



User Categories

- Admin: Full system control; configuration, imports, health checks, access management.
- Principal: Academic oversight; divisions planning, enrollment and fees analytics, announcements.
- Clerk: Data operations; bulk imports, fees verification, receipts, cleanup.
- Faculty: Teaching workflows; attendance, materials, subject lectures, absentees.
- Student: Consumption; notices, materials, fee status view, language preferences.

Modules Overview

- Dashboard: Quick actions and status cards.
- Announcements: Create and view notices, targeted to programs/mediums.
- Attendance: Mark and review attendance, threshold reports.
- Students: Roster management, search, CSV export.
- Subjects: Catalog, filters, assignments.
- Materials: Upload and publish teaching content; track published/flagged.
- Staff: Faculty and staff directory.
- Divisions: Capacity planning, sections, utilization analytics.
- Fees Module: Heads, payments, verification, receipts, bank details.
- Programs: Program list and metadata.
- Admin Module: Imports, system status, configuration.
- Reports: Enrollment, fees, attendance, materials, divisions; exports.
- Documents: User manuals and brochure; print/export.
- Manage Accounts: Create users, roles, language preference.
- Notice Board & Archive: Student-facing notices and history.

Role-based Access

- Admin: Access to all modules including Admin Module, Programs, Divisions, Fees, Reports, Documents, Manage Accounts, System Status.
- Principal: Dashboard, Announcements, Divisions, Programs, Reports, Documents; read-only on some admin views.
- Clerk: Fees Module (verification, receipts), Students/Subjects imports, Reports (fees/enrollment); limited admin operations.
- Faculty: Attendance, Materials, Subject Lectures, Absentees; limited Reports.
- Student: Notices, Materials, personal fee view (if enabled), language toggle.

Reports & Exports

- Enrollment Summary: Filter by Program, Semester, Medium; totals per semester.
- Fees Summary: Status counts; export CSV.
- Fees Program Status: Buckets (Full/Partial/None), per-student Paid and Outstanding; program mediums are dynamic.
- Attendance Threshold Report: Below/Above threshold list with subject filters; summary header and CSV.
- Subject Lectures: Distinct session counts by date/period/division; date range filter and CSV.
- Division Capacity vs Enrolled: Capacity, enrolled, utilization, medium split.

Operational Workflows

- Imports: Use Dry-run; fix errors; commit only after validation. Review Import Logs.
- Fees Verification: Clerk verifies payments (UTR/proofs); receipts issued after verification.

- Attendance: Faculty marks by roll/enrollment; subject-wise compliance and absentees.
- Language: Set preferred in Account Settings; quick toggle EN/GU in nav.

Language & Mediums

- Localization: English and Gujarati UI with t() translations.
- Medium Policy: Programs declare mediums via fee structure; per-student due uses common components plus the student's medium components.
- Medium Filter: In fees reports, medium options load per program/semester; dropdown hides when not applicable.

Security & Health

- Rate Limiting: Defensive defaults; Redis-backed when configured.
- Cache: In-memory or Redis; status shown on dashboard.
- System Status: DB, cache, email, storage checks; Redis check endpoint.

Detailed Role Permissions

This section lists module access and key actions per role.

Module	Admin	Principal	Clerk	Faculty	Student
Dashboard	Full	Full	Full	Full	Limited
Announcements	Create/Manage	Create/Manage	View	View	View
Attendance	Admin Reports	Reports	View	Mark/Reports	View Own
Students	Manage	View	Import/Manage	View	View
Subjects	Manage	View	Import/Manage	View	View
Materials	Manage	View	View	Publish/Manage	View
Staff	Manage	View	View	View	—
Divisions	Manage	Plan/Analyze	View	View	—
Fees Module	Configure	Analyze	Verify/Receipts	View	View
Programs	Manage	View	View	View	—
Admin Module	Full	Limited	Imports	—	—
Reports	Full	Full	Fees/Enroll	Attendance	Limited
Documents	Full	Full	Full	Full	View
Manage Accounts	Full	Limited	—	—	—

Key Workflows (Step-by-Step)

Fees Verification

1. Clerk opens Fees Module → Verification Queue.
2. Review payment proof/UTR, cross-check bank credit if needed.
3. Set status to Verified/Rejected; verified rows generate receipt number.
4. Use Reports → Fees Program Status to monitor Full/Partial/None with filters.

Attendance Marking & Reports

1. Faculty navigates Attendance → select subject, date, period, division.
2. Mark P/A/L; submission persists per student.
3. Use Reports → Attendance Threshold to list below/above compliance.
4. Use Subject Lectures to count sessions (distinct date+period+division).

Imports (Safe Mode)

1. Open Admin Module → Import Students/Subjects/Fees.
2. Run Dry-run; fix errors; re-run until clean.
3. Commit import; check Import Logs for audit.

Fees Computation Details

- Per-student semester due = common components (no medium) + student's medium components for that Program/Semester.
- Paid (semester filter) = sum of verified payments for that Program/Semester; optionally include Submitted.
- Outstanding = $\max(\text{due} - \text{paid}, 0)$; buckets: Full ($\text{paid} \geq \text{due}$), Partial ($0 < \text{paid} < \text{due}$), None ($\text{paid} = 0$).
- All semesters selected: Due hidden; Paid shows cumulative across all semesters.
- Fallback: if fee structure missing, use student's FeesRecord.amount_due for the semester.

Attendance & Roll Numbers

- Roll numbers are convenience identifiers for faculty; canonical ID is enrollment number.
- Policy flag: continuous per Program+Semester (ignores division) can be enabled; else per-division sequential.
- Reports sort by roll within division when applicable; else by enrollment number.

Language & Medium Policy

- Localization: English/Gujarati; language preference via Account Settings and nav toggles.
- Mediums per Program/Semester derived from FeeStructure; dropdown hides if medium not applicable.

Admin Tools & Health

- System Status: check DB, cache, email, storage; Redis badge on Dashboard.
- Redis wiring: cache and rate limits fall back to in-memory; endpoint `/admin/redis-check` confirms status.

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