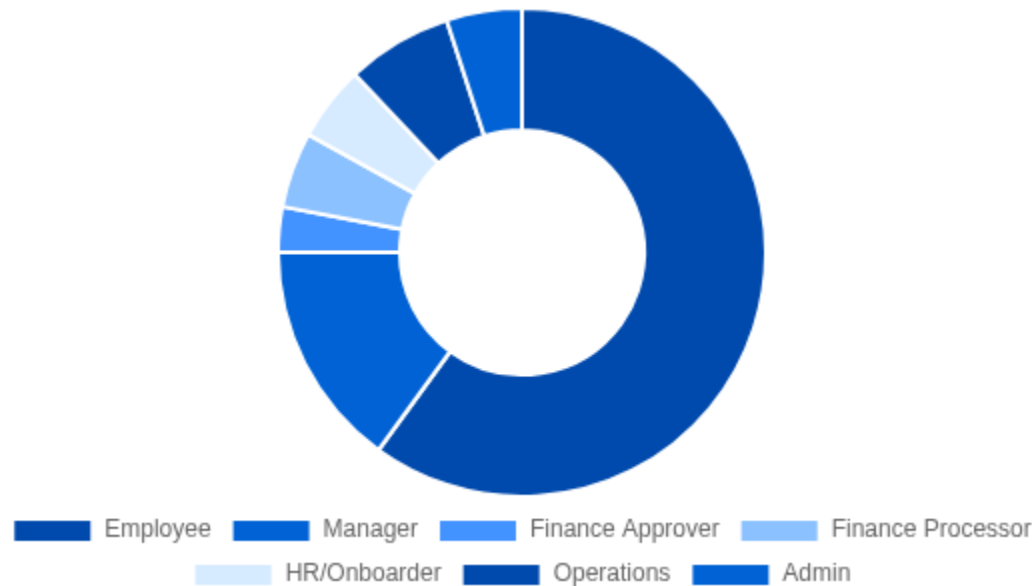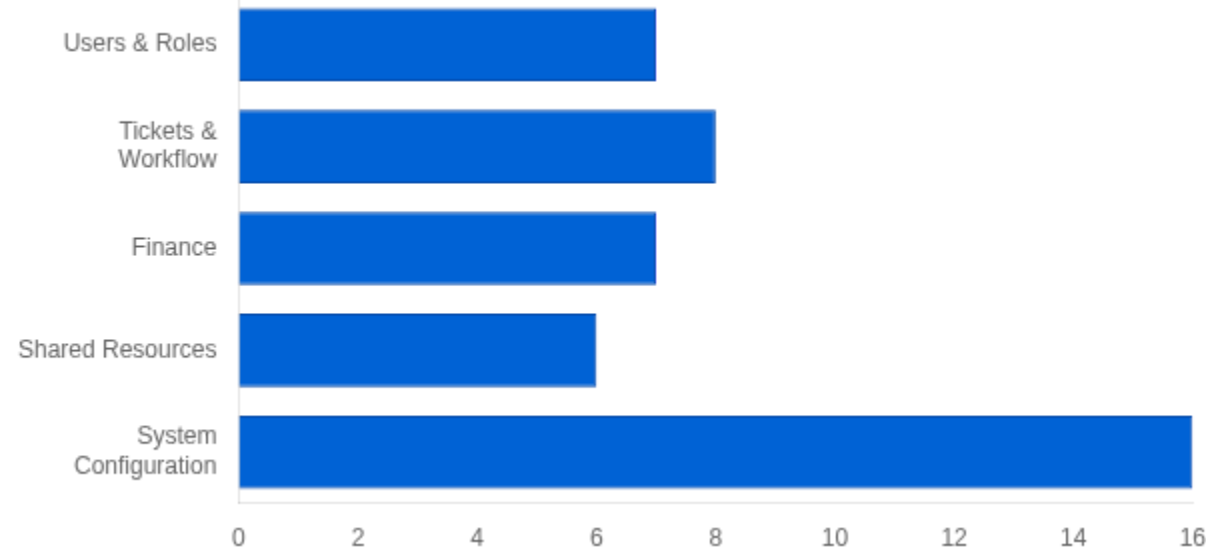
User Roles & Data Universe

Role-Based Access Control

The system provides granular control over data and features, ensuring users only see what's relevant to their role. This enhances security and simplifies the user experience.

Employee, Manager, Finance Approver, Finance Processor, HR/Onboarder, Operations, Admin

Database Composition

The MySQL database is logically organized into functional groups to manage the system's complex data requirements efficiently.

Group	Value
Users & Roles	7
Tickets & Workflow	8
Finance	7
Shared Resources	6
System Configuration	16

Key System Features

🔒 **Role-Based Access**	📜 **Full Audit Trail**	📎 **Document Management**	📊 **Dashboard & Reports**
Secure modules for each user type.	Complete history logs for tickets & reports.	Upload and track all related files (bills, POs).	At-a-glance summaries and data filtering.
💹 **Tally Integration**	🏦 **Bank Format Export**	📧 **Email Notifications**	🔍 **Advanced Search**
Export data for accounting software.	Simplify payment processing with exports.	Keep users informed of status changes.	Easily find tickets, reports, or documents.