Remote Check in/ Checkout and Room Service App for Green Dorms

Group D

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1. System Planning

Business Description

Combining eco-friendly hotels work in reducing environmental impact and hostels simple dormitory hospitality, Green Dorms is an eco-friendly hostel for vacationers and new locals.

Green Dorms' mission statement:

"Affordable stay that's comfortable and helps the Earth"

The accommodations are for relaxing stays in the local community while meeting basic needs. Cost is cut down using automated energy control, cutting food waste, and seeking support from the local community.

- ## System request

System Request Form

First Name: John	**Last Name:** Smith
Telephone: 987-654-3210	**Email-ID:** John_smith@hotel.com

Describe the problem:
(Maximum of 4000 Character)

The existing system all the booking of rooms in a hotel is done manually, so it takes more time for customers and employees to book, search rooms, and collect payment in a hotel. Another major disadvantage of this system is preparing a list of all the rooms available in the hotel, which decreases efficiency. Currently, it is a manual process to verify all records. It is inconvenient for the customers and the hotel management in regards to limitation of the payment methods that are currently available, which also lead to difficulty in collecting payments.

The current system of the hotel is Paper based system, which has weakness such as :

- Lack of maintenance of data in day to day registering, updating ,deleting because of using manual registering
- Searching the history of the clients may take minutes and that reduces the performance of the system.
- Sometimes, the receptionist may forget to clarify whether the client has fully paid all the expenses or not.
- Increased duplication in record keeping.

Project sponsor:
Name: John Smith
Department: Senior Management
Phone Number: 987-654-3210
Email: John_smith@hotel.com

Business need:

Our business need is to reduce the amount of person to person contact during the booking a hotel process including: booking the hotel, checking in, ordering room service, and finally checking out by using our new app.

Business requirements and Functionality:

What we will need to make this happen is a mobile app to help you move through the hotel process called “Green Dorms”. This app will let you enter all of your information including your name, phone number, email, and your payment information. The app will also allow you to

book your rooms. It will allow you to choose which days you will be staying at the hotel and also which specific rooms are available during your specific time frame. The app will also include a way to order your room service in a more efficient and convenient way compared to the traditional way of calling the front desk. We will have the whole menu on the app and you will be able to order and fully pay for the food before it is delivered. The food will also come in a non-contact delivery right to your door. All of this information will be sent and delivered to our servers for confirmation.

Business goal:

Our goal is to provide the best service with our app so that all our customers will feel comfortable going to hotels. Our first step is to help the customer, but we also want the staff to feel comfortable as well, and our app helps with that as they will see an extremely lower amount of person to person contact throughout their shift. In the end, this will ensure a safer hotel experience for everyone involved.

Special issues:

There are some issues that may arise during our app creation and process. We need to make sure the issue of security does not come up as we are dealing with customers' personal

Hotel reservation system is an important part of the life of a modern hotel, because it ensures proper work of the hotel, making it efficient and provides the option to book a room online. It holds information for the workers and administration about the rooms and the hotel overall. This system removes most of the paperwork making it an obligatory asset to have for every modern hotel.

The main aim of the entire activity is to automate the process of day-to-day activities of a Hotel like Room activities, Admission of a New Customer, Assign a room according to customer’s demand, checkout of a customer and releasing the room, and finally compute the bill etc.

The expectation of this application is to produce the following results considered to the interests of owners, visitors, and common guests:

- To bring into focus the implication of the present situation to guide owners, customers and the information related to the owner/customer
- Identifying customer related information required things
- The application consists of a detailed customer information database that can be obtained relating to the entities mentioned on the following pages, this software enables the user to view any activities which are concerned to customer information like: check in/check out and payment by updating, deleting, inserting and so on.

