

Software Requirement Specification for RP REDEMPTION AUTOMATION:

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Problem statement	RP REDEMPTION AUTOMATION

PROBLEM STATEMENT:

In the current manual system for managing and redeeming reward points, users face significant delays and inefficiencies. They struggle with tracking their points, submitting redemption requests, and receiving timely approvals. Administrators and reviewers are overwhelmed with managing and processing numerous requests, leading to errors and inconsistent handling of redemptions. This lack of automation results in user dissatisfaction and administrative burden.

The goal is to develop an automated reward point redemption system that leverages a robust DBMS for efficient data management. This system will provide secure user authentication, streamlined points management, an intuitive dashboard, approval automated workflows, and comprehensive report generation. By automating these processes, the system aims to enhance user experience, improve operational efficiency, and ensure timely and accurate reward redemptions.

STACK:

Component	Tech Stack
Frontend	React js
Backend	Node js with Express js
Database	MongoDB
API	OpenAPI

PROGRESS - TIMELINE:

Phase Deadline Status Notes			
Stage 1	23/07/2024	In Progress	Planning and Requirement Gathering
Stage 2			Design and Prototyping
Stage 3			DB Designing
Stage 4			Backend Implementation
Stage 5			Testing & Implementation
Stage 6			Deployment

PROJECT OVERVIEW:

1. Purpose:

To create a website for automating the rewards points redemption process, aimed at streamlining the user experience and improving efficiency in managing and redeeming rewards points. The system ensures accurate tracking, processing, and reporting of rewards points for both students and administrators.

2. Scope:

The functionalities of this system will include:

- User Authentication:

- Secure login using organization mail IDs with password protection and forgot password functionality.
- **Points Tracking:**
 - Display current points balance, points accrual, and transaction history for each user.
- **Rewards Management:**
 - Admin can add or modify rewards, and users can view available rewards categorized by type and points required.
- **Redemption Workflow:**
 - Users can submit redemption requests, which are processed and approved by reviewers. Notifications are sent to users at each stage.
- **Report Production:**
 - Generate detailed reports on redemption activities, including points spent, description of redeemed rewards, user feedback, and attachments. Reports can be reviewed, approved, and exported by admins.

3. Dependencies:

- Integration with the organization's email system for user authentication.
- Availability of internet connectivity for system access.
- Reliable DBMS for storing and managing user data, rewards points, redemption requests, and other relevant data.

4. Database Management System (DBMS): The system relies on a robust DBMS for:

- Storing user data, rewards points, redemption requests, and other relevant data.
- Efficient data storage and retrieval to ensure seamless operation of the system.
- Structured organization and querying of data for effective management of rewards points and redemption processes.
- Allowing users and administrators to access and edit specific data securely.

5. User Personas:

- **Admin:** Manages rewards, redemption requests, approvals, and overall system settings. Responsible for adding/modifying rewards, reviewing and approving redemption requests, and generating reports.
- **User (Rewards Member):** Submits redemption requests, monitors points balance, redemption status, and provides feedback. Receives notifications about the status of their requests.
- **Reviewer:** Approves or rejects redemption requests with clear remarks. Collaborates with other reviewers if necessary, and ensures transparent and fair processing of requests.

FUNCTIONAL REQUIREMENTS:

User Authentication

- Description: Users should be able to securely log in using their organization mail IDs.
- Features:
 - Secure authentication mechanism using organization mail IDs.
 - Password protection to ensure user account security.
 - Forgot password functionality for password recovery.

Rewards Points Management

- Description: Users and admins should be able to manage and track rewards points.
- Features:
 - Display of current points balance for each user.
 - Points accrual system for various activities (e.g., winning or participation in events).
 - History of points transactions.
 - Automated updates to balance and transaction history after each transaction.

Home Page

- Description: Dashboard for users and admins.
- Features:
 - User/Admin Dashboard with a summary of rewards points and recent activities.
 - Slideshow showcasing popular or featured reward point activities.
 - Admin can add or modify reward categories and details.
 - Notifications section for important updates and point balance changes.

Adding Redemption Requests

- Description: Users can submit redemption requests by providing necessary details.
- Features:
 - Reward Title.
 - Points Required.
 - Redemption Date (automatically selected based on the current date).
 - Optional Comments.

- Users get notified of request submission.
- Acknowledgment email sent to users after submission.
- Feature for tracking the status of redemption requests.

Redemption Request Approval Workflow

- Description: Admins and reviewers can approve or reject redemption requests.
- Features:
 - Automatic assignment of reviewers for each request.
 - Reviewers can approve or reject requests with clear remarks for rejection.
 - System tracks the number of re-entries and edits made for each request.
 - Users are notified of approval or rejection and any required edits.
 - Support for multiple reviewers and collaborative decision-making.
 - Feature for users to respond to reviewer comments and resubmit requests.

