_____

CHAPTER 2

Requirements Specification

This chapter presents a comprehensive overview of the requirements and specifications necessary for the successful development and implementation of the system. It outlines both functional and non-functional requirements, provides detailed use cases, and describes the technical, operational, and business aspects that guide the system design. By establishing a clear understanding of the system's expectations, constraints, and operational environment, this chapter serves as a blueprint for ensuring that the final product meets stakeholder needs and performs reliably under expected conditions.

2.1 Functional Requirements

Table 2.1 Functional Requirements

ID	Requirement Description	Priority
FR1	The system shall allow a 'Borrower/Resident' to fill out a reservation request form.	High
FR2	The system shall require the 'Borrower/Resident' to upload an image of a valid ID and a selfie with their ID as part of the reservation request.	High
FR3	The system shall allow the 'Borrower/Resident' to select one or more equipment items, specify an occasion, select a future date, and add a note.	High
FR4	The system shall set the status of a new reservation to 'pending'.	
FR5	The system shall allow a 'Borrower/Resident' to view a list of their past and present reservations, including their status (e.g., Pending, Approved, Rejected, Completed).	Medium

ID	Requirement Description	Priority
FR6	The system shall allow the 'SK Staff' to view the complete details of a pending request, including the borrower's info, ID images, and requested equipment.	High
FR7	The system shall allow the 'SK Staff' to 'Approve' or 'Reject' a pending reservation.	High
FR8	The system shall provide the 'SK Staff' with a list of all 'inprogress' (currently borrowed) reservations.	High
FR9	The system shall allow the 'SK Staff' to mark an 'inprogress' reservation as 'Returned' (or 'completed').	High
FR10	The system shall allow the 'Superadmin' to create, view, edit, and delete 'SK Council (Admin)' (staff) accounts.	High
FR11	The system shall enforce a maximum advance booking limit of 30 days for all reservations.	Medium
FR12	The system shall display summary data on the staff/Superadmin dashboards, such as "Total Pending Requests," "Total Equipment Currently Borrowed," and "Total Available Equipment."	Medium
FR13	The system shall be able to generate a report of all 'Completed' and 'Rejected' reservations.	Medium

2.1.1 Functional Requirements Descriptions

Item	Description
Req ID	FR1
Description	The system shall allow a 'Borrower/Resident' to fill out a reservation request form.
Priority	High
Functional Requirement Description	A logged-in Borrower/Resident must have access to a form (e.g., "Borrow Equipment") where they can initiate a new reservation request.
Acceptance criteria	1.A link or button to the "Borrow Equipment" form is visible on the Borrower dashboard. 2. The form loads successfully with all required fields. 3. The form has a "Submit" button to proceed with the request.

_____

Item	Description
Req ID	FR2
Description	The system shall require the 'Borrower/Resident' to upload an image of a valid ID and a selfie with their ID as part of the reservation request.
Priority	High
Functional Requirement Description	To ensure accountability and verify the user's identity, the reservation form must include mandatory file upload fields for a valid ID and a selfie-with-ID..
Acceptance criteria	1. The form provides file upload fields for "Valid ID" and "Selfie with ID". 2. The system validates that files are attached for both fields before allowing submission. 3. The uploaded files are stored and associated with the corresponding reservation request for admin review.

Item	Description
Req ID	FR3
Description	The system shall allow a 'Borrower/Resident' to fill out a reservation request form.
Priority	High
Functional Requirement Description	The reservation form must capture all necessary details for the request, including what is being borrowed, why, when, and any special instructions.
Acceptance criteria	1. The form displays a list of available equipment items (e.g., chairs, tables, tents). 2. The form includes a text field for "Occasion". 3. The form includes a date picker for "Date of Event". 4. The form includes a text area for "Note" (optional)

Item	Description
Req ID	FR4
Description	The system shall set the status of a new reservation to 'pending'.
Priority	High
Functional Requirement Description	Upon successful submission of a new reservation request by a Borrower, the system must automatically assign a "pending" status to it.
Acceptance criteria	1. When the user clicks "Submit" on the reservation form, a new reservation record is created in the database.

