

**University Of the South Pacific**  
**CS230: Requirements Engineering**  
**Assignment 3: Product Requirement Document**  
**Student Management System**

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# 1.0 Objective

The objective of this Product Requirements Document (PRD) is to provide details about upcoming releases, its features, and specifications of the student administration system (SAS). The system will be built to solve issues in the current manual system present in high school. The core issue is the inefficient, unreliable and expensive management of student related information. Alongside this, there is poor communication between teachers, students, and parents, as well as a regular occurrence of human errors. The SAS aims to solve these issues by:

- Providing a web application to manage all student records and any related data.
- Allowing teachers to track students' academic performance and generate report cards.
- Allowing admins to manage timetables and broadcast important announcements.
- Integrating file sharing to distribute documents (such as newsletters) effectively.
- Integrating library services to allow access to digital resources and books.

## 2.0 Releases

### 2.1 Release 1.0.0

Release date: 14<sup>th</sup> June 2025.

User Management	
Role based access control	<ul style="list-style-type: none"><li>• Add, edit and suspend accounts.</li><li>• Assign roles to users.</li></ul>
User accounts	<ul style="list-style-type: none"><li>• Login to account.</li><li>• Edit user profile.</li></ul>

### 2.2 Release 1.1.0

Release Date: 14<sup>th</sup> July 2025.

Academic Performance Management	
Student grades	<ul style="list-style-type: none"><li>• Add, edit and remove marks.</li><li>• Calculate student grades.</li></ul>
Report cards	<ul style="list-style-type: none"><li>• Generate report cards.</li><li>• View report cards.</li></ul>

### 2.3 Release 1.2.0

Release Date: 14<sup>th</sup> August 2025.

Attendance Management	
Attendance tracking	<ul style="list-style-type: none"><li>• Add, edit and remove attendance.</li><li>• Generate attendance reports.</li></ul>
Discipline monitoring	<ul style="list-style-type: none"><li>• Add, edit and remove incidents.</li><li>• Notify parents about incidents.</li></ul>

### 2.4 Release 1.3.0

Release Date: 14<sup>th</sup> September 2025.

Timetable Management
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Student timetables	<ul style="list-style-type: none"> <li>• Upload student timetables.</li> <li>• View student timetables.</li> </ul>
Staff timetables	<ul style="list-style-type: none"> <li>• Upload staff timetables.</li> <li>• View staff timetables.</li> </ul>

## 2.5 Release 1.4.0

Release Date: 14<sup>th</sup> October 2025.

Communication Module	
Announcements	<ul style="list-style-type: none"> <li>• Add, edit and remove announcements.</li> <li>• View announcements.</li> </ul>
Document sharing	<ul style="list-style-type: none"> <li>• Upload school documents.</li> <li>• Download documents.</li> </ul>

## 2.6 Release 1.5.0

Release Date: 14<sup>th</sup> November 2025.

Library Module	
Book reservation	<ul style="list-style-type: none"> <li>• View available books.</li> <li>• Place reservations on books.</li> </ul>
Digital resources	<ul style="list-style-type: none"> <li>• View available digital resources.</li> <li>• Download resources.</li> </ul>

## 3.0 Features

### 3.1 User Management

Feature	Add, edit and suspend accounts.
User story	As a system admin, I want to add, edit and suspend accounts, so that I can manage all users in the system.
Acceptance criteria	<ul style="list-style-type: none"><li>• System admin can create new users with their details.</li><li>• System admin can update existing users with new data.</li><li>• System admin can suspend existing accounts.</li><li>• Users with new accounts can log into the system.</li><li>• Users with edited accounts can see new changes.</li><li>• Users with suspended accounts cannot log into the system.</li></ul>

Feature	Assign roles to users.
User story	As a system admin, I want to assign different roles to accounts, so that they can access only what they are allowed to.
Acceptance criteria	<ul style="list-style-type: none"><li>• System admin can assign a role to each user account.</li><li>• Users with lower roles cannot use higher role features.</li><li>• System prevents one account from having multiple roles.</li></ul>

Feature	Log in to account.
User story	As a user, I want to log in to my account using email and password, so that I can access the systems features.
Acceptance criteria	<ul style="list-style-type: none"><li>• System can authenticate users based on correct credentials.</li><li>• System can show error messages if credentials are incorrect.</li><li>• Users with suspended accounts cannot log into the system.</li><li>• System can redirect users to their dashboard after login.</li></ul>

Feature	Edit user profile.
User story	As a user, I want to edit my profile, so that my profile has up-to-date and correct information.
Acceptance criteria	<ul style="list-style-type: none"><li>• Users can change basic information such as profile picture.</li><li>• Users cannot change restricted information such as email.</li><li>• Users can view their updated profile across the system.</li></ul>

## 3.2 Academic Performance Management

Feature	Add, edit and remove assessment marks.
User story	As a teacher, I want to add, edit and remove marks of students, so that I can track their academic performance.
Acceptance criteria	<ul style="list-style-type: none"><li>Teachers can specify the assessment and enter marks.</li><li>Teachers can edit existing marks of a student.</li><li>Teachers can remove existing marks of a student.</li></ul>

Feature	Calculate student grades.
User story	As a teacher, I want the system to automatically calculate student grades, so that I can save time and prevent errors.
Acceptance criteria	<ul style="list-style-type: none"><li>System can correctly compute grades based on marks.</li><li>System can re-calculate grades if any marks are updated.</li><li>Teachers can view grades of students.</li></ul>

Feature	Generate report cards.
User story	As a teacher, I want to generate report cards, so that I can provide an academic summary to students and parents.
Acceptance criteria	<ul style="list-style-type: none"><li>Teachers can add comments to report cards.</li><li>Teachers can request the generation of report cards.</li><li>Teachers can view a list of all generated report cards.</li></ul>

Feature	View report cards.
User story	As a teacher, student or parent, I want to view report cards within the system, so that I can assess academic performance.
Acceptance criteria	<ul style="list-style-type: none"><li>System can render report cards with important details.</li><li>Users cannot edit the report card.</li></ul>



### 3.3 Attendance Management

Feature	Add, edit and remove attendance.
User story	As a teacher, I want to add, edit and delete students' attendance, so that I can monitor their punctuality.
Acceptance criteria	<ul style="list-style-type: none"><li>• Teachers can create attendance for students.</li><li>• Teachers can update existing student attendance.</li><li>• Teachers can delete existing student attendance.</li><li>• System can reflect changes in related reports.</li></ul>

Feature	Generate attendance report.
User story	As a teacher, I want to generate attendance reports, so that I can analyze attendance trends and identify issues.
Acceptance criteria	<ul style="list-style-type: none"><li>• Teachers can add comments to attendance reports.</li><li>• Teachers can request the generation of reports.</li><li>• Teachers can view a list of all generated reports.</li></ul>

Feature	Add, edit and remove disciplinary incidents.
User story	As a teacher, I want to add, edit and delete incidents, so that I can monitor a student's behavior.
Acceptance criteria	<ul style="list-style-type: none"><li>• Teachers can add incident records.</li><li>• Teachers can edit existing incident records.</li><li>• Teachers can remove existing incident records.</li></ul>

Feature	Notify parents about disciplinary incidents.
User story	As a teacher I want to notify parents about disciplinary incidents, so that they are aware of their child's behavior.
Acceptance criteria	<ul style="list-style-type: none"><li>• Teachers can choose existing incidents to notify.</li><li>• Teachers can send notification via SMS or email.</li><li>• System can correctly and reliably deliver the notification.</li></ul>

### 3.4 Timetable Management

Feature	Upload student timetables.
User story	As a system admin, I want to upload student timetables for each class, so that the students have an up-to-date schedule.
Acceptance criteria	<ul style="list-style-type: none"><li>• System admin can specify which class the timetable is for.</li><li>• System admin can upload timetables in spreadsheet format.</li><li>• System admin can bulk upload timetables for classes.</li></ul>

Feature	View student timetables.
User story	As a student, I want to view my class timetable, so that I know when and where my classes are.
Acceptance criteria	<ul style="list-style-type: none"><li>• System correctly renders the timetable for students based on which class they are in and which subjects they take.</li></ul>

Feature	Upload staff timetables.
User story	As a system admin, I want to upload teacher timetables, so that teachers can prepare for their classes accordingly.
Acceptance criteria	<ul style="list-style-type: none"><li>• System admin can specify which teacher the timetable is for.</li><li>• System admin can upload timetables in spreadsheet format.</li><li>• System admin can bulk upload timetables for teachers.</li></ul>

Feature	View staff timetables.
User story	As a teacher, I want to view my timetable, so that I know when and where to teach each class.
Acceptance criteria	<ul style="list-style-type: none"><li>• System correctly renders the timetable for teachers based on which classes they take and which subjects they teach.</li></ul>

## 3.5 Communication Module

Feature	Add, edit and remove announcements.
User story	As a school admin, I want to add, edit and remove announcements, so that I can share news and updates.
Acceptance criteria	<ul style="list-style-type: none"><li>• School admins can create new announcements.</li><li>• School admins can update existing announcements.</li><li>• School admins can remove existing announcements.</li><li>• System can broadcast announcements to all users.</li></ul>

Feature	View announcements.
User story	As a student, I want to view announcements with the system, so that I can stay informed about important dates and events.
Acceptance criteria	<ul style="list-style-type: none"><li>• System can render announcements and details.</li><li>• System can automatically mark announcements as read.</li><li>• Students can manually mark announcements as read.</li><li>• Students can view all announcements that have been made.</li></ul>

Feature	Upload documents.
User story	As a teacher, I want to upload school documents, so that I can effectively communicate with students and their parents.
Acceptance criteria	<ul style="list-style-type: none"><li>• Teachers can upload files like newsletters on the system.</li><li>• System can display a list of all uploaded documents.</li></ul>

Feature	Download documents.
User story	As a student or parent, I want to download documents, so that I can view them on my local device when needed.
Acceptance criteria	<ul style="list-style-type: none"><li>• System can allow users to choose a format such as PDF.</li><li>• System can allow users to download documents.</li></ul>

### 3.6 Library Module

Feature	View available books.
User story	As a teacher or student, I want to view all books in the library, so that I can either reserve or borrow them for personal use.
Acceptance criteria	<ul style="list-style-type: none"><li>• System can display a list of all books in the library.</li><li>• System can indicate if a book is being borrowed or available.</li><li>• Users can sort and filter books on conditions such as author.</li></ul>

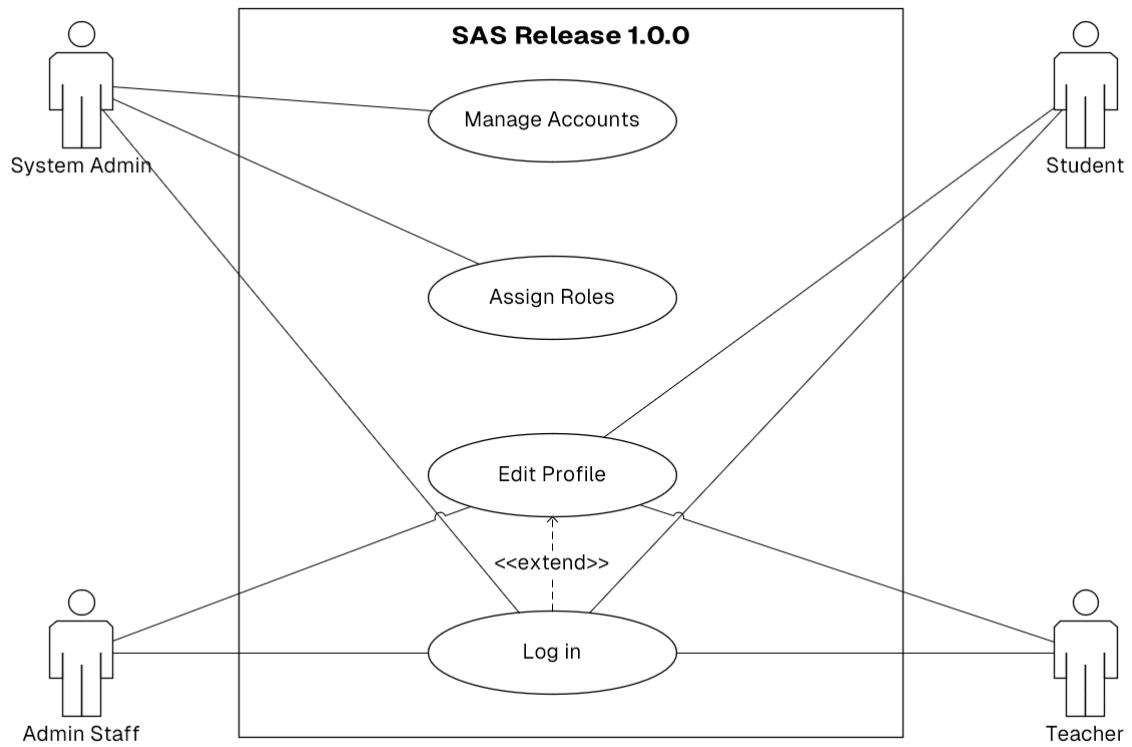
Feature	Reserve books.
User story	As a teacher or student, I want to reserve books, so that I can borrow them when it is free next for personal use.
Acceptance criteria	<ul style="list-style-type: none"><li>• Users can specify which book they want to reserve.</li><li>• System cannot allow reservation of a book at the same time.</li></ul>

Feature	View available digital resources.
User story	As a teacher or student, I want to view available digital resources, so that I can use them for teaching or learning.
Acceptance criteria	<ul style="list-style-type: none"><li>• System can display a list of all digital resources.</li><li>• Users can sort and filter resources on conditions like format .</li></ul>

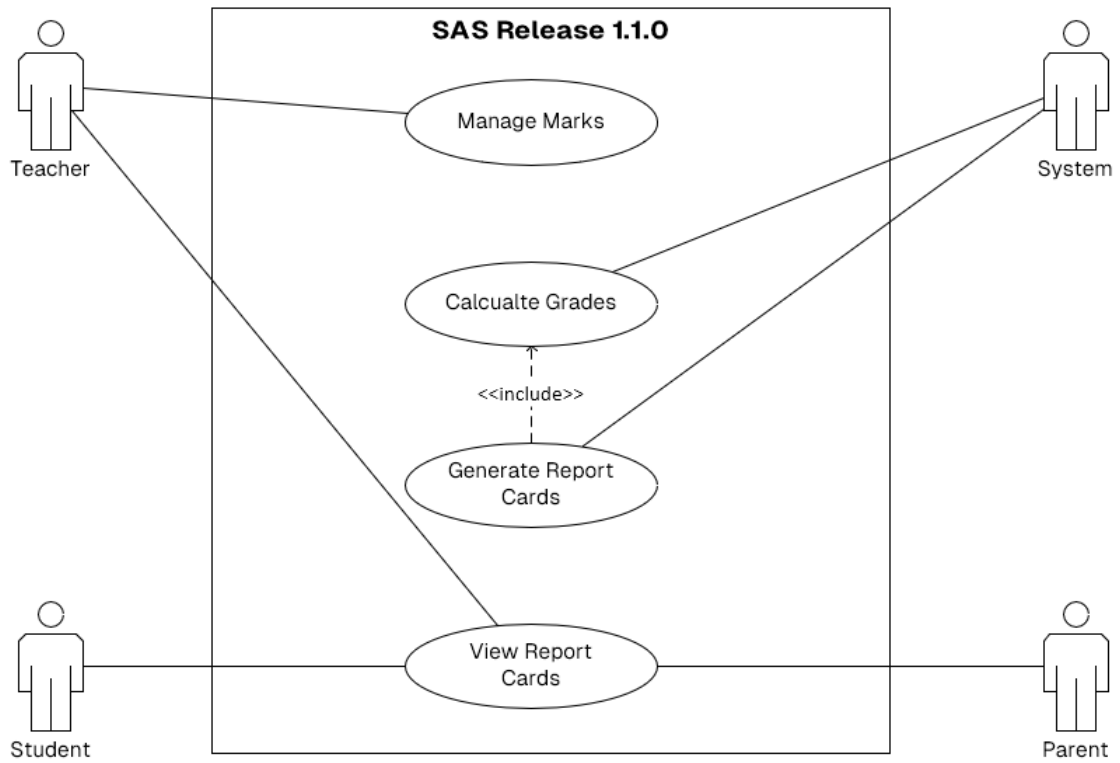
Feature	Download digital resources.
User story	As a teacher or student, I want to download available digital resources, so that I can view them on my local device.
Acceptance criteria	<ul style="list-style-type: none"><li>• System can allow users to choose a format such as PDF.</li><li>• System can allow users to download resources.</li></ul>

