Comet Reservation

MIS 6308 Group 8

Chika Acholonu, Jai Anusha Duggirala, Sheetal Hiremath, Shubham Hota & Lillian Tran.

TABLE OF CONTENT

Executive Summary

Problem Statement:

● In the current system, to book a room at the university, the students or faculty must request the corresponding staff to check the availability of the room and get it assigned.
● It is time-taking, resulting in increased staff workload and the students/faculty not being assigned to their chosen rooms.
● UTD Organizations may want to hold meetings in a classroom but they are unsure if the room is taken

Proposed Solution:

● An app called Comet Reservation can provide faculty, staff, and students with a free, time-efficient, and on-demand way of booking UTD rooms for multiple reasons, like studying or even campus events.

Intended Audience:

● UTD faculty will have priority booking because they have to teach at certain times in certain classrooms.

● The hours that classes are not taught and professors are not using the classroom, students, organizations, or other faculty members can book the room.

Key Function Objectives of the Comet Reservation App:

● Ability to check the availability of rooms
● The students can fill out a form to reserve a room and get a confirmation email. This reservation process will show an update of available rooms before students/staff book a room
● Managing reservations by providing reports for all reservations, access to delete reservations, and update room availability.
● It will play a social role by enabling the interaction of fellow students to request the sharing of a study room.
● Comet Reservation app will also provide a navigation system to find booked rooms for the users.

Key Steps to Rollout the Project:

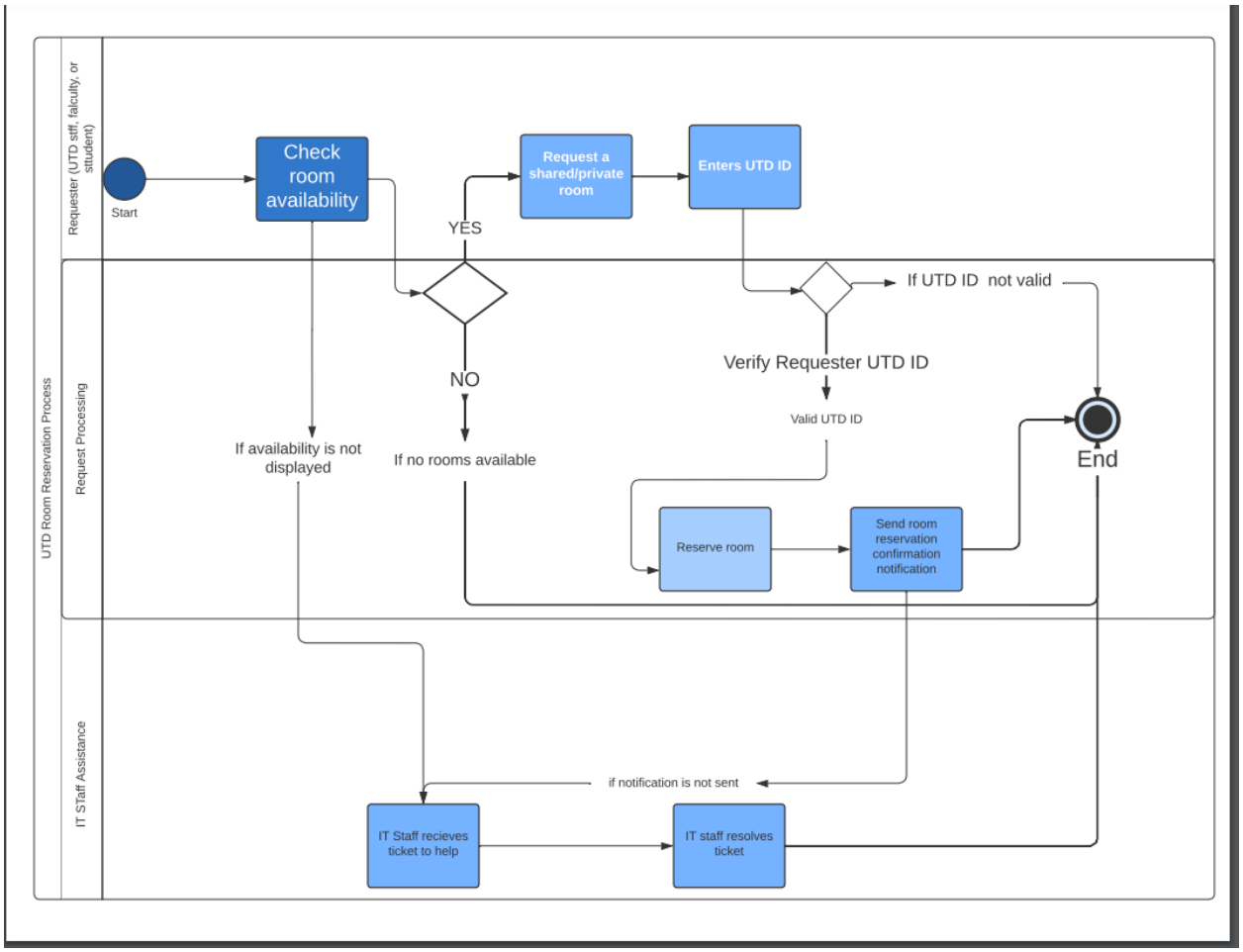
● Get approximately $60,000 in funding from UTD to support the app.