_____

Item	Description
	2. The 'status' field of this new record is automatically set to "pending". 3. The user sees a confirmation message (e.g., "Your request has been submitted for review.").

Item	Description
Req ID	FR5
Description	The system shall allow a 'Borrower/Resident' to view a list of their past and present reservations, including their status (e.g., Pending, Approved, Rejected, Completed).
Priority	High
Functional Requirement Description	A Borrower/Resident must be able to track the status of their submitted requests and see a history of their past borrows.
Acceptance criteria	1. A "My Reservations" page is available and accessible from the Borrower dashboard. 2. The page displays a list of all reservations associated *only* with the logged-in user. 3. The list clearly displays the status (Pending, Approved, Rejected, Completed) for each reservation.

Item	Description
Req ID	FR6
Description	The system shall allow the 'SK Staff' to view the complete details of a pending request, including the borrower's info, ID images, and requested equipment
Priority	High
Functional Requirement Description	To make an informed decision, the SK Staff must be able to see all information submitted by the Borrower for a pending request.
Acceptance criteria	1. A logged-in 'SK Staff' can access a list of all 'pending' reservations. 2. Clicking on a request opens a detail view. 3. This view displays all borrower information, renders the uploaded ID and selfie images, and lists all requested equipment and quantities.

Item	Description
Req ID	FR7
Description	The system shall allow the 'SK Staff' to 'Approve' or 'Reject' a pending reservation.
Priority	High
Functional Requirement Description	The SK Staff must have the ability to either approve or reject a pending request after reviewing it.
Acceptance criteria	1. In the reservation detail view (FR7), "Approve" and "Reject" buttons are visible. 2. Clicking "Approve" updates the reservation's status to "Approved" in the database. 3. Clicking "Reject" updates the reservation's status to "Rejected" in the database. 4. The reservation is subsequently removed from the 'pending' list.

Item	Description
Req ID	FR8
Description	The system shall provide the 'SK Staff' with a list of all 'inprogress' (currently borrowed) reservations.
Priority	High
Functional Requirement Description	The SK Staff needs to track which approved items have been picked up by the borrower and are currently out of inventory.
Acceptance criteria	1. A dedicated page or tab is available to 'SK Staff' to view reservations with the status 'inprogress' (or 'borrowed'). 2. The list shows key details (Borrower Name, Date, Equipment) for all currently borrowed items.

Item	Description
Req ID	FR9
Description	The system shall allow the 'SK Staff' to mark an 'inprogress' reservation as 'Returned' (or 'completed').
Priority	High

_____

Item	Description
Functional Requirement Description	To complete the borrowing lifecycle and return items to available inventory, the SK Staff must be able to mark items as returned.
Acceptance criteria	1. Each item in the 'inprogress' list (FR9) has a "Mark as Returned" button or action. 2. Clicking this button updates the reservation's status to "Completed" (or "Returned"). 3. The reservation is removed from the 'inprogress' list. 3. The form has a "Submit" button to proceed with the request.

Item	Description
Req ID	FR10
Description	The system shall allow the 'Superadmin' to create, view, edit, and delete 'SK Council (Admin)' (staff) accounts.
Priority	High
Functional Requirement Description	The Superadmin must have full CRUD (Create, Read, Update, Delete) control over the staff-level user accounts.
Acceptance criteria	1. The 'Superadmin' dashboard has a "Manage Staff" section. 2. The 'Superadmin' can view a list of all 'SK Council (Admin)' users. 3. A form is provided for the 'Superadmin' to create a new staff account. 4. An 'Edit' button is available for each staff account to update their details. 5. A 'Delete' button is available for each staff account.