# 4.0 Use Case Diagrams

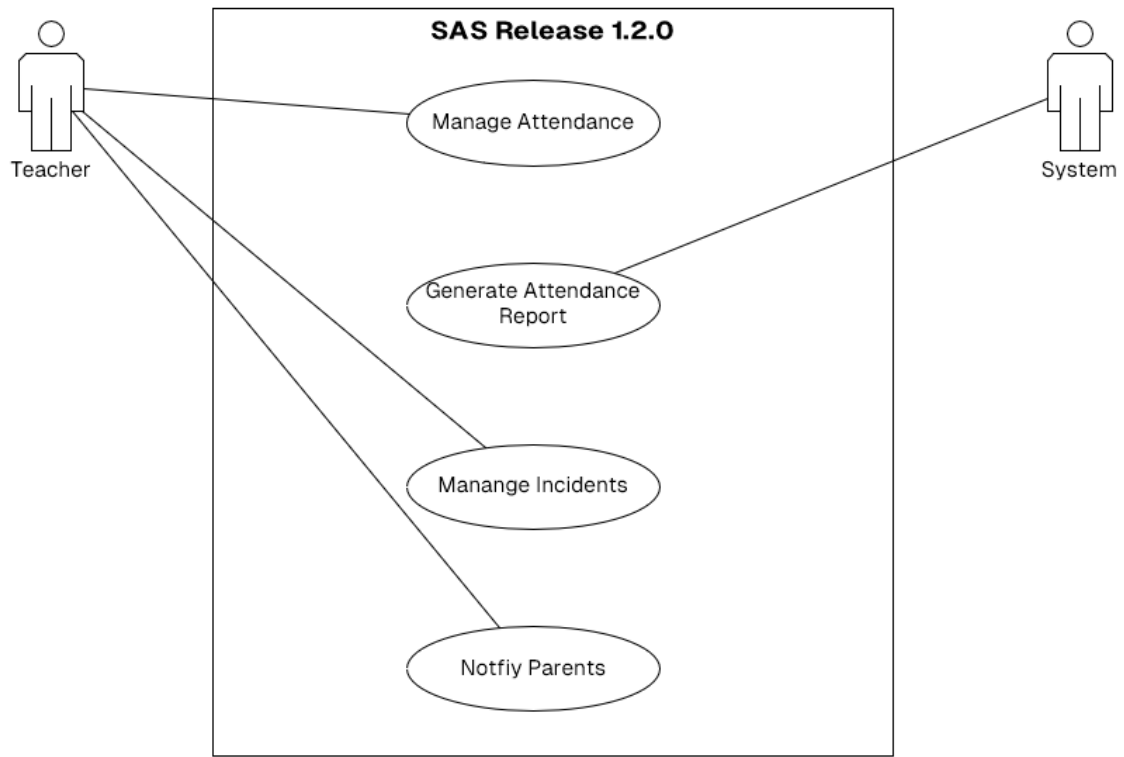
## 4.1 Release 1.0.0



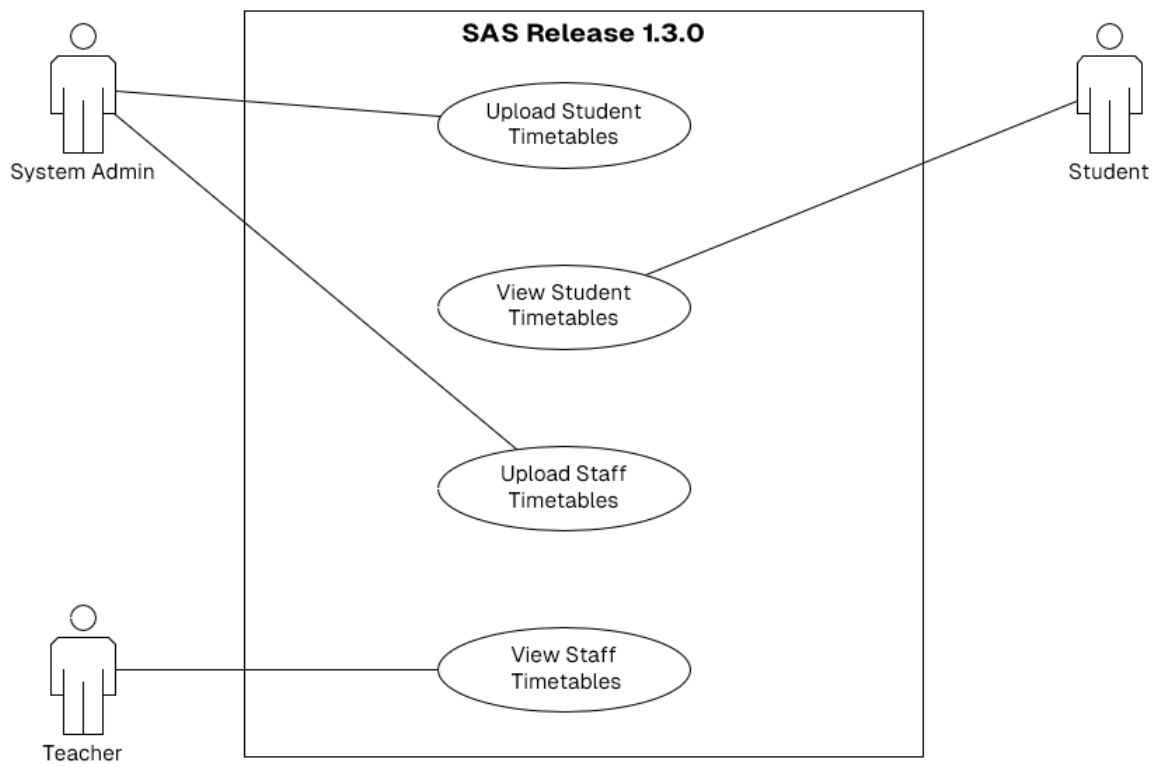
## 4.2 Release 1.1.0



## 4.3 Release 1.2.0

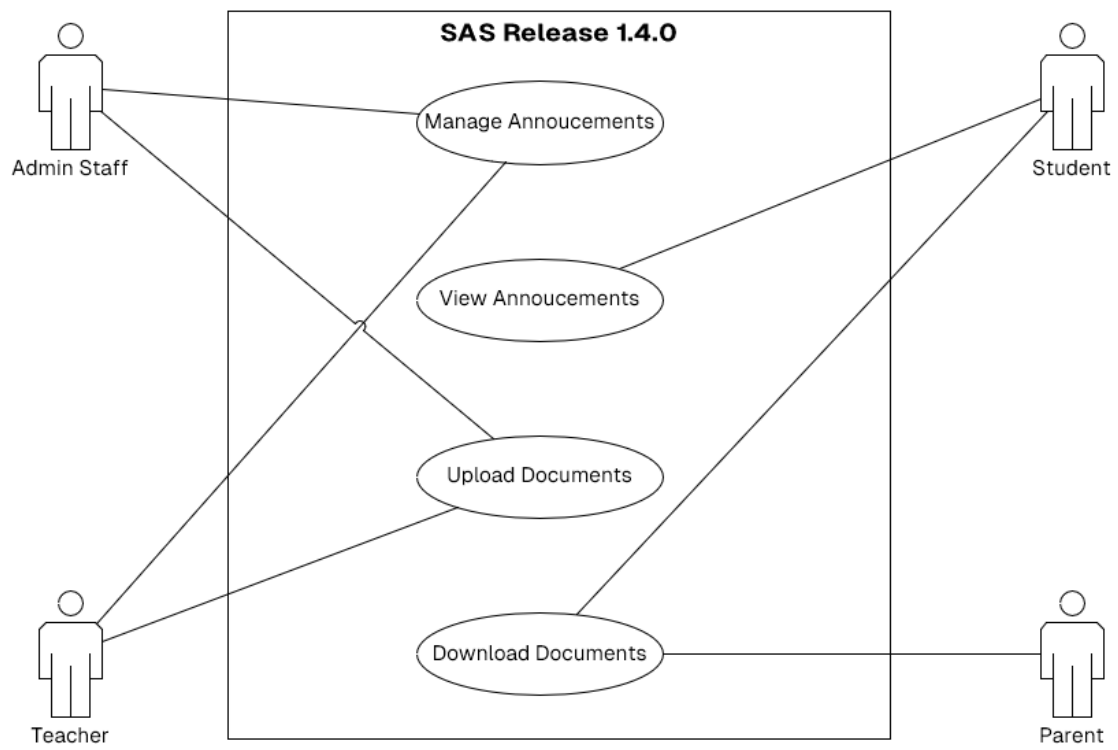


## 4.4 Release 1.3.0

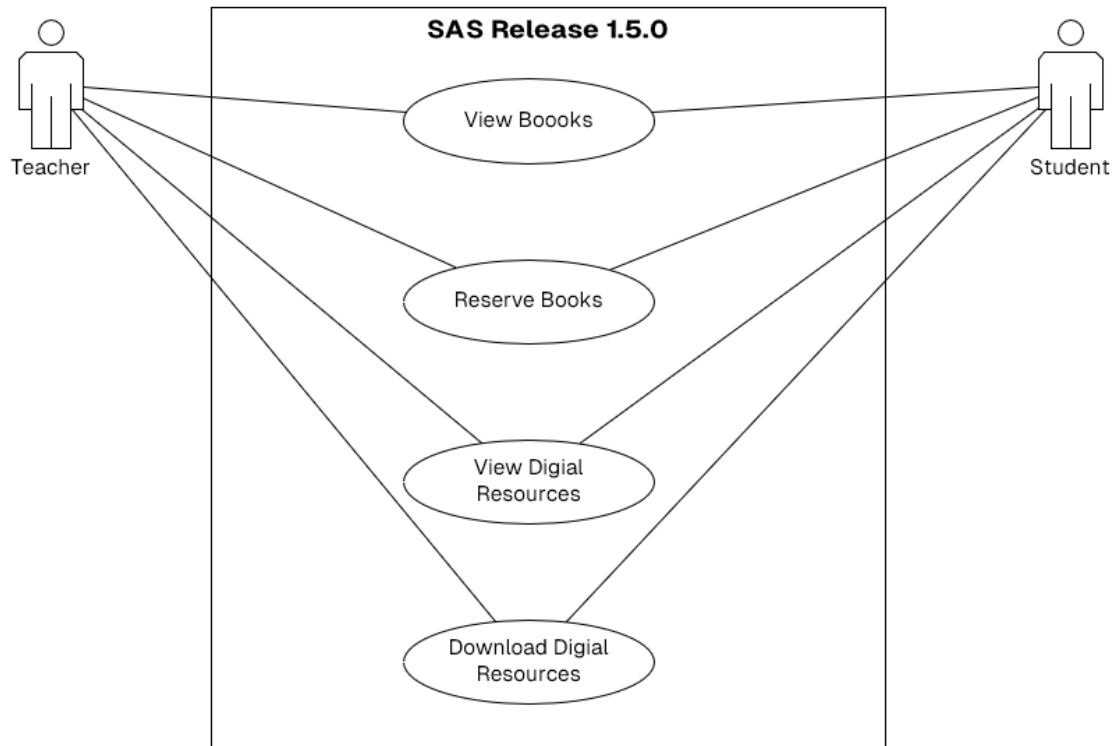




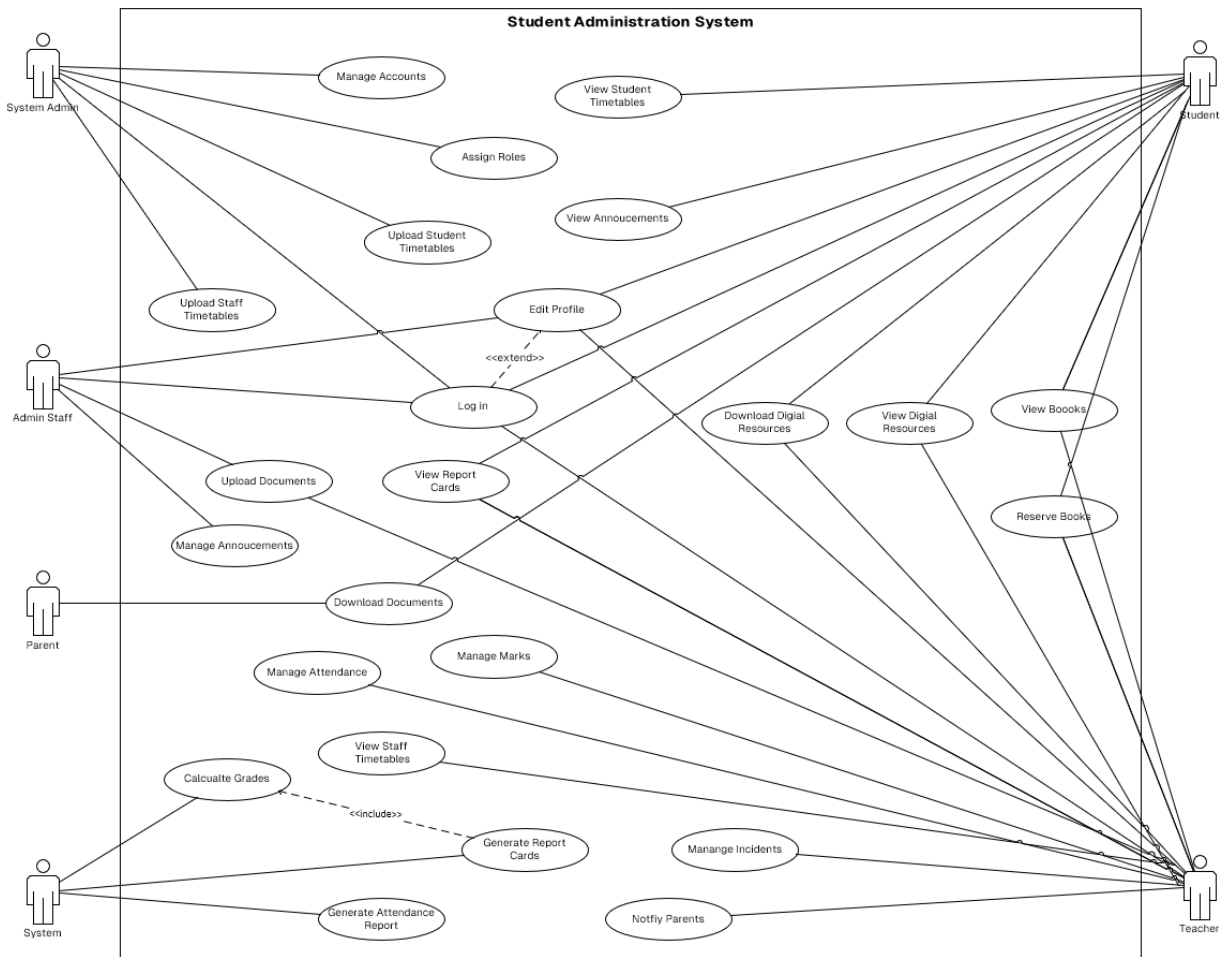
## 4.5 Release 1.4.0



## 4.6 Release 1.5.0



## 4.7 Overall System



## 5.0 Use Case Descriptions

### 5.1 Login to Account

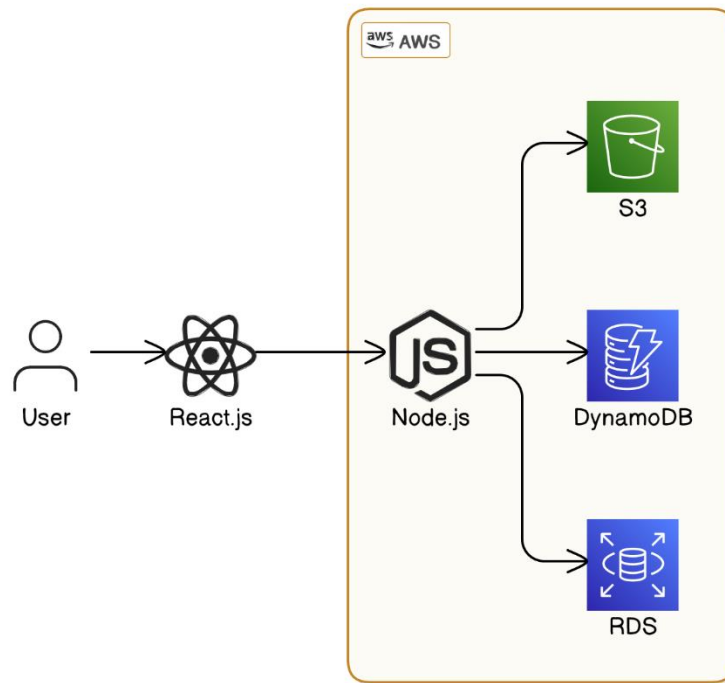
Use case Name	Login to account.	
Scenario	User wants to login to their account.	
Triggering event	User clicks on the “Login” button or attempts to access the system with an expired session.	
Brief description	Users can log into the system using their credentials (email and password) to gain access to the system and use it.	
Actors	System admin, administrative staff, teacher, student.	
Stakeholders	System admin.	
Preconditions	At least one account must exist in the system.	
Postconditions	Users can access the system and use features based on their role.	
Flow of activities	Actor	System
	1. Enter email.	1.1 Validate email input.
	2. Enter password.	2.1 Validate password input.
	3. Press “Login”.	3.1 Check if account exists.
		3.2 Check if password is correct.
		3.3 Redirect user to dashboard.
Exception condition	<ul style="list-style-type: none"><li>• User account does not exist in the system.</li><li>• User enters invalid credentials.</li><li>• System prevents login for suspended users.</li></ul>	

## 5.2 View Announcements

Use case Name	View announcements.								
Scenario	User wants to view the latest announcements.								
Triggering event	User clicks on the “Announcements” icon on their dashboard.								
