INTERNATIONAL BURCH UNIVERSITY

FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGIES

DEPARTMENT OF INFORMATION TECHNOLOGIES

Software Requirements Specification

Hotel Information System

Team members:
Hannan Fočo
Ajla Čakić

Table of Contents

IBU International Burch University

SYSTEM ANALYSIS AND DESIGN
PROJECT PROPOSAL

Project Title: Hotel Information System

Start Date: 21.10.2023 **End Date:** 31.01.2024

Project Manager: Hannan Fočo, Ajla Čakić

Project Sponsor: CEO of Hotel

Purpose and business need:
-Improve overall efficiency and reduce manual work, therefore increasing productivity.
-Improved data management useful for decision making and better bussines information insides.
-Easier and more reliable customer experience.
-Improving bussines by having online presence.
-Engagement with target audience.
-Better communication between employees, teams and external partners.
-Making improvements by gathering feedback.

Customers/Users: Travellers, event planners, families on vacation. The users are in the age groups of 16-60's, genders equally included. On the other side are administrative workers, front desk staff.

Goals and objectives:
-Employee development and job satisfaction
-Personalized guest experience
-Transparent communication and cost, avoiding scams.
-Ravenue growth
-Standout in the competitive market.
-Better customer experience

Project priorities:

-Improving quest experience.

-Ravenue management

-Maximize room management

-Improve staff productivity by reducing manual tasks.

-Evolving needs and expectations from guests

Constraints and special issues:

-Potential system downtime caused by technical issues resulting in guest inconvenience and financial loss.

-Risk of technology glitches where overbooking or guest losses can happen.

-Needing more experienced and technology oriented staff

-Need for technical support and maintenance for issue resolving

-Fitting the features in the budget limitations.

Risks and obstacles to success:
-Data breaches, cyber security threats.
-Software bugs and technical issues that can disrupt the functionings and bookings.
-Payment issues.

Technical Leads:

Hannan Fočo

Ajla Čakić

IBU International Burch University	**SYSTEM ANALYSIS AND DESIGN** ***REQUIREMENTS***

Functional Requirements

1.Feature name: Register
Role(s): Guests.
Feature description/steps:
Users are given a registration form to fill in necessary data in order to register to the system. At first he can choose roles between guest, worker. In the form are fields which require input such as name, surname, email address, phone number and most importantly account password, with an additional field to repeat the same password. Passwords must meet specific criteria (minimum 8 characters, combination of letters and numbers, no special symbols, capital letters). The system checks if all required text fields have been filled out and sends out account confirmation email.
Dependencies/constraints:
Name and surname field must consist of only letters. Both fields must match and meet criteria.
2.Feature name: Login
Role(s): user, customer, frontdesk workers, housekeeping staff
Feature description/steps:
Users will be given two field to fill out, Username and password. Additional "login" button will be shown which is pressed after filling these fields out. After checking if the username and password match the user will be able to proceed to the system. "password incorrect" message will be shown if the password does not match registered profile. If the user forgot his password "forgot password?" button will show for him to click it and reset it via email confirmation.
Dependencies/constraints:
Password and username must match the registered ones. Confirmation mail must be confirmed in order to reset password. If the user is not previously registered, he will not be able to log in.

3. Feature name: Housekeeping Management
Role(s): Housekeeping Staff, Hotel Front Desk Staff
Feature description/steps:
Housekeeping staff logs into the system and view a list of rooms that require cleaning or maintenance. The system displays room statuses (e.g., dirty, clean, under maintenance). Staff updates the status of the rooms in the systems, which are cleaned, and mark those tasks as completed. Front desk staff can view real-time room statuses and assign cleaning tasks based on check-out and check-in times.
Dependencies/constraints:
Real-time Updates: The system needs constant updates about the status of rooms, so it relies on a good, steady network to make sure housekeeping, the system, and the front desk can talk to each other quickly and without any problems. This way, everyone knows which rooms are clean and ready for guests. The system needs to make sure that the information between the front desk and housekeeping modules always matches up correctly. Room status validation: The system

needs to check that room statuses are correct and make sure they're updated accurately. If the statuses are wrong, it can cause confusion and problems
with how things work in the hotel.

4.Feature name: Search

Role(s): customer

Feature description/steps:

The user will be prompted field so fill in information necessary for room searching adopted to his needs. He will be needed to give arrival and departure date(number of nights), number of persons. He will be able to search and pick preferred available rooms in the hotel that match his request. The vary by room type, bed type and price.

Dependencies/constraints:

All user-entered information must match format. Correct room rates should be showcased in the pages for him to pick best match. Hotel room availability depends on provider availability.

5. **Feature name:** Reservation

Role(s): customer, paying atuhority

Feature description/steps: Users are able to book facilities on the system. Payment options according to the chosen room price will be shown, either to pay with credit card or at desk. If user chooses to pay with credit card he must enter credit card number, holder, cvs and expiration date. If all fields match and the payment is accepted a confirmation mail will be sent with the invoice to the registered email

Dependencies/constraints:

If any of the fields is not filled in or in the right form, payment won't be accepted. Billing and payment processes should be secure and compliant with financial regulations. The payment system is constrained by pricing policies, including cancellation fees, and other financial policies set by the hotel.

6. **Feature name:** Manage booking details

Role(s):customer, front desk staff

Feature description/steps: Users, primarily guests and hotel staff, use it to access and modify specific reservation information. Users can view and edit details related to their reservations, such as dates of stay, room type, guest names, special requests, and additional services or amenities. Guests using this feature can review their booking details, update personal information, make changes to their reservation (if allowed by the hotel's policies).For front desk workers, the feature enables them to access and modify reservation information, allocate specific rooms based on guest preferences or availability.

Dependencies/constraints: It relies on the accurate and up-to-date information from the reservation system to display and modify booking details. Ensuring that only authorized users, such as guests or hotel staff, can access and modify the booking details. The feature must adhere to strict data privacy regulations, protecting guest information. Depending on hotel policy some data can be changed, but some not.

7. **Feature name:** Room management

Role(s): hotel front desk staff

Feature description/steps:

Room management encompasses the administration and control of various aspects related to hotel rooms, ensuring their efficient allocation, maintenance, and utilization. This feature involves managing and maintaining details about room inventory, room types, availability, and status (clean, occupied, vacant, out of service). Gives overview of occupied and free hotel capacity.

Dependencies/constraints:

It relies on the integration with the reservation system to maintain accurate room availability, allocations, and updates based on guest bookings and requests it also depends on the housekeeping management system, ensuring that rooms are ready for new guest arrivals and maintaining accurate room statuses.

8. **Feature name:** Messaging

Role(s): customer, hotel frontdesk staff

Feature description/steps: Guests can use the messaging feature to communicate with the hotel staff for various purposes, such as asking question for room service, housekeeping, or to inquire about hotel amenities, local recommendations, or any issues related to their stay. It is also a crucial feature for users having problems with reservations or not sure how to make one, the hotel staff will be available to resolve their problems and help them.

Dependencies/constraints:

Communication should be secure and encrypted. Messages and notifications should be sent to the intended recipients(worker).

9. **Feature name**: Check-In and Check-Out Management
Role(s): hotel front desk staff , customers

Feature description/steps: (check-in)The check-in and check-out feature is very important for the inner functioning of the business itself and also for a better customer experience where they can ensure they stay at the hotel without any concerns.
The steps for the check-in are:
1. Front desk staff logs in to the system using their credentials
2. Staff then has to identify the customer with any legal document like ID or password and they put the information in the system.
3. When they put in that ID number for example system displays information about customer room type, check in check-out dates, or any other preferences that they asked for when they reserved the room in the hotel.
4. The staff then assigns the room to the customer and then provides them with access Cards(keys) for their room.

Feature description/steps:(check out)
1. When they want to check out front desk staff reviews the bill, and they check if there are any additional charges that need to be taken care of.
2. Then the guest provides payment details and information and the staff processes the payment through the system.

3. After that, the system sends an electronic invoice to the email of the customer that includes all the details of their charges and taxes.

Dependencies/constraints:

Check-in process heavily relies on the accuracy of the reservation system. It requires the correct details of the guest's booking to verify and confirm the reservation, room type, duration of stay, and any special requests or preferences. Access to accurate guest information and proper identification is necessary to complete the check-in process. For prepaid reservations or incidental charges, the check-in process may involve payment verification. The check-out process depends on updating the room's status in the system, indicating that it's now vacant, available for housekeeping, and ready for the next guest.

10.Feature name: System management

Role(s): admin

Feature description/steps: System administrators can access detailed reports and analytics, offering insights into the hotel's performance metrics, financial data, occupancy rates, and other key indicators.

Dependencies/constraints: The reporting feature relies on accurate and timely data integration from system, using data collecting tools. Inaccurate or incomplete data can constrain the effectiveness of reporting.