Redemption Report Creation

- Description: Users and admins can generate detailed reports on redemption activities.
- Features:
 - Date of redemption.
 - Points spent.
 - Description of the redeemed reward.
 - User comments and feedback.
 - Attachments (e.g., receipts or confirmations).
 - Reports are reviewed and approved by admins.
 - Feedback feature for users on the redemption process.

Approval Workflow

- Description: Reviewers can approve and review reports, provide clear remarks for disapproval, and allow users to re-edit specific sections.
- Features:
 - Clear status indicators for pending, approved, or rejected reports.
 - System tracks the number of edits and reviews for each report.
 - Notifications sent to users for any required edits or final approval.
 - History of reviewer comments and user responses.

Report Generation

- Description: Once approved, reports are downloadable in PDF format (max 2MB).
- Features:
 - Detailed summary of redemption activities.
 - Points balance and transaction history.
 - User feedback and comments.
 - Admins can export data for further analysis.
 - Users are notified of report availability for download.
 - Filtering and sorting options for admins.
 - Graphs and charts for visual summary.

Strategies To Enhance Workflow:

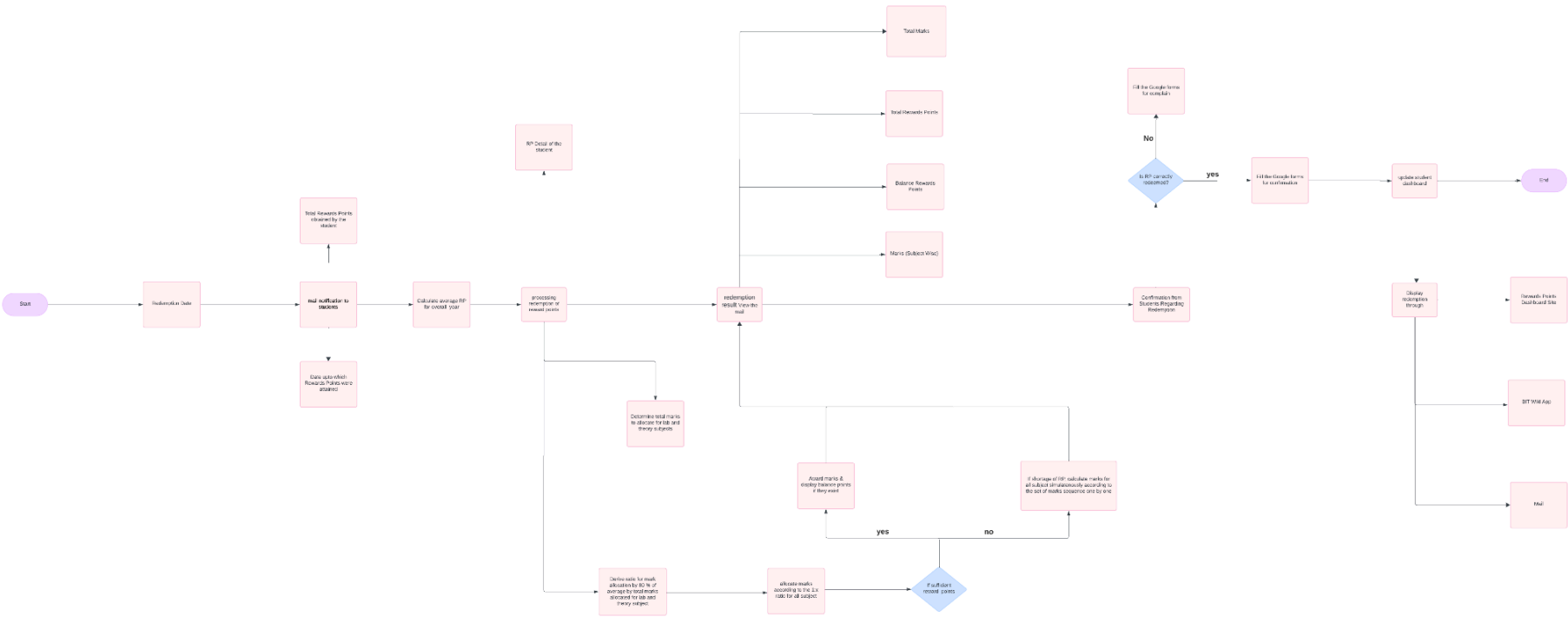
1. Dynamic PDF Generation:

- To create PDF documents for rewards redemption confirmations and summaries, utilise pdf-lib to retrieve user input from the backend.
- Reduce duplication, reduce image size, and use effective text encoding to maximise PDF size.
- Restrict the amount of pages and try different compression ratios to make sure the PDFs are no more than 2MB.

2. Edit and Submission Dashboard:

- Add an editing function that lets users change the mandatory fields in their redemption requests.
- Give customers access to an easy-to-use dashboard where they can review and make changes to their submissions within a given time limit.
- Use version control to monitor modifications, guaranteeing accountability and transparency.
- This functionality, which enables users to make essential revisions without having to start the process over, will shorten the time it takes for resubmissions and improve user experience overall.

FLOW CHART:



ER DIAGRAM:

