



**Swami Keshvanand Institute of Technology,
Management & Gramothan, Jaipur**
Department of Information Technology
Session 2024-25

Students Kit

Project Title: Agent Based Push Mechanism

Requirements Specification (RS)

No.	Requirement	Essential / Desirable	Description of the Requirement	Remarks
RS1	User Login Page	Essential	Secure page for registered users to authenticate and access the system.	-
RS2	User Signup Page	Essential	Allows new users to register by entering credentials and basic info.	-
RS3	Password Encryption	Essential	All passwords must be stored securely using hashing algorithms.	-
RS4	Admin Page	Essential	Interface for admin to view and manage user suggestions and system performance.	-
RS5	Suggestion Analysis Engine	Desirable	AI/ML model to categorize and prioritize suggestions automatically.	Enhances admin efficiency.
RS6	Suggestion Collection System	Essential	Users can submit feedback or suggestions about system performance or improvements.	Can be form-based with optional file uploads.



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RS7	Agent-Based Push Notification Mechanism	Desirable	Agents detect relevant triggers and push updates/suggestions to users/admins in real-time.	Can use WebSockets or Push APIs.
RS8	User Profile Management	Essential	Users can edit their profile, preferences, and notification settings.	Improves user experience.
RS9	Role-Based Access Control (RBAC)	Essential	Different access levels for users and admins to maintain system integrity.	Avoids unauthorized access.
RS10	Logging and Monitoring	Essential	Tracks user activity, agent operations, and system performance.	Important for debugging and auditing.
RS11	Mobile Responsiveness	Desirable	Interface adapts to different screen sizes for better user experience.	Use responsive design frameworks.
RS12	Admin Feedback Loop	Essential	Admins can take actions based on suggestions and update users on implementation status.	Transparency builds trust.

Database Fields Specification

No.	Field Name	Range of valid values for the field	Remarks
1	User ID	Alphanumeric, e.g., "USER001"	Unique identifier for each user.
2	Admin ID	Alphanumeric, e.g., "ADMIN01"	Unique identifier for each admin.
3	Message ID	Integer, e.g., 1001	Unique identifier for each message being pushed.
4	Message Content	Text, up to 1000 characters	Content of the message to be pushed to the user.



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User_info

No.	Field Name	Range of valid values for the field	Remarks
1	User ID	Alphanumeric, unique identifier	Unique identifier for each user.
2	Username	Alphanumeric	Unique username for login`
3	Password	Alphanumeric/ Numeric	Encrypted password for user authentication
4	Email	Alphanumeric (Email format)	User's email address
5	UserType	Enumerated (User/Admin)	Type of user (Admin privileges for administrative users)

High Level/Detailed Design (HLD/DD)

Design Components

User Side Components

- Registration Form
- Login/ Logout
- Push Preferences
- Notification Frequency

Admin Side Components

- Admin Login
- User Management
- Agent Management
- System Monitoring and Logs



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Test-Plan (TP)

No.	Test case Title	Description	Expected Outcome	The requirement in RS that is being tested	Result
1	User Registration	Test the registration of a new user with valid input (Name, Email, Password).	The user is successfully registered with the provided information.	User Registration	Passed
2	User Login	Test user login with valid credentials.	The user is logged in and redirected to the user dashboard.	User Authentication	Passed
3	Message Delivery to User	Test if a user receives the push message based on their preferences	The user receives the message as per their preferred channel.	Push Notification System	Passed
4	User Logout	Test if the user can log out from the application successfully.	The user is logged out and redirected to the login page.	User Authentication	Passed
5	Admin Login	Test admin login with valid admin credentials.	Admin is logged in and redirected to the Admin Dashboard.	Admin Authentication	Passed
6	Admin Role Management	Test if the admin can create, update, and delete user roles	Admin can successfully manage user roles.	Role Management	Passed



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7	Agent Status Monitoring	Test if the admin can monitor the current status of agents (Active, Idle, Inactive).	Admin can see the agent's current status (Active, Idle, Inactive).	Admin Dashboard	Passed
8	Admin User Management	Test if an admin can view, edit, or deactivate user accounts.	Admin can manage user accounts by viewing, editing, and deactivating them.	User Management (Admin Management)	Passed
9	Admin Access to System Logs	Test if the admin can access system logs and monitor the status of notifications.	Admin can view detailed logs for error monitoring and message delivery.	System Monitoring & Logs (Admin Dashboard)	Passed