Nonfunctional Requirements

1.Performance: There can be problems with the performance of the system where the check-in check-out process should be very fast and under 5 minutes per guest. Also, the billing through the system should be very fast and with no errors or glitches so the customer has a great experience.
2. Availability: The system should be running 24/7 so that guest can book their rooms at any time of the day when they want to arrive.
3.Data protection: All the personal information of the guests and any payment details should be protected and encrypted.
4.Usability: The interface of the app should be very clear and easy to navigate so that additional training for front desk staff is not necessary.
5.Scalability: The system should handle any sudden stream of check-in and check-out, especially for holiday seasons or events so there is no change in performance.
6. Compliance: The system should have compliance with payment card industry standards. Compliance with GDPR ensures that organizations handle personal data with transparency and security, safeguarding individual privacy, while adhering to PCI DSS standards is vital for securely processing payment card information, preventing fraud, and maintaining trust with customers.
7. Interoperability: It should also be able to connect with external services, like those that verify people's identities or process payments, without any hitches, making everything run together seamlessly.
8. Reliability: Data integrity should be maintained, and the system should recover gracefully from any unexpected failures, such as network interruptions.
9. Response time: The system should respond to user interactions within 2 seconds, ensuring that both front desk staff and guests experience minimal wait times during the check-in and

check-out processes.

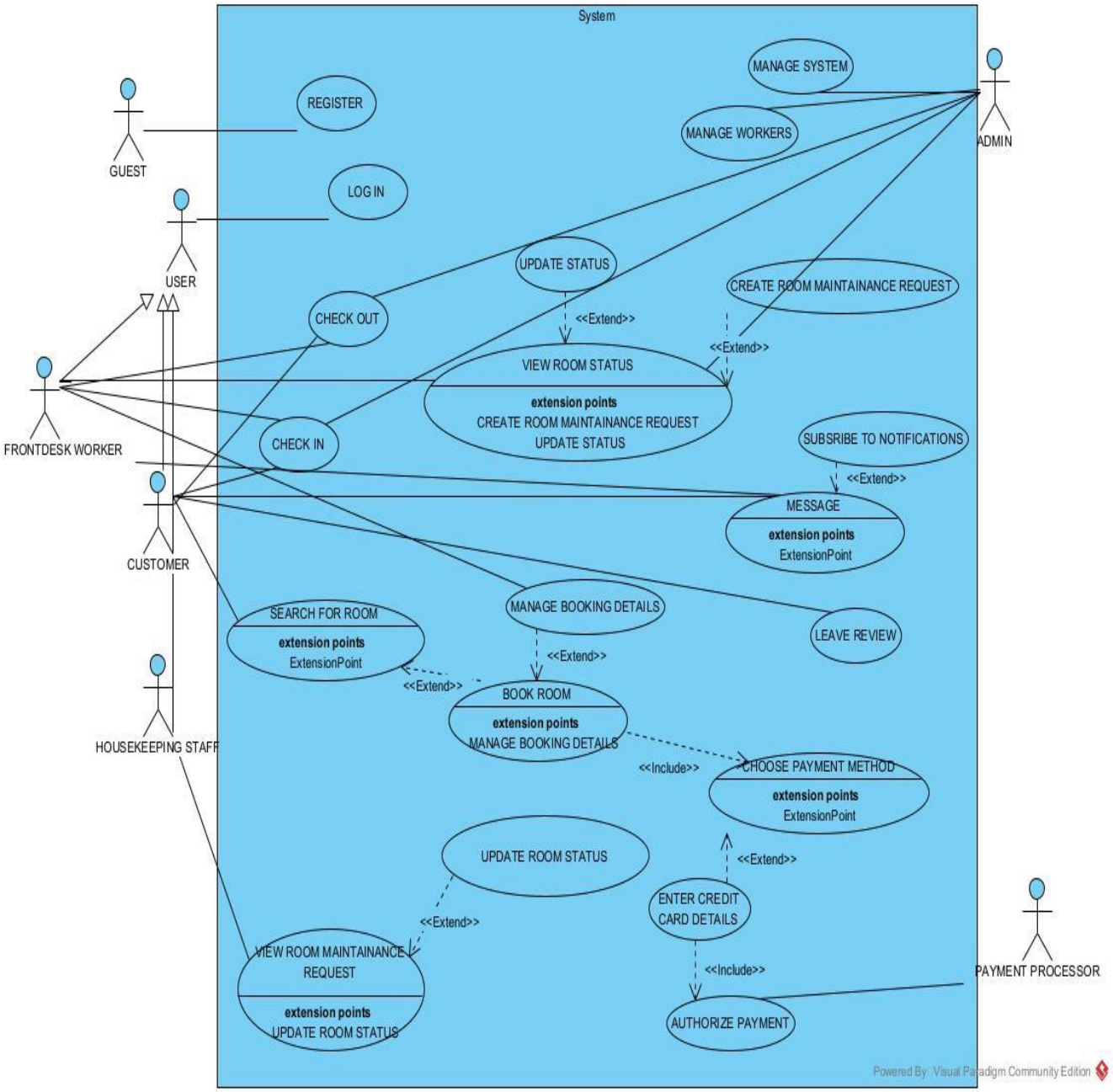
10.Auditability: The system should keep a detailed record of every check-in and check-out, including who did what, when they did it, and what exactly happened. These records should be available only to authorized people and kept for at least a year to help with audits, ensuring everything is done correctly, and resolving any disputes or compliance

11.Usability:The system's user interface should be designed in a way that makes it simple and easy for the housekeeping staff to understand and use. It should be straightforward, with clear menus and buttons that help them quickly find what they need, and there should be training materials and documents available to provide guidance and support to the housekeeping staff in case they need help or have questions about how to use the system effectively.

12.Scalability:The system needs to be able to grow with the hotel, handling more rooms and tasks as the hotel gets bigger. It should also be able to help manage cleaning tasks for more and more guests as the hotel expands.

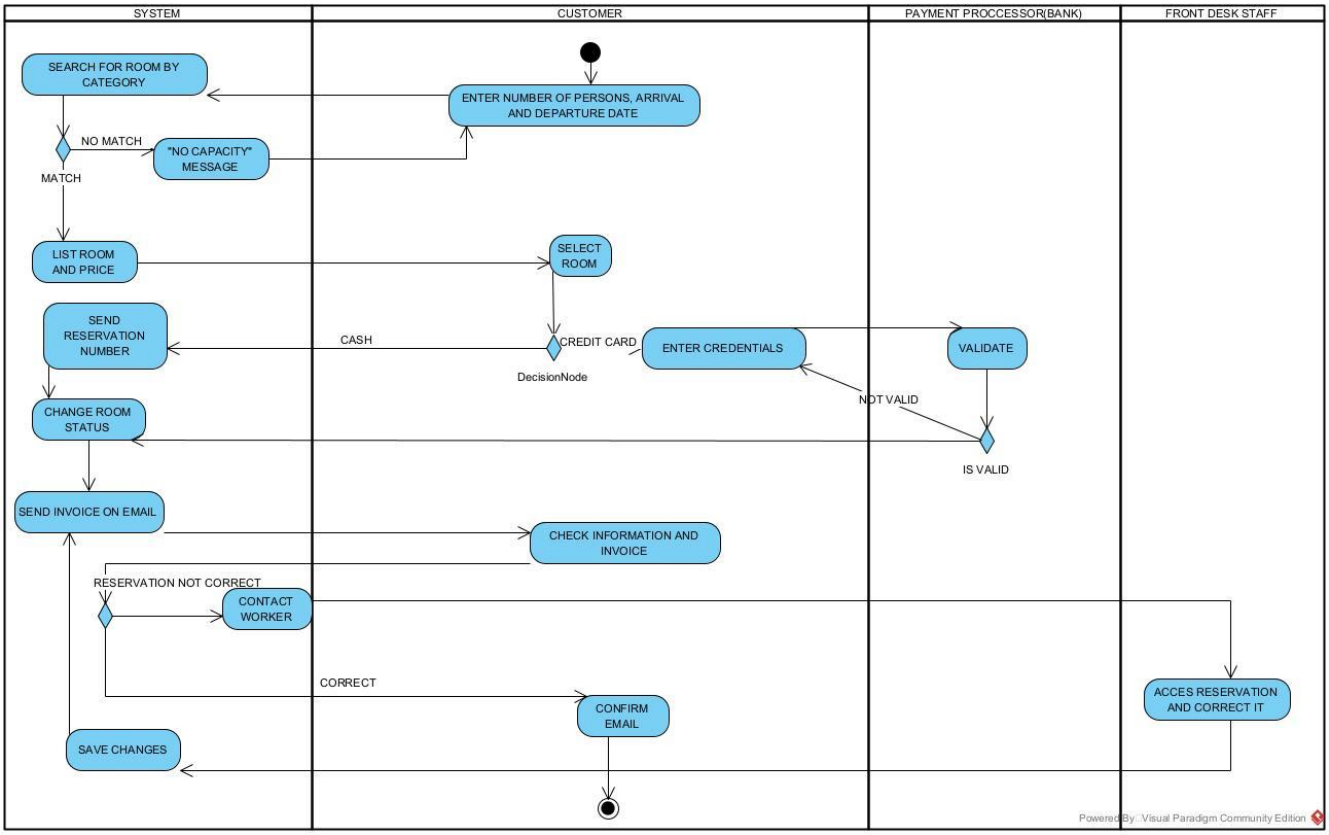
13. Data Backup and Recovery: There should be automated processes to back up data, which helps prevent data loss if there are problems with the system. If data gets damaged or lost, there should also be ways to recover it and get things back to how they were before.

3.Use case diagram

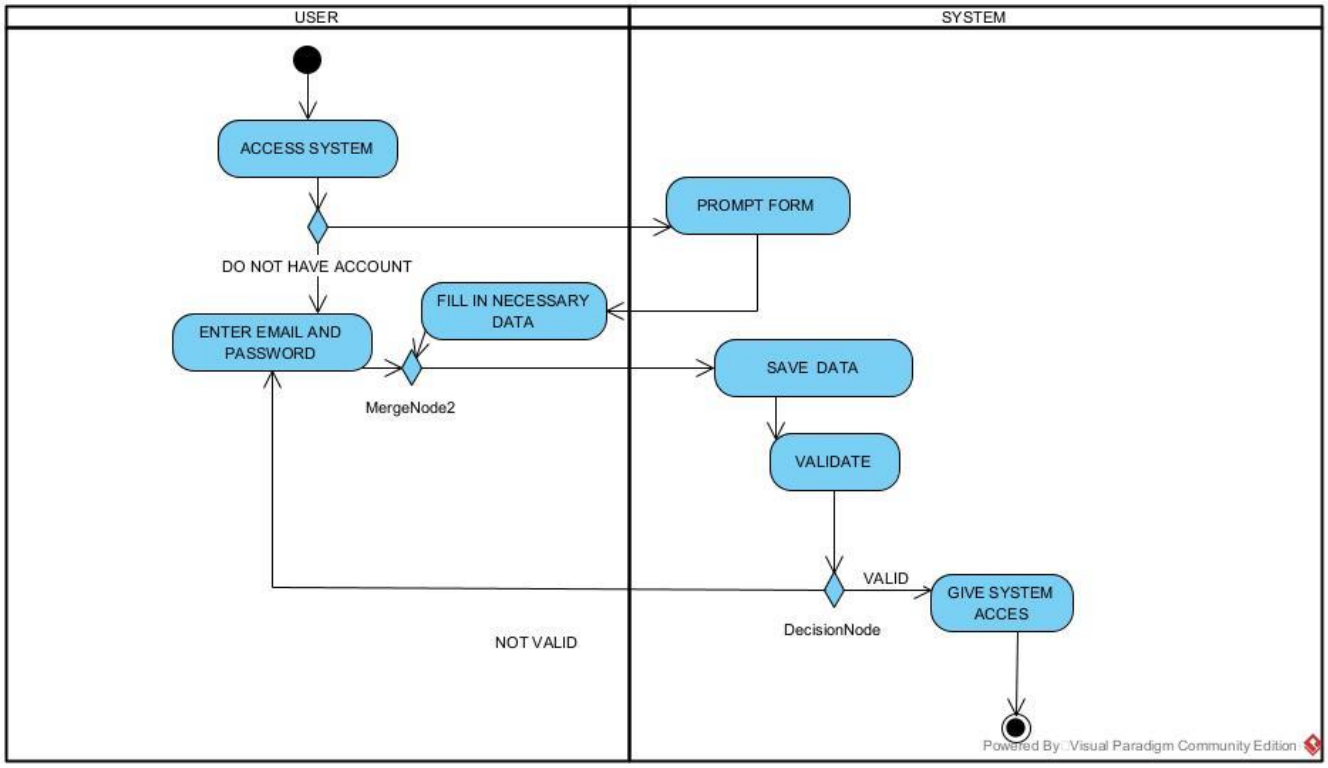


4.Activity diagrams

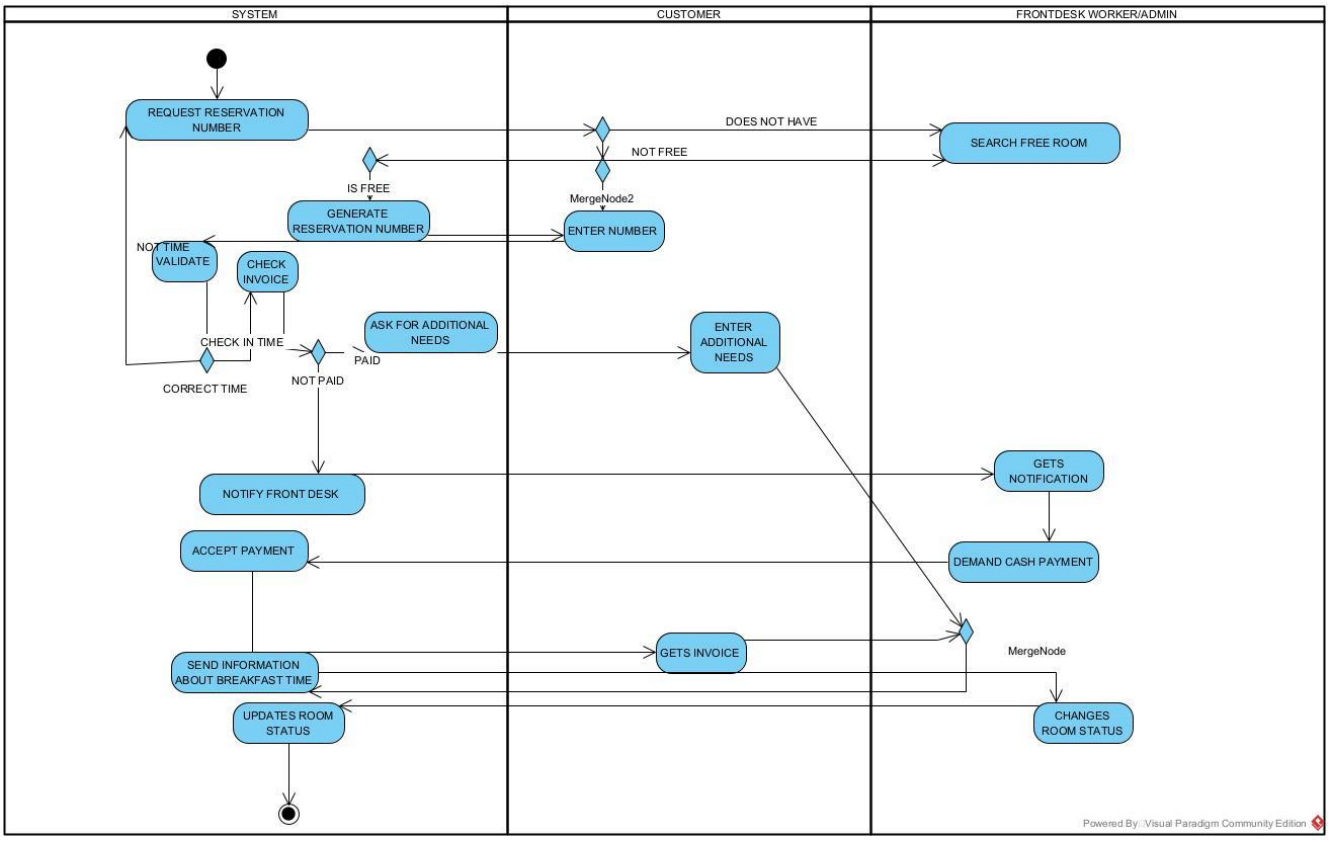
“search and book”



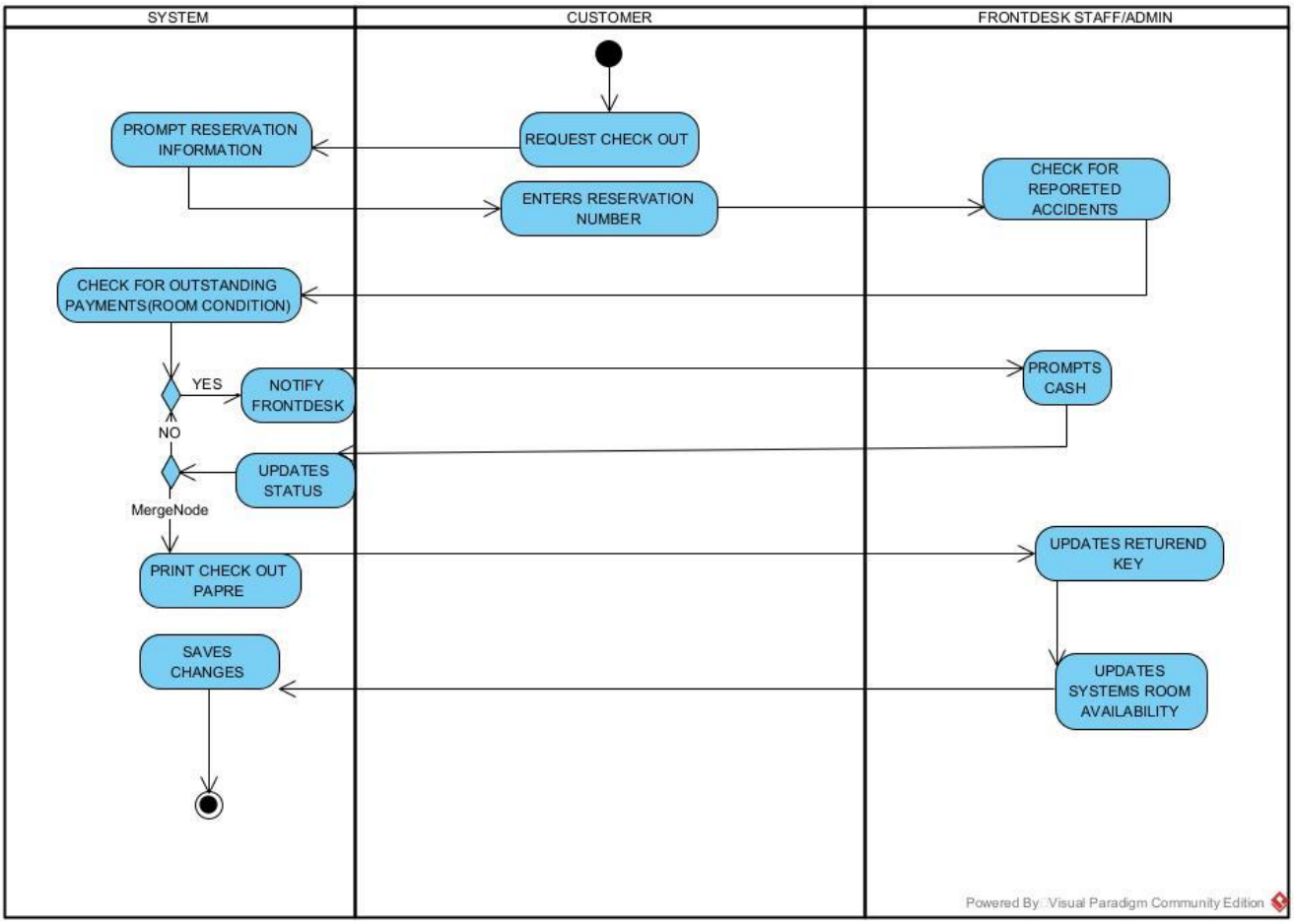
“login and register”


USER
SYSTEM
ACCESS SYSTEM
PROMPT FORM
DO NOT HAVE ACCOUNT
FILL IN NECESSARY DATA
ENTER EMAIL AND PASSWORD
SAVE DATA
MergeNode2
VALIDATE
VALID
GIVE SYSTEM ACCES
DecisionNode
NOT VALID
Powered By Visual Paradigm Community Edition

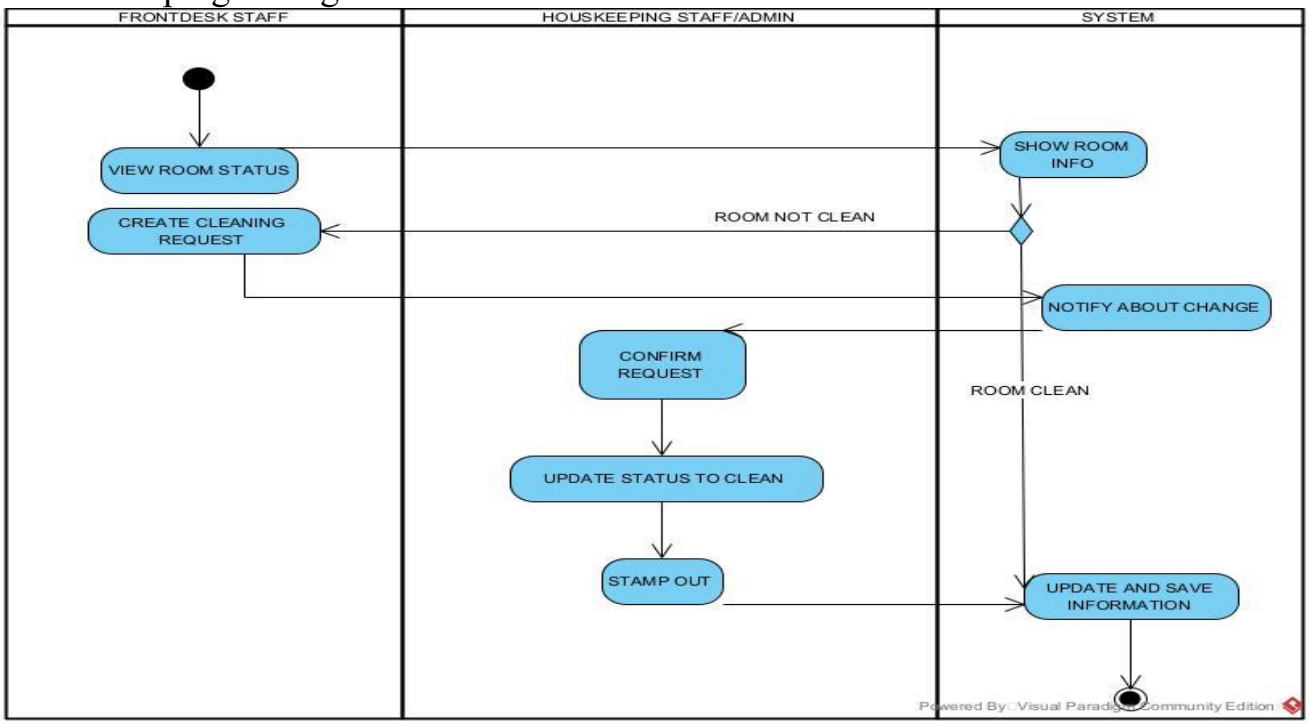
"check in"


SYSTEM
CUSTOMER
FRONTDESK WORKER/ADMIN
REQUEST RESERVATION NUMBER
DOES NOT HAVE
SEARCH FREE ROOM
NOT FREE
IS FREE
MergeNode2
GENERATE RESERVATION NUMBER
ENTER NUMBER
NOT TIME VALIDATE
CHECK INVOICE
CHECK IN TIME
ASK FOR ADDITIONAL NEEDS
ENTER ADDITIONAL NEEDS
PAID
NOT PAID
CORRECT TIME
GETS NOTIFICATION
NOTIFY FRONT DESK
ACCEPT PAYMENT
DEMAND CASH PAYMENT
GETS INVOICE
MergeNode
SEND INFORMATION ABOUT BREAKFAST TIME
UPDATES ROOM STATUS
CHANGES ROOM STATUS
Powered By Visual Paradigm Community Edition

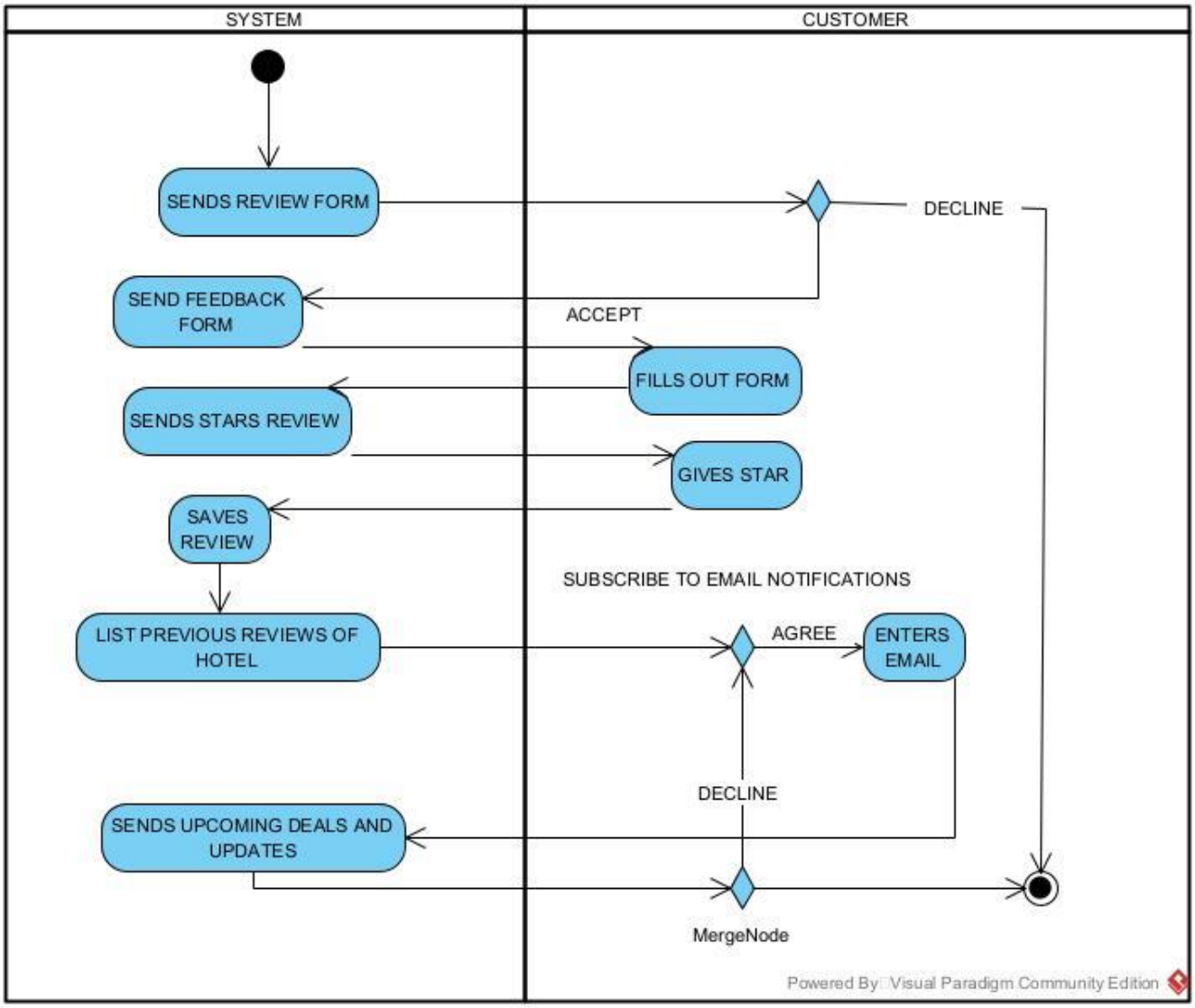
“check out”


SYSTEM
CUSTOMER
FRONTDESK STAFF/ADMIN
PROMPT RESERVATION INFORMATION
REQUEST CHECK OUT
ENTERS RESERVATION NUMBER
CHECK FOR REPORETED ACCIDENTS
CHECK FOR OUTSTANDING PAYMENTS(ROOM CONDITION)
YES
NOTIFY FRONTDESK
PROMPTS CASH
NO
UPDATES STATUS
MergeNode
PRINT CHECK OUT PAPRE
UPDATES RETUREND KEY
SAVES CHANGES
UPDATES SYSTEMS ROOM AVAILABILITY
Powered By Visual Paradigm Community Edition

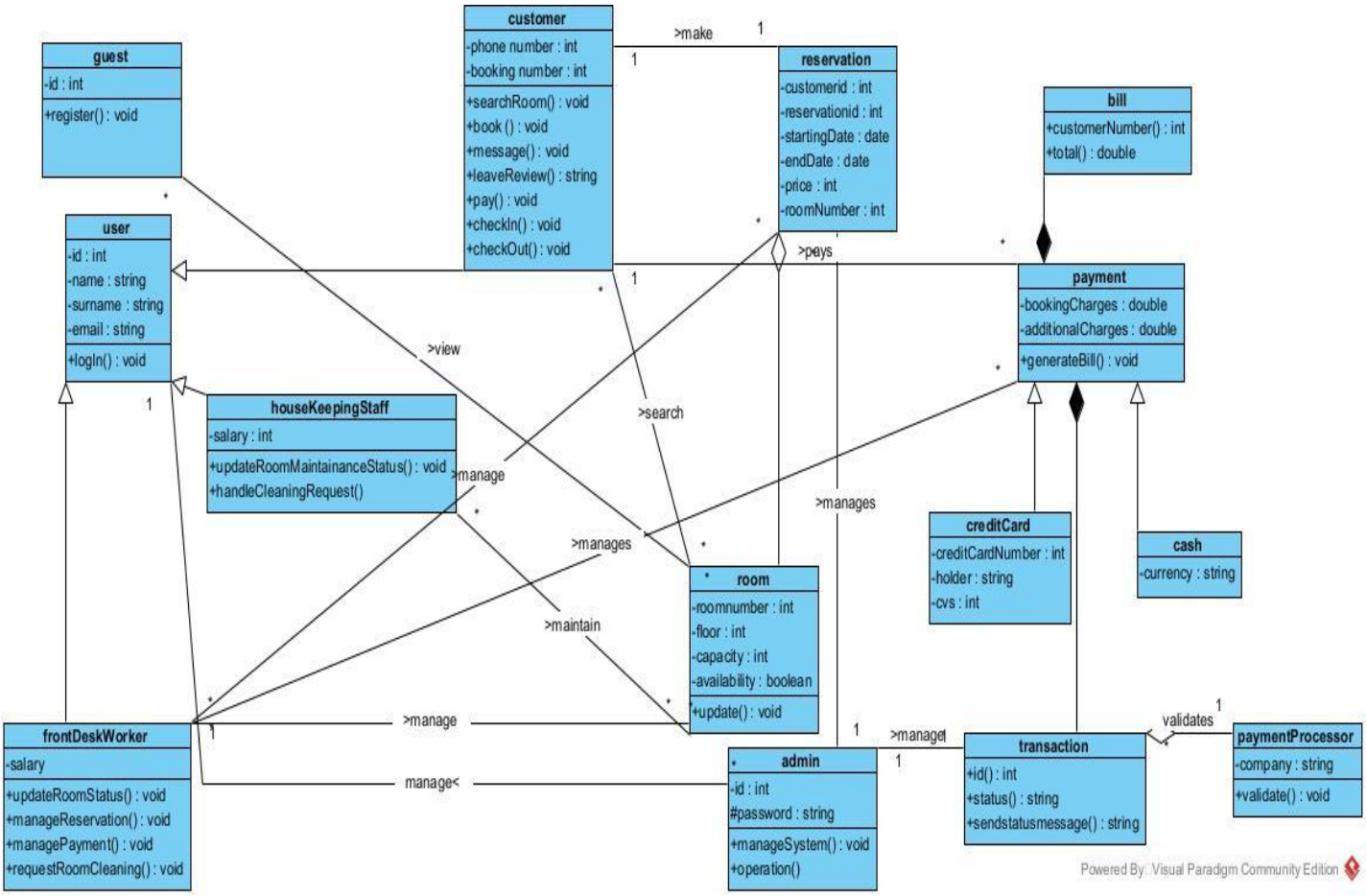
“house keeping management”



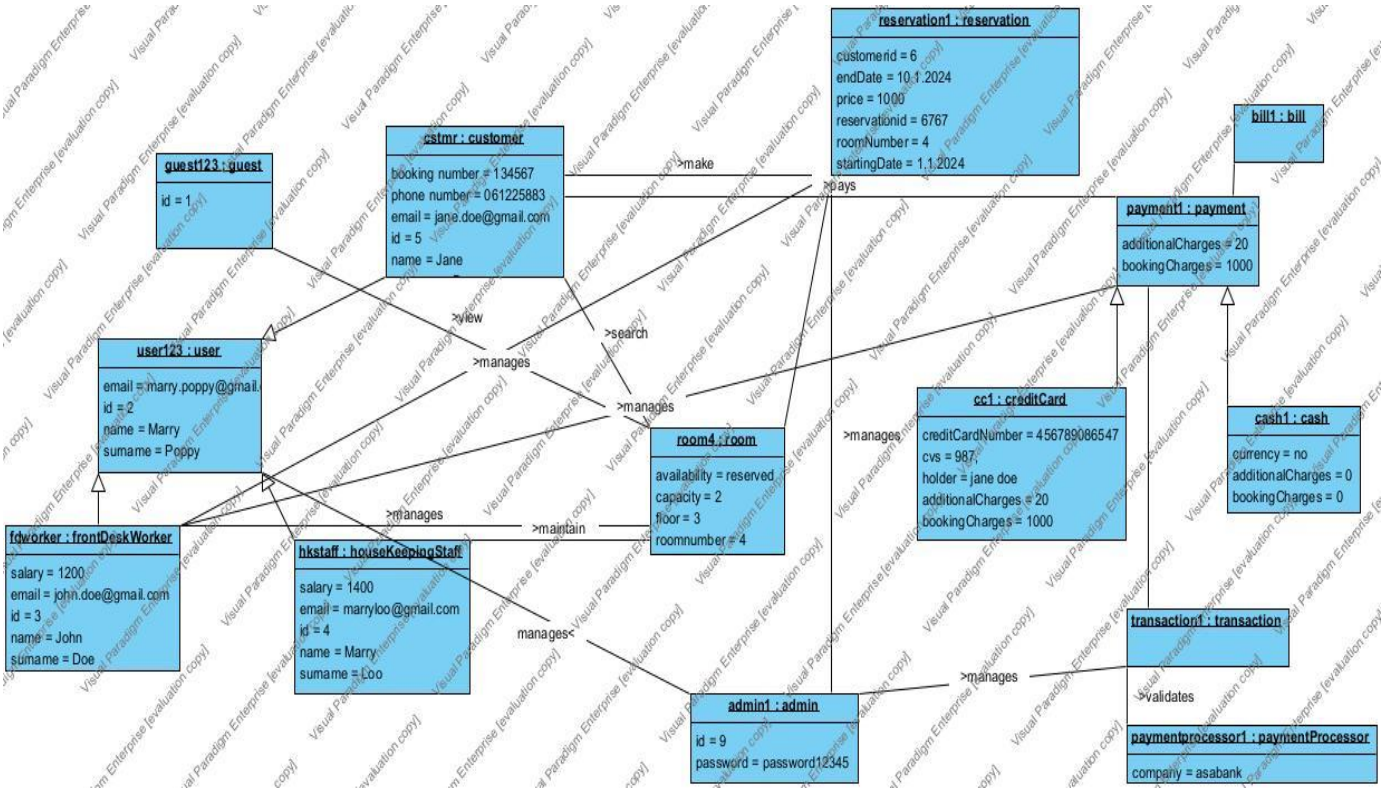
"review"


SYSTEM
CUSTOMER
SENDS REVIEW FORM
DECLINE
SEND FEEDBACK FORM
ACCEPT
FILLS OUT FORM
SENDS STARS REVIEW
GIVES STAR
SAVES REVIEW
SUBSCRIBE TO EMAIL NOTIFICATIONS
LIST PREVIOUS REVIEWS OF HOTEL
AGREE
ENTERS EMAIL
DECLINE
SENDS UPCOMING DEALS AND UPDATES
MergeNode
Powered By Visual Paradigm Community Edition