● Program and develop the Comet Reservation app.

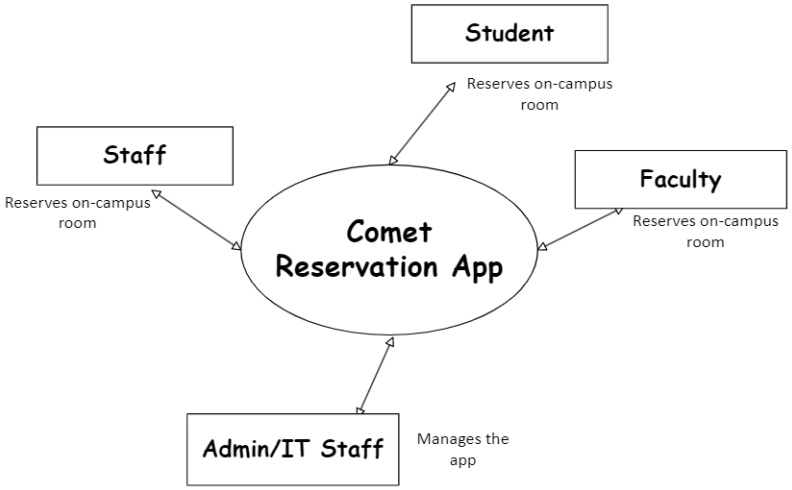
● Have a testing trial for the Comet Reservation app at JSOM for a month before rolling it out to other buildings on campus.

- Make improvements to the app after testing trial.
- Advertise the app through social media and emails.

