📄 NHRC SOP Portal Documentation

🔨 Overview

The **NHRC SOP Portal** is a secure web-based system designed for managing Standard Operating Procedures (SOPs), amendments, audit trails, user management, notifications, support tickets, and API keys within an institutional environment. It is built using **Flask**, **SQLAlchemy**, **Flask-Mail**, and **Bootstrap**, offering a modern, role-based portal for document and process governance.

⚙️ Core Features

- ✅ User Authentication (Login, Logout, Password Reset)
- ✅ Role-Based Access Control (Admin, Director, HOD, Research Staff, etc.)
- ✅ SOP Upload, Version Control, Approval Workflow
- ✅ Amendment Management (Two-Stage Workflow)
- ✅ Audit Logs & History Tracking
- ✅ Notifications (Popup & Email)
- ✅ API Key Management
- ✅ Dashboard with Real-Time Charts
- ✅ Support Ticket System
- ✅ User Management (Add, Promote, Suspend, Reset Password)
- ✅ Excel Export (Audit Logs, Amendments, Assignments)
- ✅ REST-like API endpoints (secured with API keys)

📐 Technology Stack

- **Backend:** Flask, Flask-SQLAlchemy, Flask-Migrate
- **Database:** SQLite
- **Frontend:** HTML, Bootstrap, jQuery
- **Email:** Flask-Mail (SMTP integration)
- **Authentication:** Flask-Login
- **Export:** Pandas, WeasyPrint, xlsxwriter
- **File Handling:** secure_filename, uploads folder
- **Security:** CSRF, password hashing, session management, random password generation

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🔐 User Roles

Role	Description
Admin	Full control over the system, users, settings, and logs
Director	Upload, approve SOPs, manage amendments
Head of Department	Upload, approve SOPs, manage amendments
Research Officer	View, read, acknowledge SOPs
Research Assistant	View, read, acknowledge SOPs
Guest, Monitor, Junior Staff	Limited access, view-only or as configured

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🗄 Database Models

- **User** → Manages user credentials, roles, activity status
- **SOP** → Stores uploaded SOP files with metadata and versioning
- **ReadLog** → Tracks which users read which SOPs and when
- **AuditLog** → Logs system actions (upload, approval, delete, restore, etc.)
- **Amendment** → Handles draft/final amendments on SOPs with a two-stage process
- **AmendmentAudit** → Tracks amendment history and user actions
- **SOPAssignment** → Assigns SOPs to users with acknowledgment tracking
- **Notification** → Stores popup notifications for users
- **APIKey** → Manages generated API keys and their validity
- **Setting** → Stores portal settings (name, logo, theme, email)
- **SupportTicket** → Captures user support requests and admin replies

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📁 Main Modules and Functionalities

➤ User Authentication

- Register users (admin-only)
- Login, logout, password change, password reset

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- Role-based page access with decorators (login_required, admin_required)

➤ SOP Management

- Upload files (pdf, doc, docx)
- Automatic versioning (1.0, 1.1, etc.)
- Approval workflow (draft → approved)
- Soft delete and restore
- Read acknowledgment (single & bulk)
- Assign SOPs to users or groups
- View version history

➤ Amendments Management

- Stage 1 → Users submit amendment requests
- Stage 2 → Admin/HOD reviews, updates, reaches consensus, closes amendment
- Automatic email notifications at submission and closure
- Export amendment logs to Excel

➤ Audit Trail

- Logs user actions (login, upload, approval, delete, assignment, etc.)
- View logs by user, action, date
- Export logs to Excel

➤ Dashboard

- Real-time charts (uploads, amendments, category breakdowns)
- Filters by year, month, category, status

➤ Support Tickets

- Users can submit support tickets
- Admins can reply and close tickets
- Sends styled HTML email responses

➤ Notifications

- Admins can send popup and/or email notifications to all users or by role
- Users see unseen notifications until acknowledged

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➤ API Key Management

- Admins can generate, enable/disable, delete, and regenerate API keys
- API keys have optional expiry dates

⚙ Configuration Details

- **Database:** sqlite:///sop_app.db
- **File Upload Folder:** uploads/
- **Allowed File Types:** pdf, doc, docx
- **Email SMTP:** Gmail SMTP server (smtp.gmail.com:587)

🔗 Important Routes

Route	Purpose	Access
/	Home / Dashboard redirect	All
/login / /logout	User login/logout	All
/register	Register user (admin only)	Admin
/upload	Upload SOP	Admin, Director, HOD
/sops / /documents	View/filter SOPs	All
/amendments	View and submit amendments	All
/manage_amendment/<id>	Manage amendment stages	Admin, HOD
/audit-log / /audit-logs/download	View/export audit logs	Admin, Director, HOD
/dashboard / /dashboard_data	View dashboard charts	All
/admin/users	Manage users	Admin
/admin/api_keys	Manage API keys	Admin

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✉️ Email Notifications

- Welcome email with temporary password
- Password reset email
- Amendment submission and closure notifications
- SOP assignment emails
- General admin announcements (via notifications center)

💡 Security Features

- Hashed passwords (generate_password_hash)
- Role-checked routes (login_required, admin_required)
- Soft delete on users and SOPs
- API keys with enable/disable and expiry
- Audit logging on all critical actions

📋 Export Features

- Audit Logs → Excel
- Amendments → Excel
- SOP Assignments → Excel

📊 Dashboard Analytics

- Upload trends by month
- SOP counts by category
- Amendment status (draft/final, raised/closed)
- Summary metrics (total uploads, amendments, categories)

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🔧 Admin Settings

- Portal name and logo
- Admin email address
- Theme color selection
- Enable/disable public registration