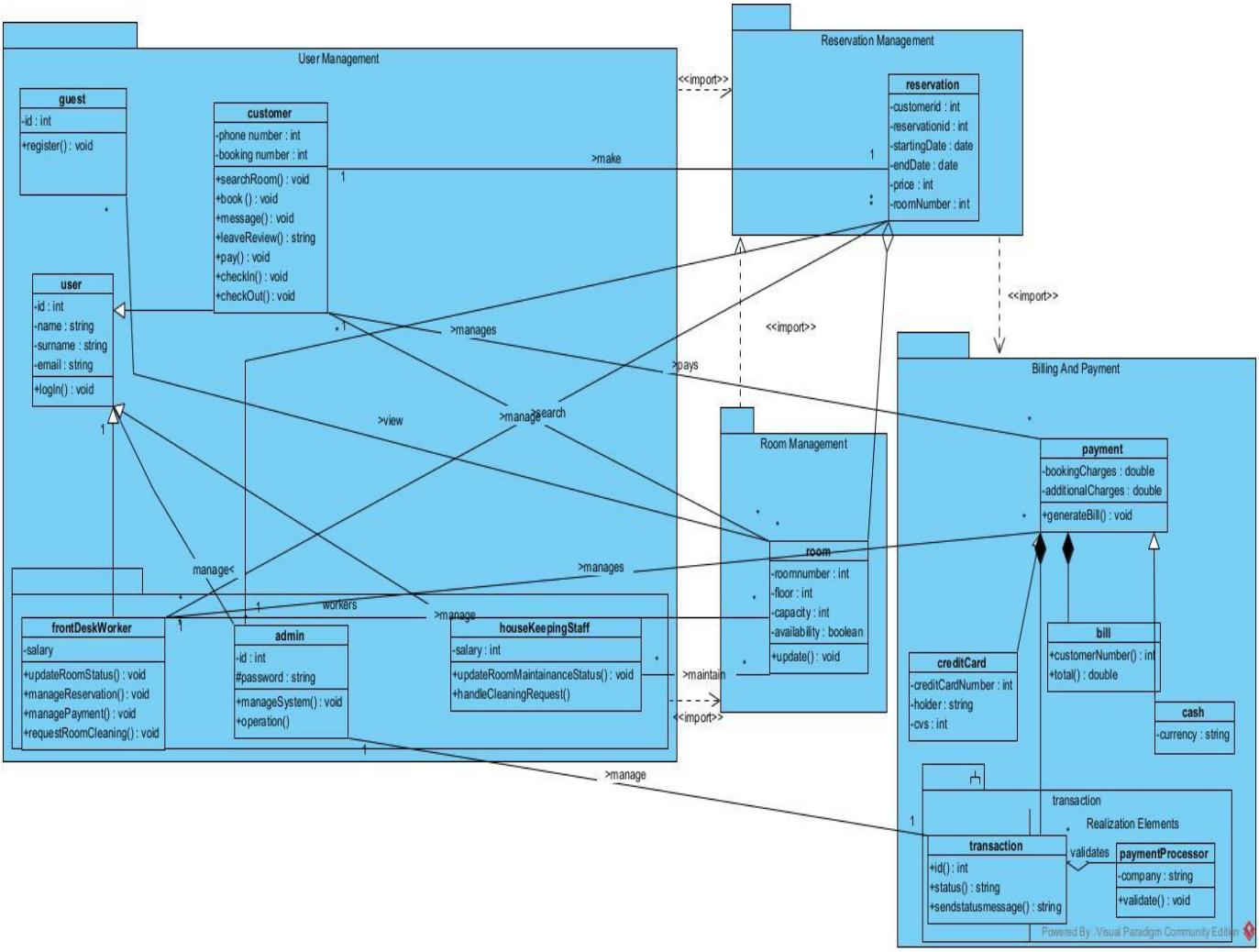
5. class diagram



6.Object diagram

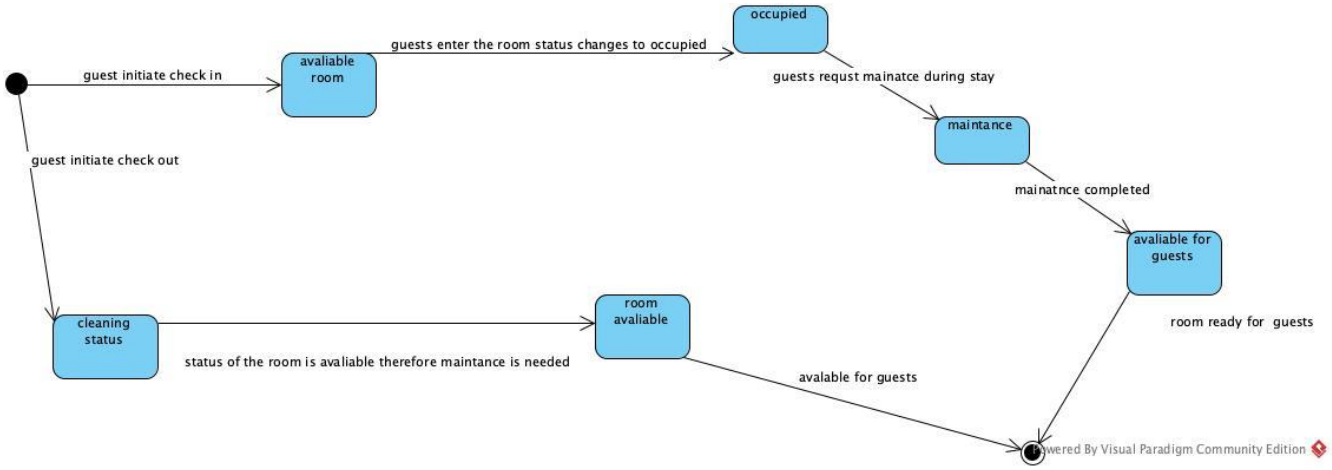


7.Package Diagram

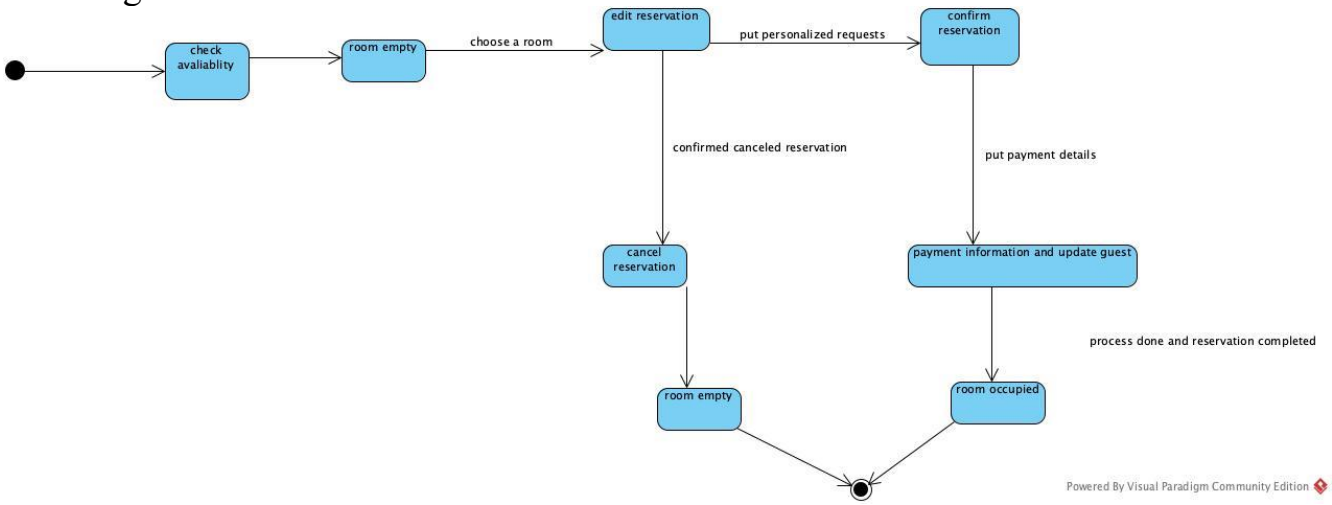


8. State diagrams

“check in and check out”

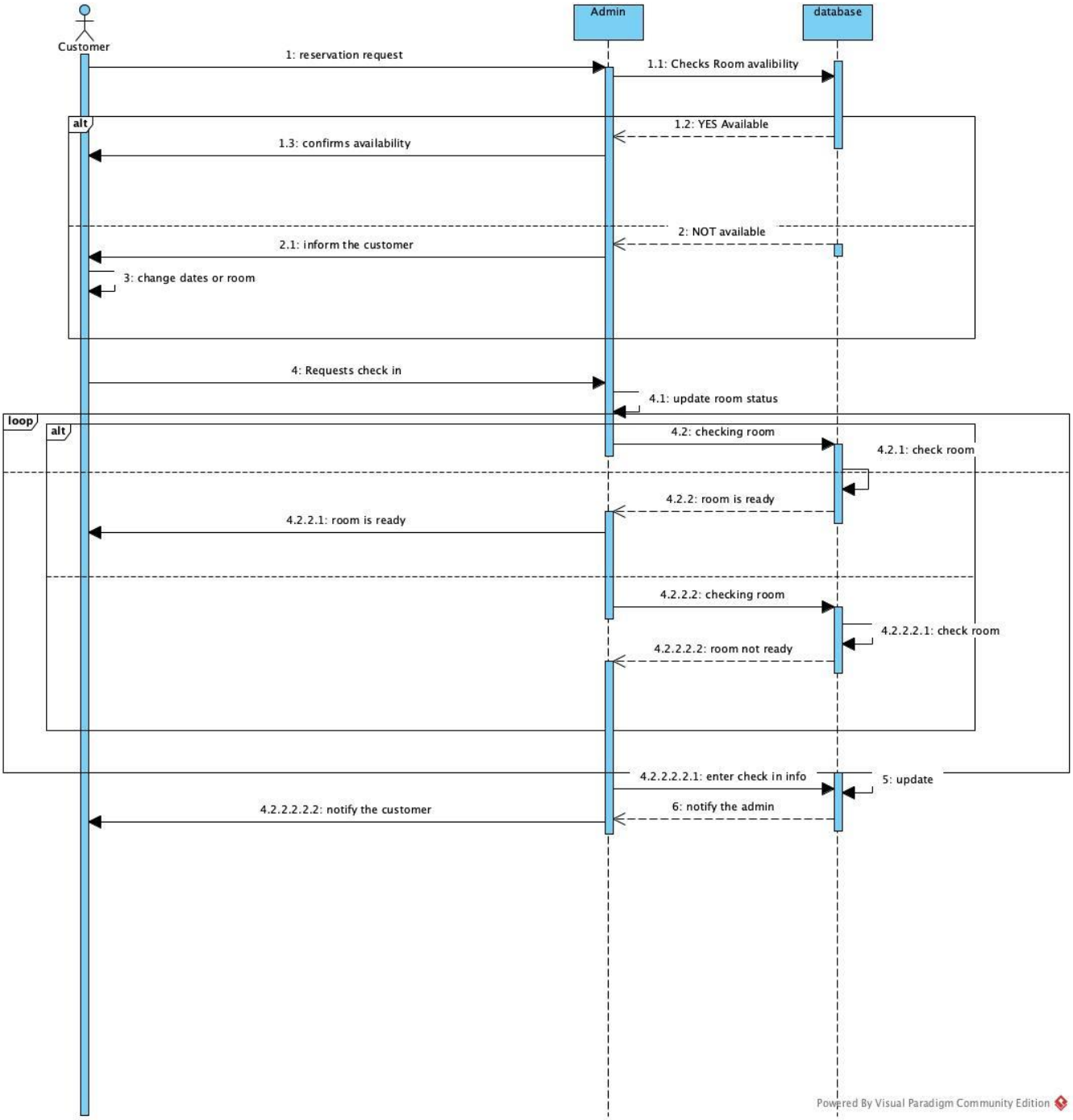


“booking”

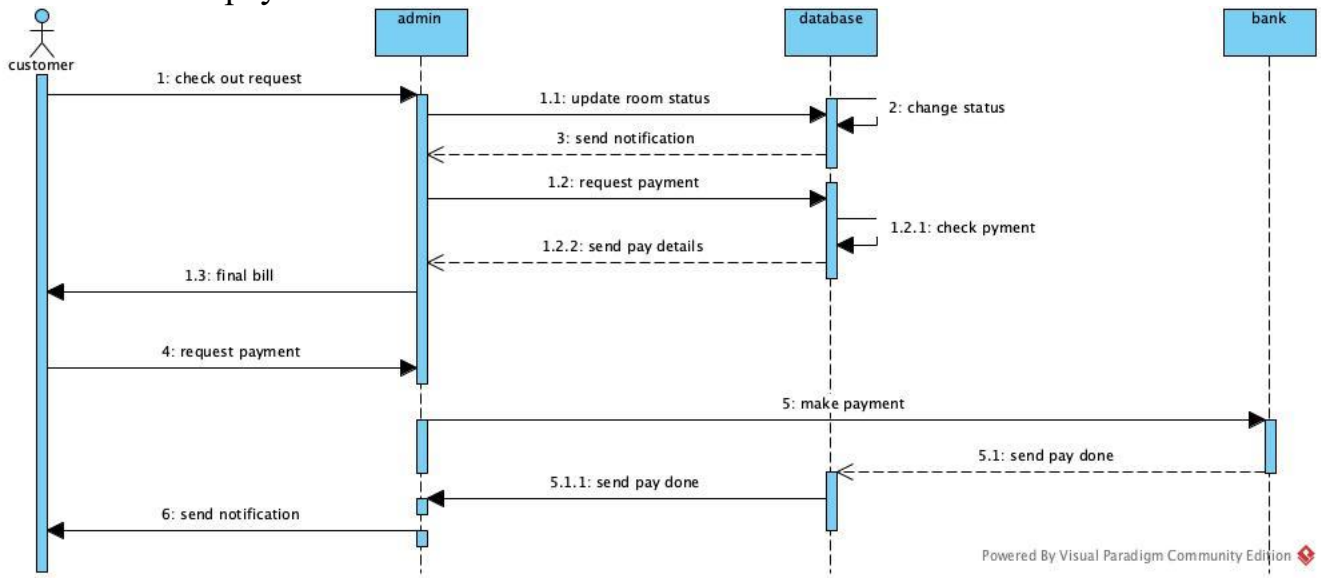


9. Sequence diagrams

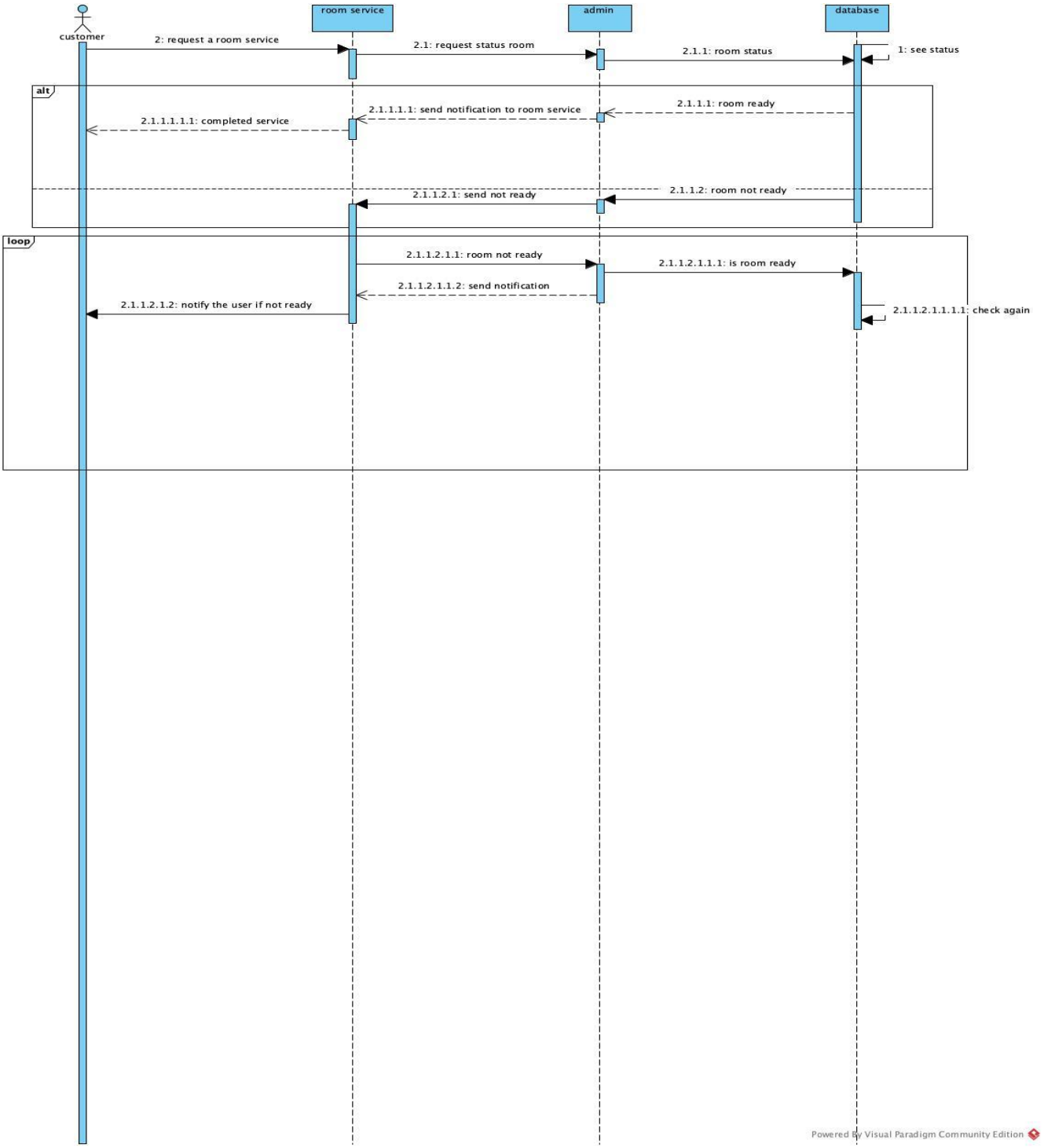
“reservation and check in”