Item	Description
Req ID	FR11
Description	The system shall enforce a maximum advance booking limit of 30 days for all reservations.
Priority	Medium
Functional Requirement Description	To prevent users from reserving equipment too far in the future and to ensure fair scheduling, the system must limit how far in advance a booking can be made.
Acceptance criteria	1. In the Borrower's reservation form (FR3), a date picker is used to select the event date.

_____

Item	Description
	2. The date picker prevents the user from selecting any date that is more than 30 days from the current system date.

Item	Description
Req ID	FR12
Description	The system shall display summary data on the staff/Superadmin dashboards, such as "Total Pending Requests," "Total Equipment Currently Borrowed," and "Total Available Equipment".
Priority	Medium
Functional Requirement Description	The SK Staff and Superadmin dashboards should provide an at-a-glance overview of the system's current status.
Acceptance criteria	1. The 'SK Staff' and 'Superadmin' dashboards display "widgets" or summary boxes upon login. 2. These boxes show a live count of `pending` reservations. 3. These boxes show a live count of `inprogress` (borrowed) reservations. 4. These boxes show a summary of available inventory (e.g., "Total Available Equipment").

Item	Description
Req ID	FR13
Description	The system shall be able to generate a report of all 'Completed' and 'Rejected' reservations.
Priority	Medium
Functional Requirement Description	The system must provide basic reporting capabilities for administrative review and record-keeping.
Acceptance criteria	1. A "Reports" section is available to 'SK Staff' and/or 'Superadmin'. 2. The user can select filters (e.g., "Completed", "Rejected") and an optional date range. 3. The system generates a list or page of all reservations that match the selected criteria.

_____

2.2 Non-Functional Requirements

Category	Requirement ID	Requirement Description
Security	NFR1	The system must protect Personally Identifiable Information (PII), such as the uploaded ID and selfie images, from unauthorized access.
	NFR2	The system must enforce role-based access control. A 'Borrower/Resident' must not be able to access 'SK Staff' or 'Superadmin' functions.
	NFR3	The system must have a secure authentication mechanism (login/password) to grant access to 'SK Staff' and 'Superadmin' dashboards.
Usability	NFR4	The interface for the 'Borrower/Resident' reservation form must be simple and intuitive, guiding the user through the process (form filling, file upload) with clear instructions.
	NFR5	The 'SK Staff' and 'Superadmin' dashboards must present summary data (widgets) in a clear and easily scannable format.
	NFR6	The system should provide clear confirmation messages to users after critical actions (e.g., "Your request has been submitted for review").
Reliability	NFR7	The system must accurately and consistently track the status of all reservations (Pending, Approved, Rejected, InProgress, Completed).

_____

	NFR8	The system's reservation status must update in real-time as 'SK Staff' take action (e.g., moving from 'pending' to 'approved').
Performance	NFR9	The system's dashboards and reports should load within an acceptable time frame (e.g., under 5 seconds) under normal conditions.
	NFR10	The file upload process for ID and selfie images must be efficient and provide clear feedback on success or failure[134].
Constraints	NFR11	The system must be a web-based application accessible via a standard browser.
	NFR12	The system must adhere to the 30-day advance booking limit.

2.3 Use Cases

Use Case ID	Name	Description	Actors
UC-01	Submit Reservation Request	A 'Borrower/Resident' fills out the reservation form, uploads their ID and selfie, and submits the request. The system marks it as 'pending'.	Borrower/Resident
UC-02	View Reservation Status	A 'Borrower/Resident' views a list of their past and present reservations to check the current status (e.g., Pending, Approved, Rejected).	Borrower/Resident
UC-03	Manage Pending Reservations	An 'SK Staff' member views the details of a 'pending' request, reviews the borrower's info and ID, and then 'Approves' or 'Rejects' the request.	SK Staff