Current system :

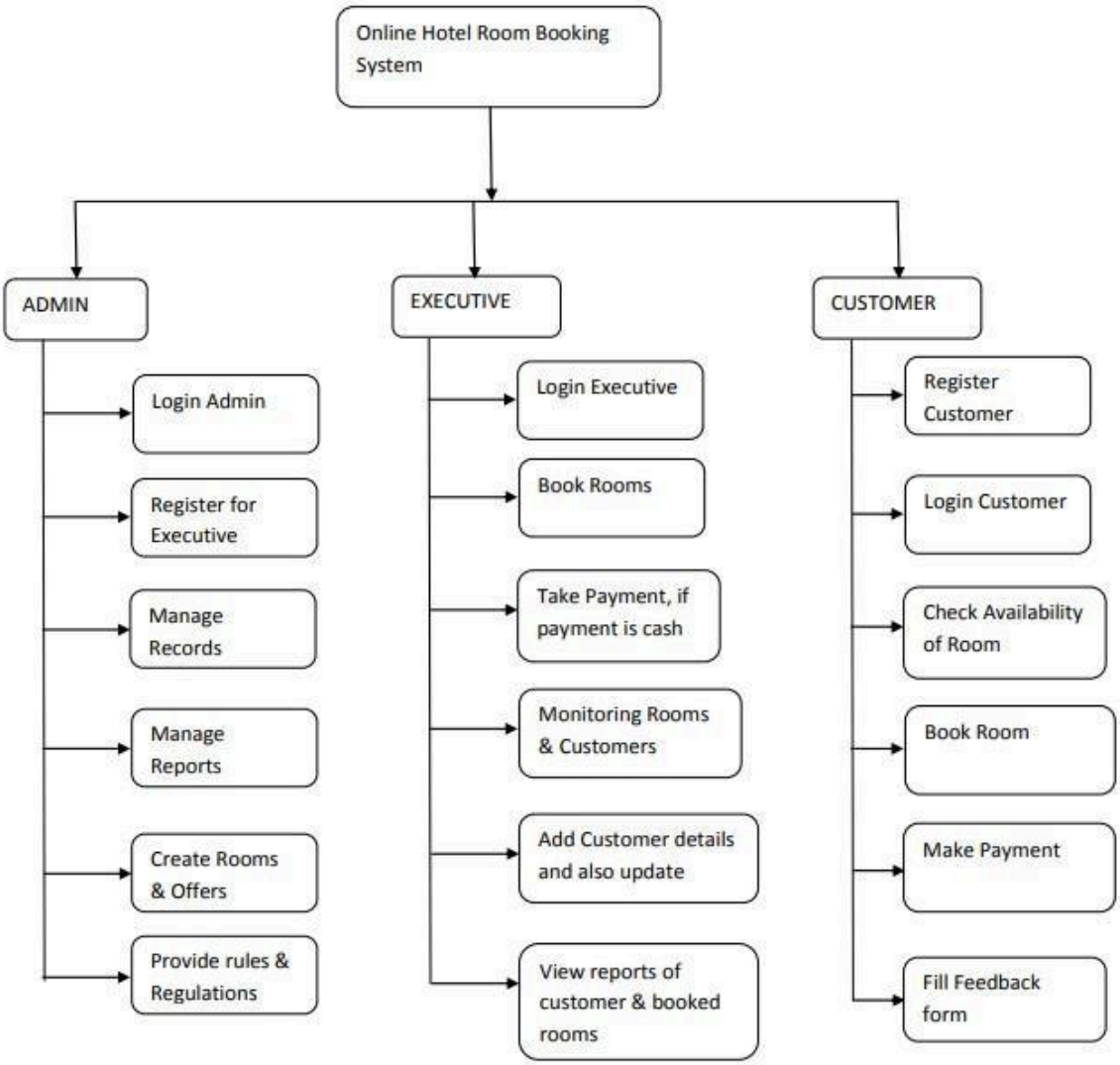
The current system of the hotel is a paper-based system, which was effective since the establishment of the hotel.

Weakness of the current system:

- Lack of maintenance of data in day to day registering, updating ,deleting because of using manual registering
- Searching the history of the clients may take minutes and that reduces the performance of the system.

- Sometimes, the receptionist may forget to clarify whether the client has fully paid all the expenses or not.
- Increased duplication in record keeping.