Brief description	Users can view all announcements that have been broadcasted within the system.								
Actors	Teacher, student.								
Stakeholders	Administrative staff, teacher.								
Preconditions	<ul style="list-style-type: none"><li>• User must be logged in.</li><li>• At least one announcement must exist in the system.</li></ul>								
Postconditions	System can display a list of all announcements.								
Flow of activities	<table><thead><tr><th>Actor</th><th>System</th></tr></thead><tbody><tr><td>1 Go to dashboard.</td><td>1.1 Validate session.</td></tr><tr><td>2 Click on “announcement” icon.</td><td>2.1 Redirect user to announcement page. 2.2 Fetch all announcements from database. 2.3 Render a list of all announcements.</td></tr><tr><td>3 Click on specific announcement.</td><td>3.1 Fetch specified announcement from database. 3.2 Render all details about specified announcement.</td></tr></tbody></table>	Actor	System	1 Go to dashboard.	1.1 Validate session.	2 Click on “announcement” icon.	2.1 Redirect user to announcement page. 2.2 Fetch all announcements from database. 2.3 Render a list of all announcements.	3 Click on specific announcement.	3.1 Fetch specified announcement from database. 3.2 Render all details about specified announcement.
Actor	System								
1 Go to dashboard.	1.1 Validate session.								
2 Click on “announcement” icon.	2.1 Redirect user to announcement page. 2.2 Fetch all announcements from database. 2.3 Render a list of all announcements.								
3 Click on specific announcement.	3.1 Fetch specified announcement from database. 3.2 Render all details about specified announcement.								
Exception condition	<ul style="list-style-type: none"><li>• Specified announcement does not exist anymore.</li></ul>								

