**Use Case Design for Dormitory Accommodation Management System**

**Use Case 1: Register User**

**Actors**: New User, System  
**Preconditions**: The user must not already have an account.  
**Basic Flow**:

1. The user provides personal details (name, email, password).
2. The system validates the input data.
3. The system creates a new user account.

**Postconditions**: A new user account is created.  
**Extensions**: If the email is invalid or already in use, the system prompts the user to correct it.

**Use Case 2: Log In**

**Actors**: Registered User, System  
**Preconditions**: The user must have an active account.  
**Basic Flow**:

1. The user provides login credentials (email, password).
2. The system validates the credentials.
3. The system grants access based on the user's role.  
   **Postconditions**: The user is authenticated and redirected to their dashboard.  
   **Extensions**: If the credentials are incorrect, the system shows an error message.

**Use Case 3: Manage Dormitory**

**Actors**: Administrator  
**Preconditions**: The administrator must be logged in.  
**Basic Flow**:

1. The administrator selects the "Manage Dormitory" option.
2. The administrator can add, edit, or delete dormitory details.
3. The system saves changes and updates the dormitory list.  
   **Postconditions**: The dormitory details are updated in the system.  
   **Extensions**: If there is a conflict, the system shows an error message (e.g., duplicate dormitory adress).

**Use Case 4: Manage Room**

**Actors**: Administrator  
**Preconditions**: The administrator must be logged in.  
**Basic Flow**:

1. The administrator selects a dormitory.
2. The administrator adds, edits, or deletes rooms.
3. The system saves changes and updates room availability.  
   **Postconditions**: Room details are updated in the system.

**Use Case 5: Book a Room**

**Actors**: Student, System  
**Preconditions**: The user must be logged in and have no active bookings.  
**Basic Flow**:

1. The user searches for available rooms.
2. The user selects a room, dates of booking and submits a booking request.
3. The system verifies the room's availability and confirms the booking.
4. The user receives a booking confirmation.  
   **Postconditions**: A new booking is created for the user.  
   **Extensions**: If the room is unavailable, the system suggests alternative options.

**Use Case 6: Make a Payment**

**Actors**: Аdministrator, System  
**Preconditions**:  
**Basic Flow**:

1. The user provides payment details and confirms the transaction.
2. The system records the payment and generates a receipt.  
   **Postconditions**: The payment is processed, and the booking status is updated.  
   **Extensions**: If the record fails, the user is notified and can retry.

**Use Case 8: Generate Reports**

**Actors**: Administrator  
**Preconditions**: The administrator must be logged in.  
**Basic Flow**:

1. The administrator selects the "Generate Reports" option.
2. The administrator chooses the type of report (e.g., occupancy rate, payment status).
3. The system compiles the data and generates a report.
4. The administrator views or downloads the report.  
   **Postconditions**: The requested report is available for analysis.