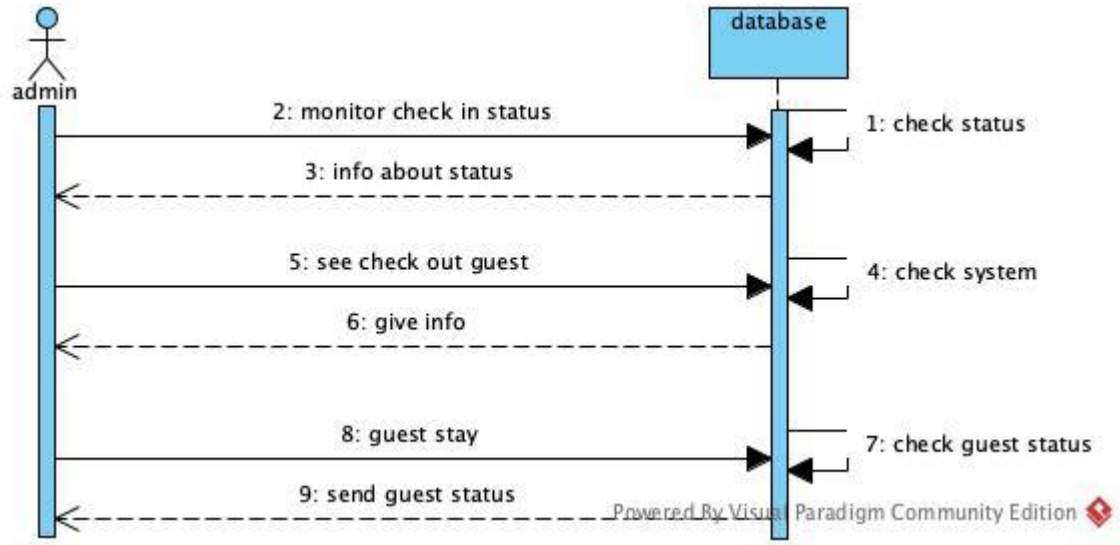
“check out and payment”



“room service”

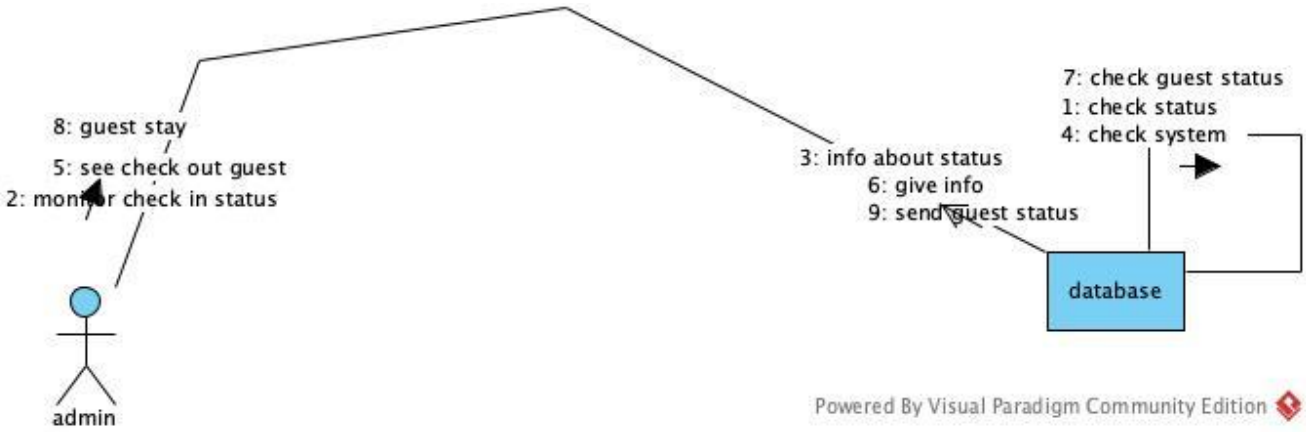


"admin"

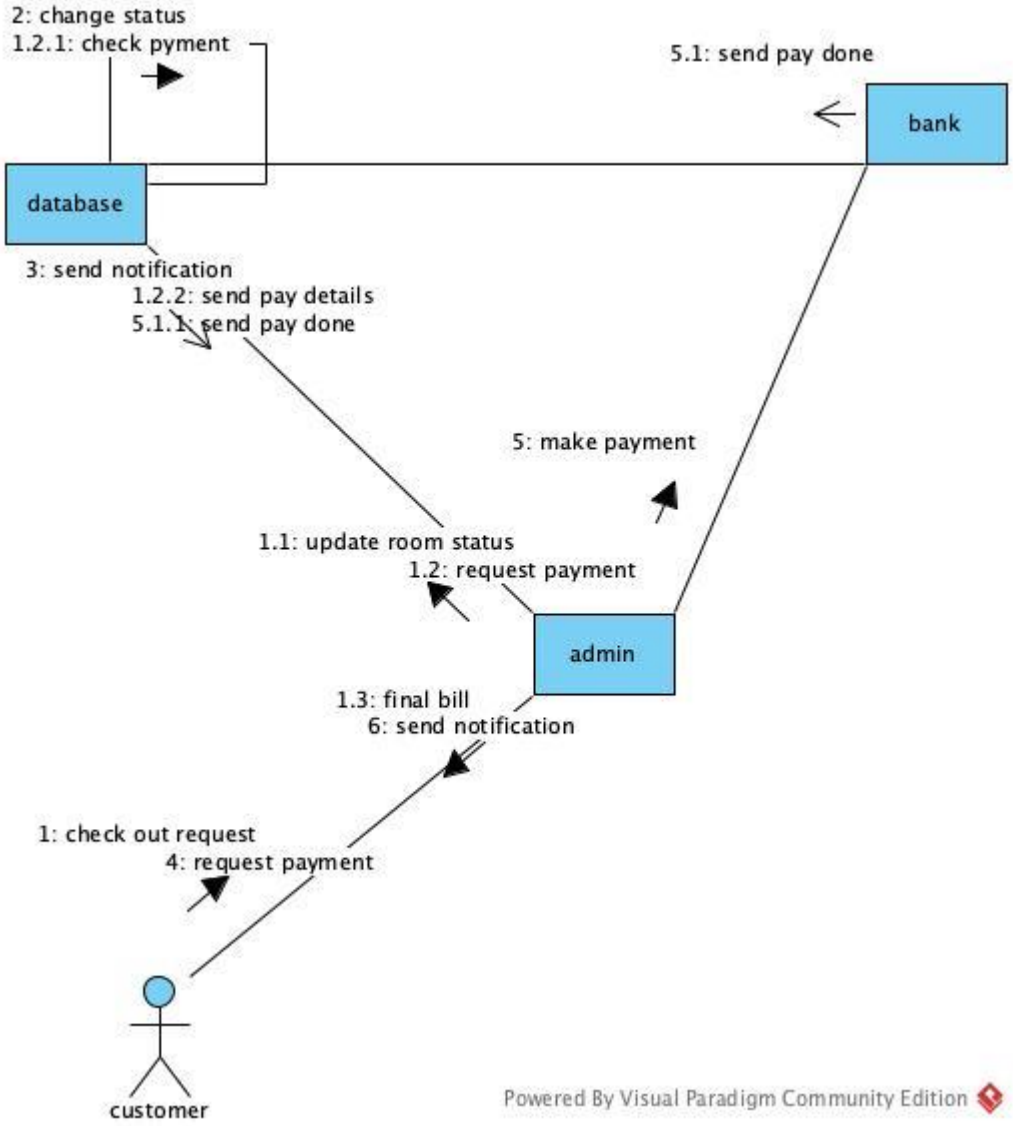


10. Communication diagrams

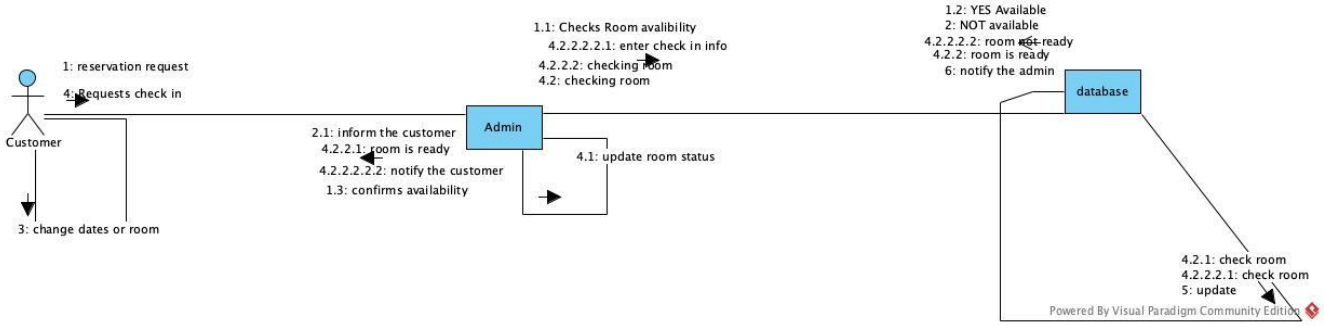
"admin"



“checkout and payment”



“check in and reservation”



“room service”