# 6.0 Appendix

## 6.1 System Architecture

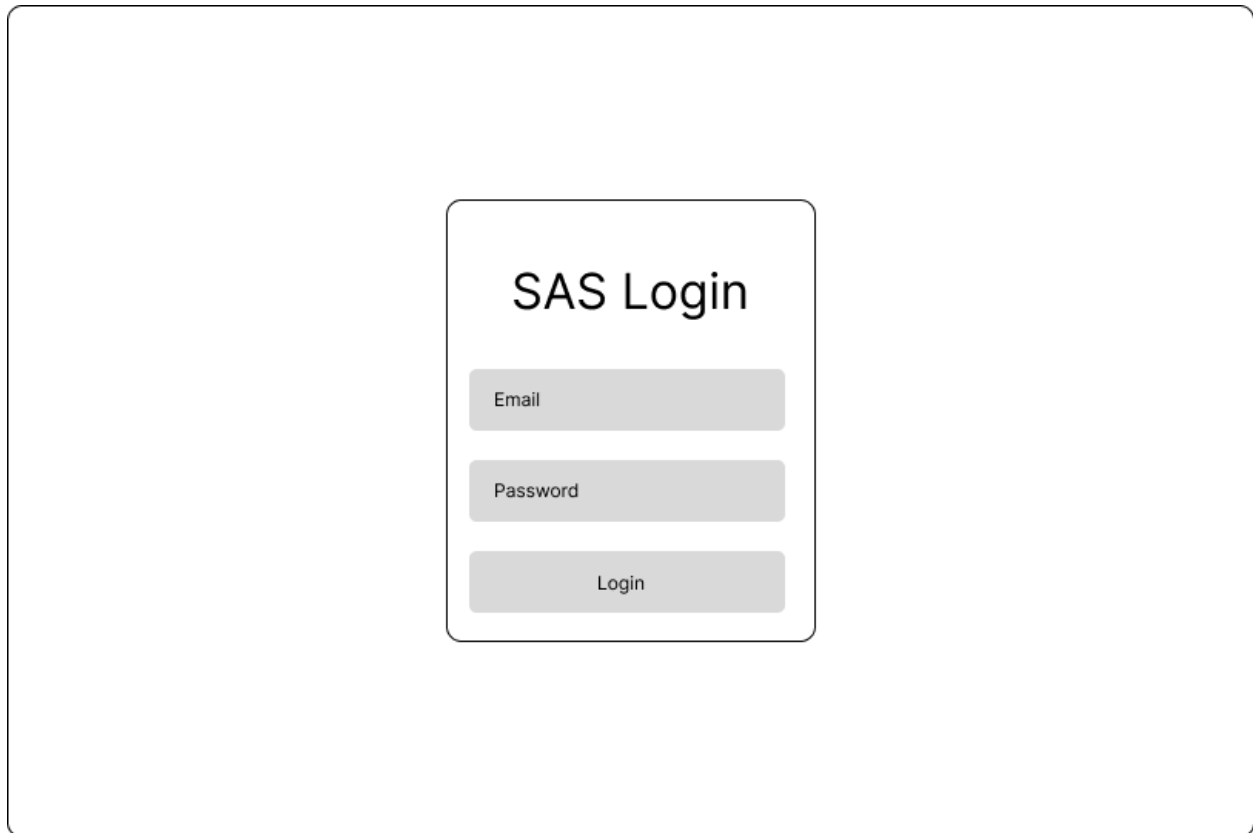


The student administration system will take a cloud first approach, while making use of modern web technologies. This creates a robust and reliable architecture for SAS which ensures the system meets development standards and expectations. The system will make use of the following:

- React.js – frontend of the system which the users will interact with (web application).
- Node.js – backend of the system which the client will interact with (application server).
- Amazon web services
  - Elastic compute cloud – virtual machine which will host the react and node apps.
  - Simple storage service – affordable object storage for assets, files and media.
  - Relational database service – use to store all primary data such as student records.
  - DynamoDB – used to store all secondary data such as activity logs.

## 6.2 Interface Wireframes

### 6.2.1 Login to Account



A wireframe for a login interface. It features a central rounded rectangle containing the title "SAS Login" at the top. Below the title are three input fields: "Email", "Password", and "Login". The "Email" and "Password" fields are stacked vertically, and the "Login" field is a button positioned below them. The entire login form is centered within a larger rounded rectangle representing the page layout.