Proposed System:



There are several incentives to develop a new online Hotel Reservation System: The new online system will remove the frantic task of customer and employee for searching and booking a room in the hotel. The online Hotel Reservation System will allow remote access to the hotel online system and database, so the customer can search, book a room and give feedback too. And the system is user friendly for the stakeholders. The system will help the administrative staff to keep the daily and the history records details in the Database. Also, the system can generate proper reports for customers at the time of check-out.

The proposed system will also have the following advantages according to performance, security and control.

Advantages of the proposed system:

- ➢ All activities are done automatically
- ➢ Fast data insertion and retrieval
- ➢ Facilitating for reservation and booking
- ➢ No more data duplication and data conflicts
- ➢ Easy of viewing the latest customer information
- ➢ Data security and reliability
- ➢ No physical paperwork required

● Feasibility Study :

Feasibility study is to select the best system performance requirement and working ability in the organization. Feasibility just expresses whether the proposed system will be possible economically, operationally, technically and, time duration.

Technical Feasibility:

Technically, the system should be assessed if an organization's ability is possible to develop the proposed system. Employees' performance in the system should be considered. Technically understanding the possible target hardware, software and operating environment is used.

- The software developed for managing hotel reservation systems will be used in client server architecture as front end and Sql Server as back end so the project is technically feasible.

Economical Feasibility:

Economical feasibility studies whether the proposed system will be feasible financially. In addition, it studies the cost of the hardware required to function in the system, Operating system needed. In the existing system registers/books had to be maintained which was a costly affair. This can be reduced by keeping data in the digital format that is reliable and cheaper. Since the development cost for the system satisfies the organization therefore the software is economically feasible.

- Tangible Costs and Benefits:
  - The expense of staffing is decreased.
  - The costs of a strong security will increase in order to maintain the system.
  - The cost of producing hotel key cards is no longer needed as it will be replaced by a digital key.
- Intangible Costs and Benefits:
  - Customer Satisfaction (increased customer satisfaction)
  - better documentation and record keeping
  - improved accuracy of operations

Operational Feasibility:

Its purpose is to gain an understanding of the degree to which the proposed system will likely solve the organization problems and how much advantage the project will initiate/generate. The main purpose of this program is to develop a web based app which facilitates online reservation of hotel accommodation through the internet. All the users of this project are trained in this area. Therefore this project is operational feasible.

- The system platform will be easy and convenient for the users.

- It will benefit the hotel guests and employees as it will save time.

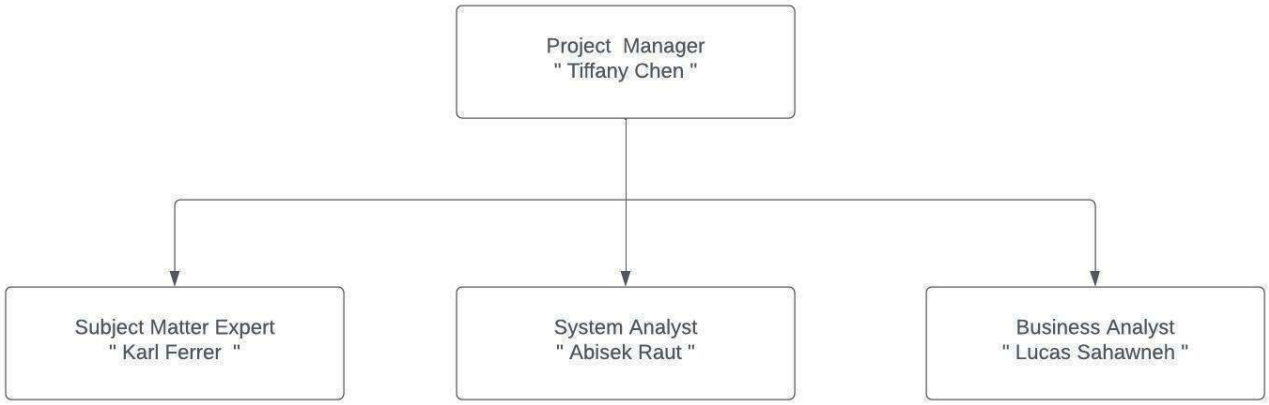
Schedule Feasibility:

This feasibility concern for project duration refers to assessing schedule feasibility. The purpose of assessing schedule feasibility is to gain an understanding of the likelihood that all potential periods and completion date schedule met and these dates will be sufficient for dealing with the needs of the organization.