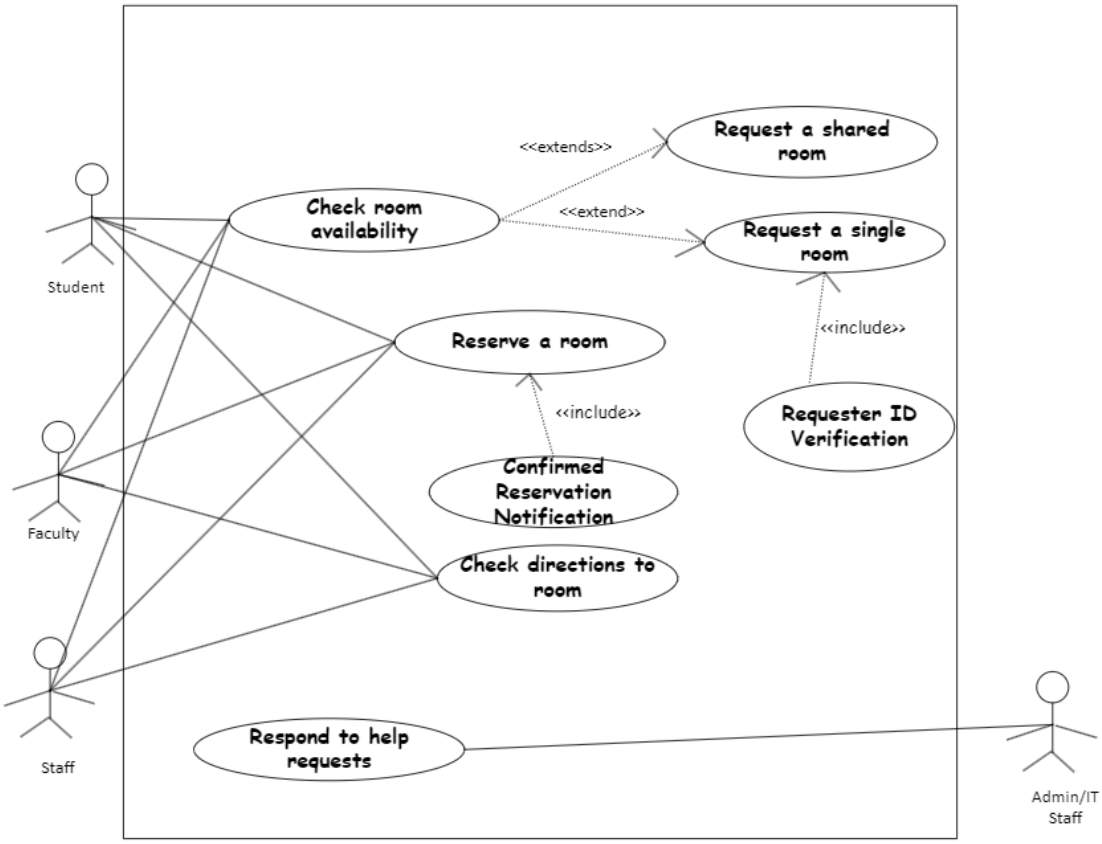
Business Process Model using BPMN



Context Diagram



Use Case Diagram



Use Case Diagram Descriptions:

Use Case Name

Check for Room Availability

Use Case Number

1

Primary Actor

Student

Stakeholders

Student: wants to reserve rooms for clubs, study, etc.

Staff: wants to reserve rooms for extracurricular activities or staff meetings

Faculty: wants to reserve rooms for classes, extracurricular activities, or faculty meetings

Brief Description

Primary actor is able to see the available rooms and times

Trigger

Primary actor opens the app

Relationships

Associations: Primary actors

Exclude: Request a single room, Request a shared room

Normal Flow of Events

Primary actor opens up app > Checks for available rooms

Use Case Name

Reserve a Room

Use Case Number:

2

Primary Actor:

Student

Stakeholders

Student: wants to reserve rooms for clubs, study, etc

Staff: wants to reserve rooms for extracurricular activities or staff meetings

Faculty: wants to reserve rooms for classes, extracurricular activities or faculty meetings

Brief Description:

Primary actor is able select a room and choose to reserve it

Trigger

Primary actor opens the app, checks for available rooms, and then chooses to reserve it

Relationships

Associations: Staff, Student & Faculty

Normal Flow of Events

Primary actor opens the app > Primary actor checks for available rooms > Primary actor can then request a room > Primary actor can then verify their identification > Once verified, the selected room can then be reserved > Primary actor will receive a confirmation notification for their reservation

Alternate Flow

Primary actor opens the app > Primary actor check for available rooms and no available room or time works for the primary actors

Use Case Name

Check directions to room

Use Case Number

3

Primary Actor

Student

Stakeholders

Student: wants to reserve rooms for clubs, study, etc

Staff: wants to reserve rooms for extracurricular activities or staff meetings

Faculty: wants to reserve rooms for classes, extracurricular activities or faculty meetings

Brief Description

This use case describes how primary actors get directions to the rooms that they have reserved

Trigger

Primary actors reserve a room and receives a reservation confirmation notification

Relationships

Association: Primary actor

Normal Flow of Events

Primary actor opens the app > Primary actor checks for available rooms > Primary actor can then request a room > Primary actors can then verify their identification > Once verified, the selected room can then be reserved > Primary actor will receive a confirmation notification for their reservation > This notification will include a navigational guide to the room that has been selected

Use Case Name

Respond to Help Requests

Use Case Number

4

Primary Actor

Admin/IT Staff

Brief Description

This use case describes how IT staff resolve technical issues that arise during reservation of rooms

Trigger

Primary actor who experiences technical issues in seeing available rooms or receiving confirmation notifications

Relationships

Association: Primary actor=-

Normal Flow of Events

Primary actor opens the app > Primary actor checks for available rooms > Primary actor can then request a room > Primary actor can then verify their identification > Once verified, the selected room can then be reserved > Primary actor] will receive a confirmation notification for their reservation > This notification will include a navigational guide to the room that has been selected > If the availability or notification doesn't show up for any of the primary actors, then a help ticket is sent to the IT Staff