SAS Login

Email

Password

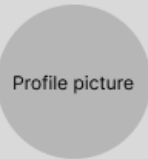
Login

## 6.2.2 User Profile & Timetable Viewing



Account

Profile



Profile picture

Bio



Social links

Save Changes

Timetable



## 6.2.3 Attendance & Discipline Management



Students / S11221203

Attendance

01/07/2025 Present Edit Delete

02/07/2025 Absent Edit Delete

+

Generate Report



Discipline

Truancy 05/07/2025


+

Notify Parent



## 6.2.4 Student Mark Management







Student Marks


Test 2 Marks 

Generate Report Card



Anav Chand76/100

Jone Doe52/100

Jane Doe100/100



## 6.2.5 Report Card Viewing



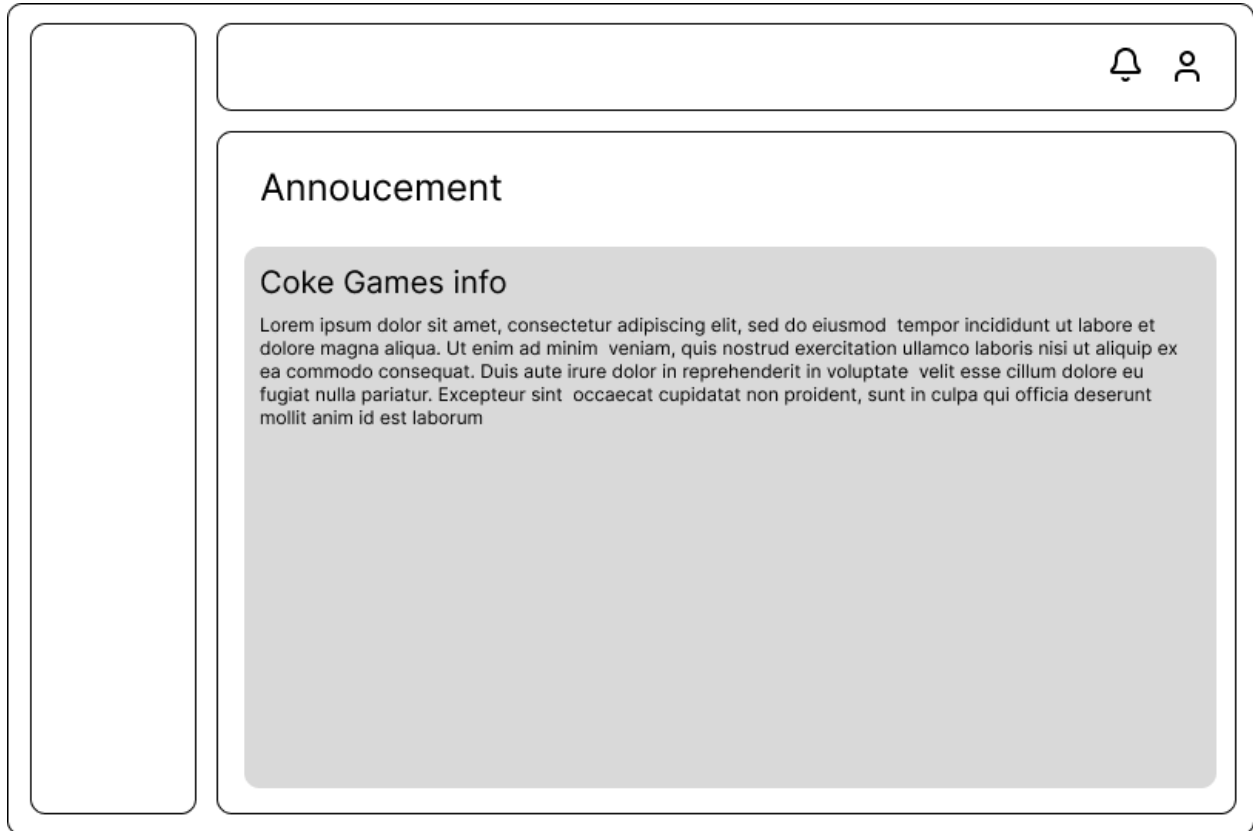
Student / S11221203 / Report Card

Year: 2025  
Overall Performance: Excellent

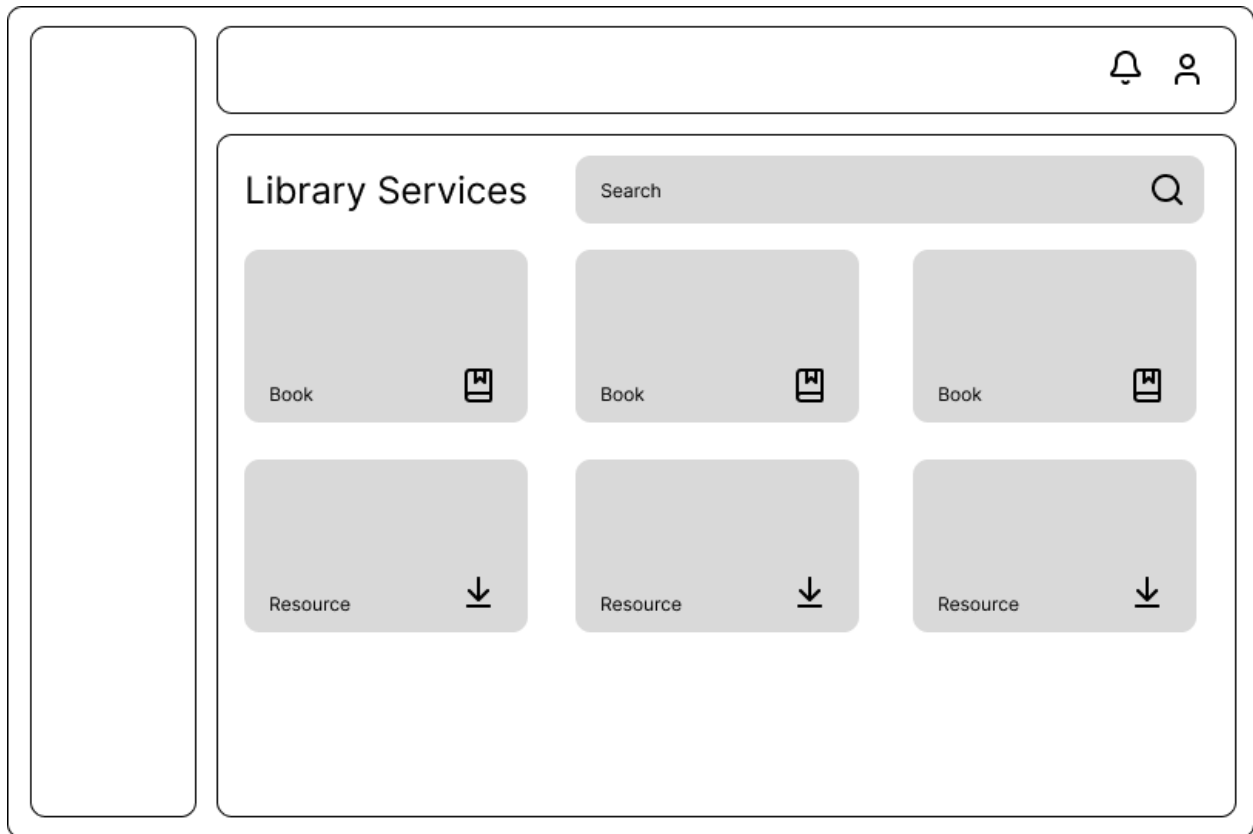
Math: A+  
English: A+  
Physics: A+  
Computer: A+  
Technical Drawing: A

Comment: amazing performance this term, has potential to do better.