- Project completion by December.

Project Management

Staff Planning



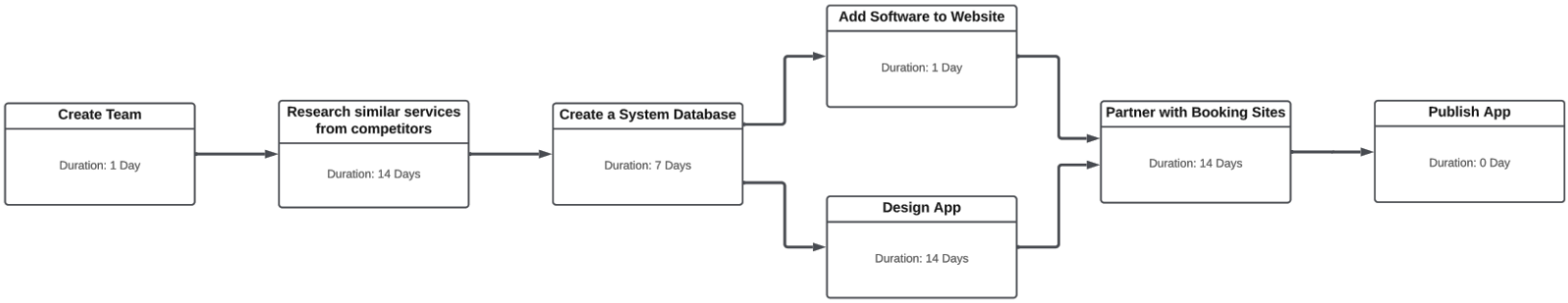
Role	Description	Assigned to
Project Manager	• Plan and Develop the Project Idea. • Create and Lead Your Dream Team. • Monitor Project Progress and Set Deadlines. • Solve Issues That Arise. • Manage the Money. • Evaluate Project Performance.	Tiffany Chen
Subject Matter Expert	• Support the definition of processes and policies. • Supply business rules and procedures. • Communicate the contexts in which the rules, processes and policies are applied. • Provide input into and/or create and execute user documentation and training material. • Resolve issues relevant to project/program deliverable(s) within their area of expertise	Karll Ferrer

System Analyst	• Examine current systems. • Produce specifications for new or modified systems. • Liaise with other staff such as programmers to produce new systems. • Implement new systems.	Abisek Raut
Business Analyst	• Evaluate processes for efficiency, cost, and results. • Compile recommendations on process adjustments, new potentially impactful technologies, or other areas for improvement. • Lead the research, design, and implementation of any technology or processes. • Manage projects, develop project plans, monitor performance, and ensure timely turnover of deliverables.	Lucas Sahawneh

Work Breakdown Structure

Work Breakdown Structure			
Task No.	**Description**	**Duration (Days)**	**Predecessor Tasks**
1	Create Team	1	
2	Research similar services from competitors	14	1
3	Create a system database	7	2
4	Add Software to website	1	3
5	Design App	14	3
6	Partner with booking sites	14	4
7	Publish App	0	3,4

Pert Chart



Risk assessment

1. This system may get hacked and data will be breached. Personal and credit card information will be exposed.
    - If a user's identity is stolen due to a hacked system, the hotel provider will be held responsible and could result in earning a bad reputation. In addition, the hotel provider may end up shutting down if the problem persists.
2. Possibility of fraud if not enough security measures in the system.
    - The use of a different person's identity in order to gain access in a hotel room without their consent could result in theft.
3. Bad internet service provided by the hotel may prevent the user from remotely checking-in/-out. Having a poor service could also be caused by the user.
    - Without having a proper connection provided by the hotel may not allow the user to gain access to the system. Therefore, the hotel provider must invest in having a stronger internet connection for their guests.
4. Glitches/bugs in the system may cause the system to crash and malfunction
    - Having glitches in systems are inevitable and could potentially stop users from using the app. Having a dedicated person/team to fix these problems is the best way to solve the issues.
5. Users who don't own a smartphone will not have access to the system.
6. Possibility of running out of resources/lack of budget
7. Damaged hardware may not allow the user to have access to the system.

