

Exercise 1

1. Requirement: Overview of Available Rooms

- **Type:** Functional
- **Description:** The room booking service shall provide an overview of all available rooms in the selected university building.
- **Clarity:** This requirement is clear but lacks detail on how the overview should be presented.
- **Enhancement:** Specify the format of the overview (e.g., list, grid, map) and any required filters or sorting options. "The room booking service shall provide a list overview of all available rooms in the selected university building, sortable by room capacity and amenities."

2. Requirement: Date and Time Selection

- **Type:** Functional
- **Description:** The user shall enter a date and time of their interest.
- **Clarity:** This requirement is clear but could benefit from specifying the input method.
- **Enhancement:** Define the format for date and time input (e.g., date picker, time slots). "The user shall select a date and time using a calendar date picker and time slot selection interface."

3. Requirement: Real-Time Update

- **Type:** Quality (Performance)
- **Description:** Room bookings shall be updated in real-time, that is: if a user is looking at the overview and another user at the same time books a room, the overview shall be updated as fast as possible.
- **Clarity:** This requirement is somewhat clear but lacks specific performance metrics.
- **Enhancement:** Define the acceptable delay for real-time updates. "Room bookings shall be updated in real-time, with changes reflected in the overview within 2 seconds of any booking action by other users."

4. Requirement: User Authentication and Privileges

- **Type:** Functional
- **Description:** Room booking shall only be possible for logged-in users with respective privileges.
- **Clarity:** This requirement is clear but does not specify what privileges are needed.
- **Enhancement:** Detail the privilege levels and their corresponding permissions. "Room booking shall only be possible for users logged in with privileges that include booking permissions, specifically roles such as 'student', 'faculty', or 'administrator'."

5. Requirement: Initial and Final Version Timeline

- **Type:** Quality (Project Timeline)
- **Description:** An initial version of the room booking service shall be ready after 5 months, the first public version must be finished after 1 year. For the initial version used for testing among a small testing group, a simple text-based approach is fine, but for the final product, a graphical representation is required so that users have an easier time using the system.
- **Clarity:** This requirement is clear but could be broken down into more specific milestones.
- **Enhancement:** Specify key milestones and deliverables for each version. "An initial version of the room booking service, including a text-based overview and basic booking functionality, shall be ready after 5 months for testing among a small user group. The first public version, featuring a graphical user interface with an intuitive visual representation of room availability, must be completed within 1 year."

Exercise 2

Calendar

- **Provided Interfaces:**
 - I_Calendar_Display: Provides a view of all scheduled events.
 - I_Calendar_Manage: Allows authorized components to add, update, or delete events.
- **Required Interfaces:**
 - I_Courses_Data (from Courses): Retrieves course schedules.
 - I_Exams_Data (from Exams): Retrieves exam schedules.
 - I_RoomBooking_Status (from RoomBooking): Retrieves room booking statuses for events.
 - I_Users_Data (from Users): Retrieves user-specific events.

Grades

- **Provided Interfaces:**
 - I_Grades_Display: Provides access to student grades.
 - I_Grades_Manage: Allows authorized users to input and manage grades.
- **Required Interfaces:**
 - I_Users_Data (from Users): Retrieves student information.
 - I_Courses_Data (from Courses): Retrieves course information related to grades.
 - I_Exams_Data (from Exams): Retrieves exam results for grade calculation.

Users

- **Provided Interfaces:**
 - I_Users_Auth: Manages user authentication and authorization.
 - I_Users_Data: Provides access to user data.
- **Required Interfaces:**
 - I_Courses_Data (from Courses): Retrieves course enrollments for users.
 - I_Grades_Display (from Grades): Retrieves grades for users.
 - I_Materials_Access (from Materials): Manages access to course materials for users.
 - I_RoomBooking_Access (from RoomBooking): Manages room booking permissions for users.
 - I_Exams_Data (from Exams): Retrieves exam information for users.

Materials

- **Provided Interfaces:**
 - I_Materials_Access: Manages access to materials.
 - I_Materials_Manage: Allows instructors to upload and manage materials.

- **Required Interfaces:**

- **I_Courses_Data** (from Courses): Retrieves course-related materials.
- **I_Users_Data** (from Users): Manages access permissions based on user roles.

Courses

- **Provided Interfaces:**

- **I_Courses_Data**: Provides access to course information.
- **I_Courses_Manage**: Allows authorized users to manage course data.

- **Required Interfaces:**

- **I_Users_Data** (from Users): Retrieves instructor and student information.
- **I_Materials_Access** (from Materials): Links course materials to specific courses.
- **I_Grades_Display** (from Grades): Links course data to grading system.
- **I_Calendar_Manage** (from Calendar): Schedules course events.

RoomBooking

- **Provided Interfaces:**

- **I_RoomBooking_Access**: Manages access to room booking system.
- **I_RoomBooking_Status**: Provides real-time room availability.
- **I_RoomBooking_Manage**: Allows authorized users to book rooms.

- **Required Interfaces:**

- **I_Users_Auth** (from Users): Verifies user authentication and privileges.
- **I_Calendar_Manage** (from Calendar): Updates room booking information in the calendar.

Exams

- **Provided Interfaces:**

- **I_Exams_Data**: Provides access to exam schedules and results.
- **I_Exams_Manage**: Allows authorized users to manage exam data.

- **Required Interfaces:**

- **I_Users_Data** (from Users): Retrieves information about students and instructors.
- **I_Courses_Data** (from Courses): Links exams to specific courses.
- **I_Calendar_Manage** (from Calendar): Schedules exam events.
- **I_Grades_Display** (from Grades): Provides exam results for grade calculation.

Interface Descriptions

1. **I_Calendar_Display**: Displays all events relevant to the user, including lectures, exams, and other university events.
2. **I_Calendar_Manage**: Allows adding, updating, and deleting events in the calendar.
3. **I_Courses_Data**: Provides detailed information about courses, including schedules and enrolled students.
4. **I_Exams_Data**: Provides information about exams, including schedules and results.
5. **I_RoomBooking_Status**: Shows real-time availability of rooms.
6. **I_Users_Data**: Provides user-specific data, including personal details, roles, and privileges.
7. **I_Grades_Display**: Shows student grades and allows authorized users to manage grades.
8. **I_Users_Auth**: Manages user authentication and authorization.
9. **I_Materials_Access**: Manages access to course materials, including permissions based on user roles.
10. **I_Materials_Manage**: Allows uploading and managing course materials.

11. **I_Courses_Manage**: Allows managing course information, including creation and updates.
12. **I_RoomBooking_Access**: Manages permissions for accessing the room booking system.
13. **I_RoomBooking_Manage**: Manages room booking operations.