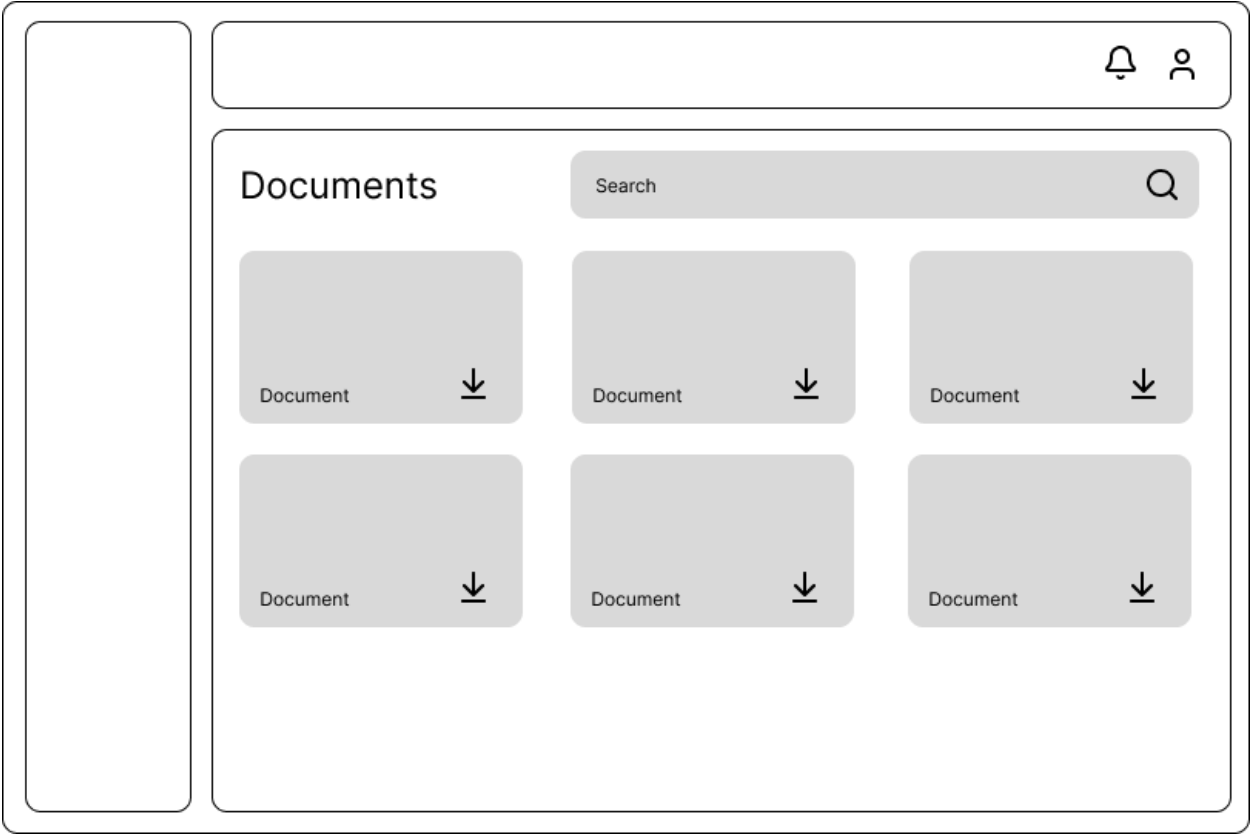
## 6.2.6 Announcement Viewing



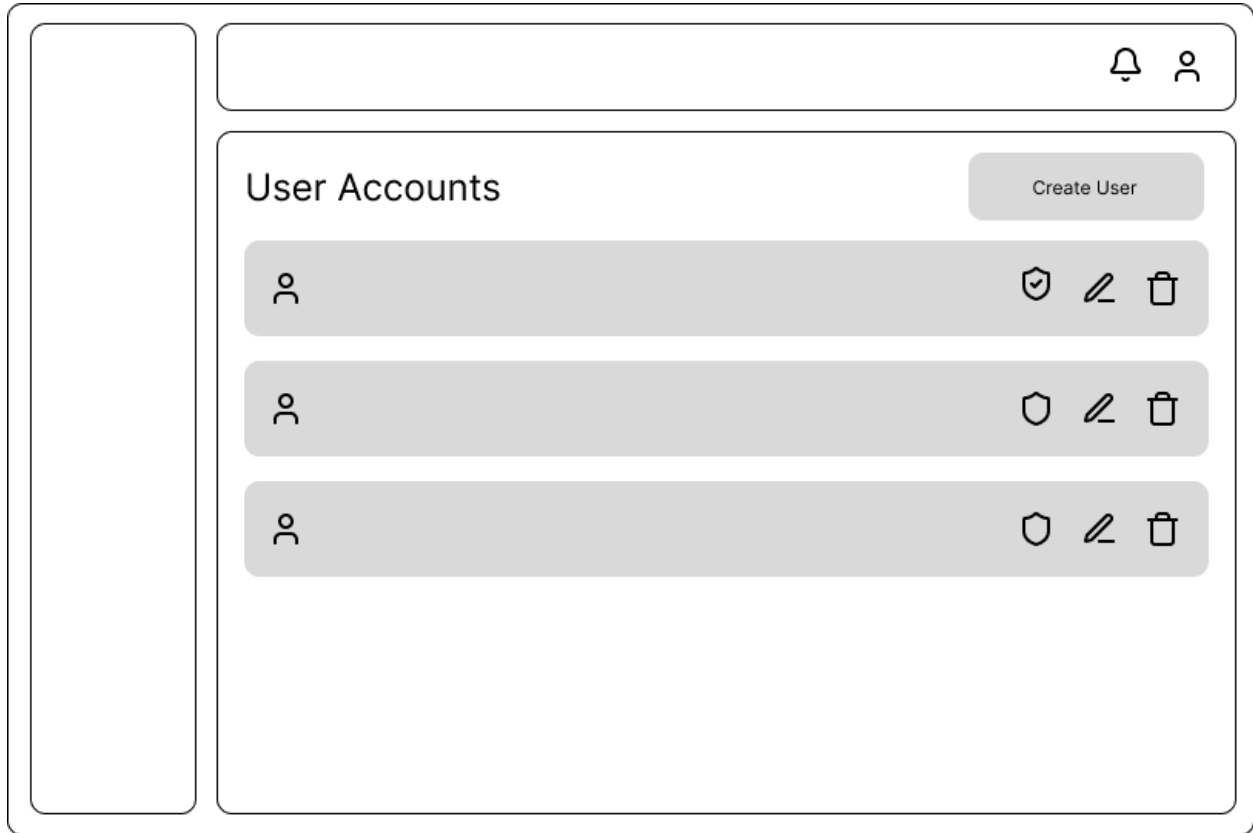
## 6.2.7 Book Reservation & Resource Download



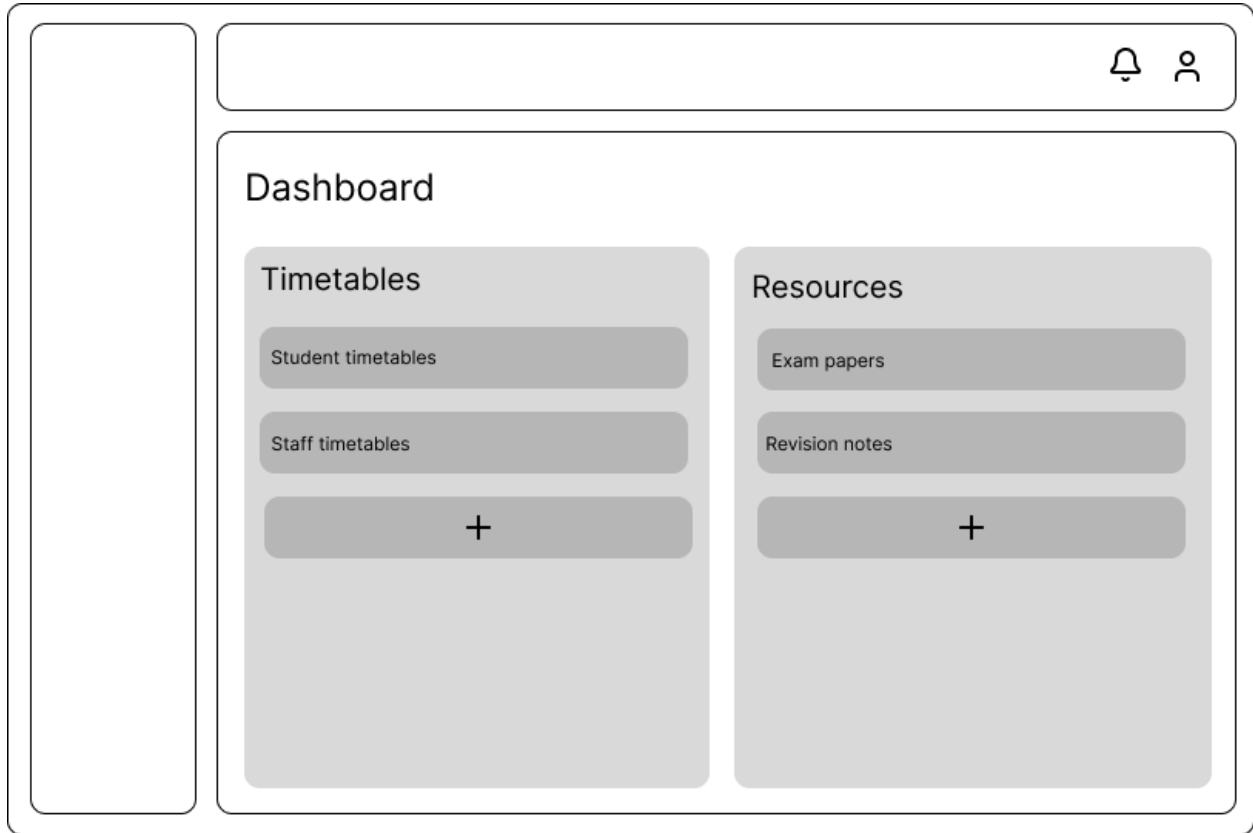
# 6.2.8 School Document Download



## 6.2.9 User Management & RBAC



## 6.2.10 Timetable & Resource Upload





## 6.2.11 Announcements & Document Upload