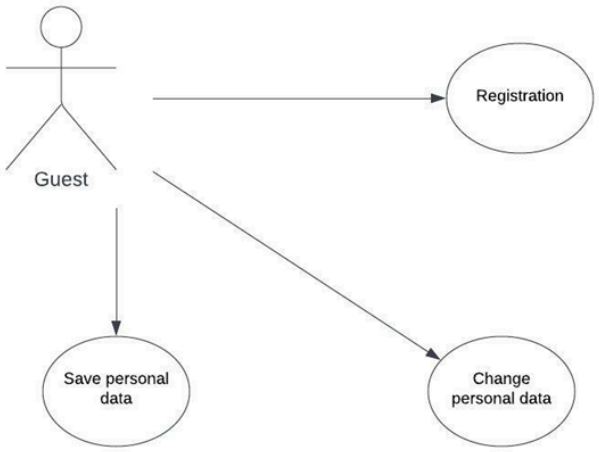
2. System Analysis

- ## Requirements Modeling
- ## Object Modeling

Object modeling (Object-Oriented Analysis)

We decided to model our process using a Use Case Model approach. This approach describes the different interactions between the users and the processes. In our use case descriptions, we explain each individual use case – who is involved, the step-by-step process and the outcome.

GUEST :



Guest Use Case Diagram

Name: Registration

Actors: Guest

Description: Guest wants to register on the system. For that the person has to go to the registration page, enter his/her personal data: name, second name, e-mail, home address, phone number. Then he/she needs to click on the "Register" button and make sure everything was successful.

Actor's action	**System answer**
1. Guest goes to the main page and chooses „Register".	2. Site shows the registration page.
3. Guest enters his data.	4. System checks that the e-mail is unique and password is strong enough.
5. Guest chooses „Register"	6. System saves the data and creates an account.

Alternative: In Step 4 - If the entered email already exists, then the system will show "Please, choose a unique email" and the system won't allow the user to register. If the entered password is weak, then the system will show "Please, choose a harder password" and the system won't allow the user to register.

Prerequisites: User has to have internet access**.**

Name: Change personal data

Actors: Guest

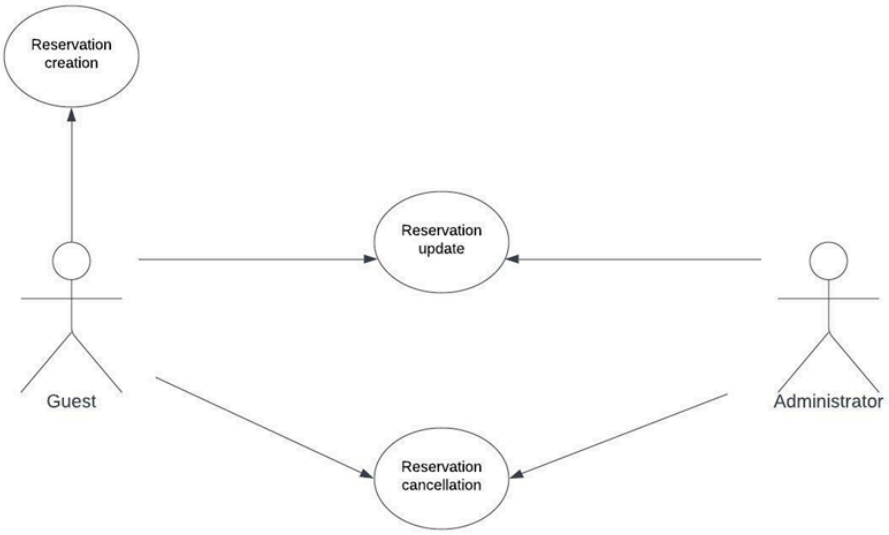
Description: When a guest wants to change his personal data he has to log in on the site, go to a special form and edit his data. After updating the data the user must save the changes.