_____

Use Case ID	Name	Description	Actors
UC-04	Track Borrow status	An 'SK Staff' member views the list of 'in-progress' (borrowed) items and marks a reservation as 'Returned' or 'Completed' when the equipment is brought back.	SK Staff
UC-05	Manage Staff Accounts	A 'Superadmin' accesses the staff management module to create, view, edit, or delete 'SK Council (Admin)' (staff) user accounts.	Superadmin
UC-06	View System Reports & Dashboard	An 'SK Staff' or 'Superadmin' views the main dashboard to see summary widgets and generates reports on 'Completed' and 'Rejected' reservations.	SK Staff, Superadmin

2.3.1 Use Case Diagrams

2.4 System Requirements

The system is designed as a modern web application with a distinct client-server architecture. The frontend (client-side) will be built using the React JavaScript library, utilizing the Vite.js framework for a fast development environment and optimized build. This client-side application will be accessible on any device with a modern web

_____

browser, including Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge. The backend (server-side) will be developed using Node.js, which will handle all business logic, API requests, and user authentication. All system data, including user information, equipment inventory, and reservation records, will be stored and managed in a MySQL relational database.

2.5 Business Rules

The system enforces specific policies to ensure proper management of equipment reservations and user accountability. These business rules are derived from the operational requirements defined in the project scope.

- **30-Day Advance Booking Limit:** A 'Borrower/Resident' cannot submit a reservation request for a date more than 30 days in the future.

- **7-Day Cancellation Policy:** A 'Borrower/Resident' is only permitted to cancel a reservation if the scheduled date is more than 7 days away.

- **Mandatory Admin Approval:** All new reservation requests are automatically set to 'pending' and must be manually reviewed and either 'Approved' or 'Rejected' by an 'SK Staff' member.

- **Required User Validation:** A reservation request must include an uploaded image of the borrower's valid ID and a selfie with their ID to be considered for approval.

- **Fixed Time Slot Selection:** Residents must select from three specific time slots when making a reservation: Morning Half-Day (7:00 AM - 12:00 PM), Afternoon Half-Day (1:00 PM - 6:00 PM), or Full Day (7:00 AM - 10:00pm)

_____

- **Damage Fee Liability:** 'SK Staff' are authorized to assign a fixed fee to a borrower for any equipment that is returned with non-repairable damage (e.g., Chair: 420php, Table: 1,800php, Tent: 6,500php).

2.6. Constraints

Constraints are limitations or restrictions that are imposed on the project and may affect its design or implementation.

- No Native Mobile Application: The system will be web-based and accessible via a browser. A native mobile app for iOS or Android is explicitly excluded from this project.
- No Automatic Notifications: The system will not include automatic SMS or email notifications for reservation reminders or confirmations in this version.
- No Offline Functionality: The system requires a stable internet connection to function. Offline access or data syncing is not supported.
- No Online Payments: The system will track damage fees owed by a borrower, but it will not include an integrated online payment gateway for settling these fees.

_____

2.7 Assumptions

Assumptions are factors that are considered to be true for the purpose of planning and executing the project.

- User Connectivity: All users ('Borrowers/Residents' and 'SK Staff') have access to a device with a modern web browser and a stable internet connection.

- Beneficiary Cooperation: The SK Council of Barangay Masambong will be available for interviews, data gathering, and User Acceptance Testing (UAT).

- Technical Environment: A suitable web hosting environment (server, database) will be available for the deployment of the final system.

- User Literacy: Users ('SK Staff' and 'Superadmins') can be trained and will be capable of using the system's administrative functions.

- Data Provision: The SK Council will provide the initial, accurate list of all borrowable equipment, their total quantities, and the agreed-upon damage fee amounts.

_____

2.8 Dependencies

Dependencies are external events or items that the project relies upon for its successful completion.

- Beneficiary Approval: The project's progression is dependent on formal approval and sign-off from the SK Council of Barangay Masambong.

- Hosting Environment: The final implementation and deployment of the system are dependent on the availability and configuration of a live web server.

- Third-Party Software: The system is dependent on the chosen technology stack (PHP, MySQL, Apache) functioning correctly.