Name: Saving personal data

Actors: Guest

Description: When a guest finishes changing his personal data he needs to save it.

ROOM BOOKING :



Room Booking Use Case Diagram

Name: Reservation creation

Actors: Guest

Intention: To create a reservation a guest must choose the check-in and check-out dates, room type and how many children and adults will be visiting.

Actor's action	System answer
1. Guest goes to the reservation page and chooses „Book a room".	2. Site shows the reservation page.
3. Guest enters room type, days, number of adults and children.	4. System checks that the data that the user has entered is valid. System shows the prices, days when room of a certain type is free.
5. Guest finishes entering the data and chooses „Finish reservation"	6. System saves the data and creates a reservation.

Alternatives: In Step 4 – If a room type is not available, then the system will show an error to the guest, informing him that the selected days couldn't be reserved.

Prerequisites: User has to have an account and be logged in.

Name: Reservation update

Actors: Guest, Administrator

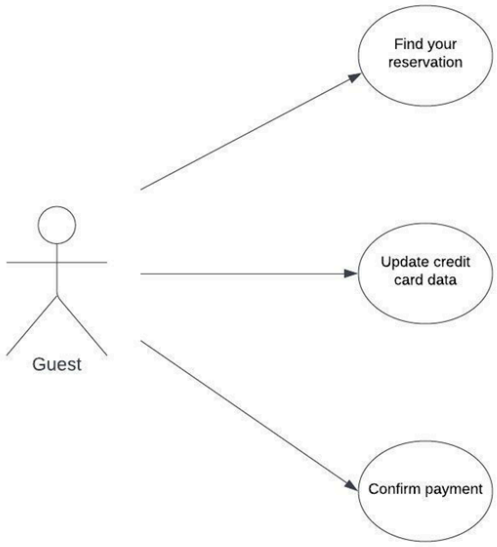
Description: To update the reservation and change room type, number of people or reservation duration a guest has to go to the reservation and then "Update". After changes are done the administrator must confirm the change.

Name: Reservation cancellation

Actors: Guest, Administrator

Description: Guests can cancel the reservation. For that to happen, an administrator must manually check and confirm the cancellation.

PAYING FOR REGISTRATION :



Paying For Registration Use Case Diagram

Name: Find your reservation

Actors: Guest

Description: Guest goes to his page and searches for the needed reservation.

Name: Update credit card data

Actors: Guest

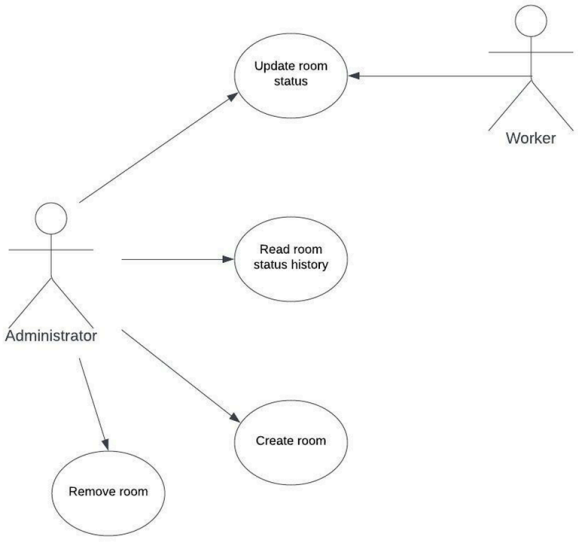
Description: Guest enters the payment method and payment information.

Name: Confirm payment

Actors: Guest

Description: When a guest wants to confirm his payment he finds the reservation and clicks the confirmation button.

CHECKING ROOM STATUS AND STATISTICS :



Checking Room Status And Statics Use Case Diagram

Name: Update room status

Actors: Worker, Administrator

Description: Room status gets updated based on the current information.

Name: Read room status history

Actors: Administrator

Description: Administrator chooses what kind of statistics he wants and sorts it. The system then shows him the requested information.

Name: Create room

Actors: Administrator

Description: Creates a room with the necessary data.

Name: Remove room

Actors: Administrator

Description: Removes the room completely from the database.

Context Diagram :