Data Dictionary

Name	Datatype	Char Length	Examples	Description
StudentID	Text	10	WXS2000000	The unique number of students
S_Major	Text	50	Data Science	The major selected by the student
ProfessorID	Text	10	TXC0000001	The unique number of Professor
FacultyID	Text	10	JXD1111111	The unique number of other staff
UserID	Integer	5	10001	Unique ID given to the Registered User
U_FirstName	Char	25	Will	First name of the student/Professor/staff
U_LastName	Char	25	Smith	Last name of the student/ Professor/staff
U_Email	Text	50	Will.smith@gmail.com	Email address of the student/ Professor/staff
U_Phone	Integer	10	9876543210	Contact number of the student/ Professor/staff
CampusRole	Text	10	Student	User Role in the Campus (Student/Faculty/Staff)
RoomID	Text	10	Jsom1.101	Room number given
Building	Text	10	JSOM	Building in which the room is situated
Status	Text	10	Available	Status of the Room(available/Occupied)
ReservationID	Integer	10	2022000001	Reservation ID to track the Request
StartTime	Time	8	12:00:00	Room Requirement Start Time in (hh:mm:ss)
EndTime	Time	8	12:30:00	Room Requirement End Time in hh:mm:ss
Date	Date	10	04:12:2022	Room Requirement Date (mm:dd:yyyy)
Reason	Text	100	Room Required for the Kickoff event of TechStart	Reason for the room Requirement
Admin Staff ID	Text	10	TXC0000001	Requester ID who raised the IT service Request
Service Request	Text	10	Service01	The Unique ID given to the service request raised by the user.

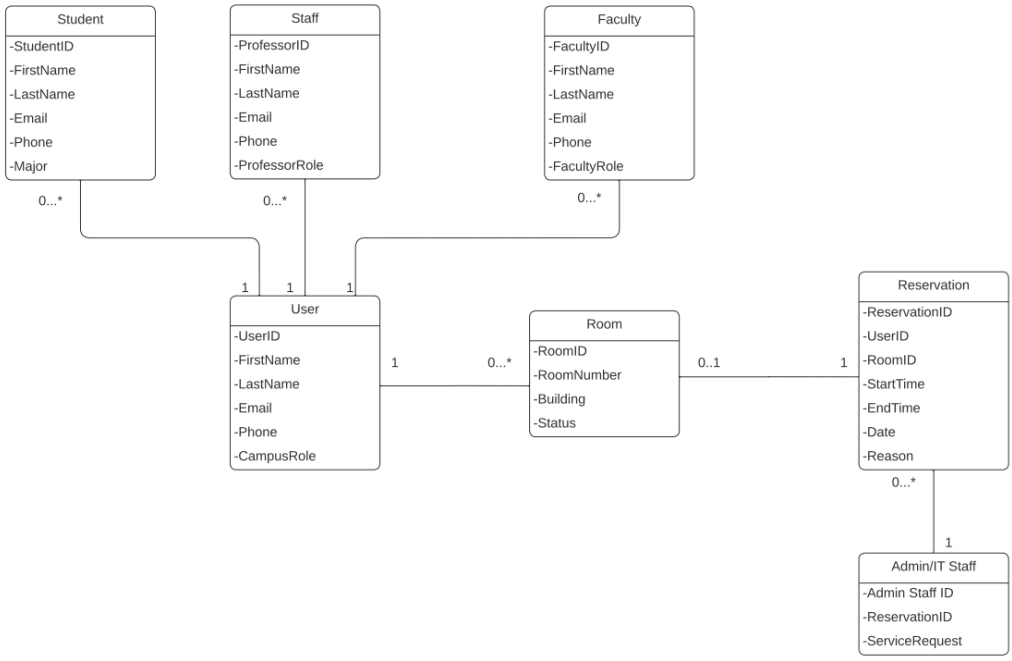
- RoomRegistraction= UserID + U_FirstName + U_LastName + U_Email + (U_Phone) + CampusRole[StudentID|FacultyID|StaffID] + RoomID + Building + Status[Available|Occupied] + ReservationID + StartTime + EndTime + Date + Reason

- ITSupport = AdminStaffID + ReservationID + ServiceRequest

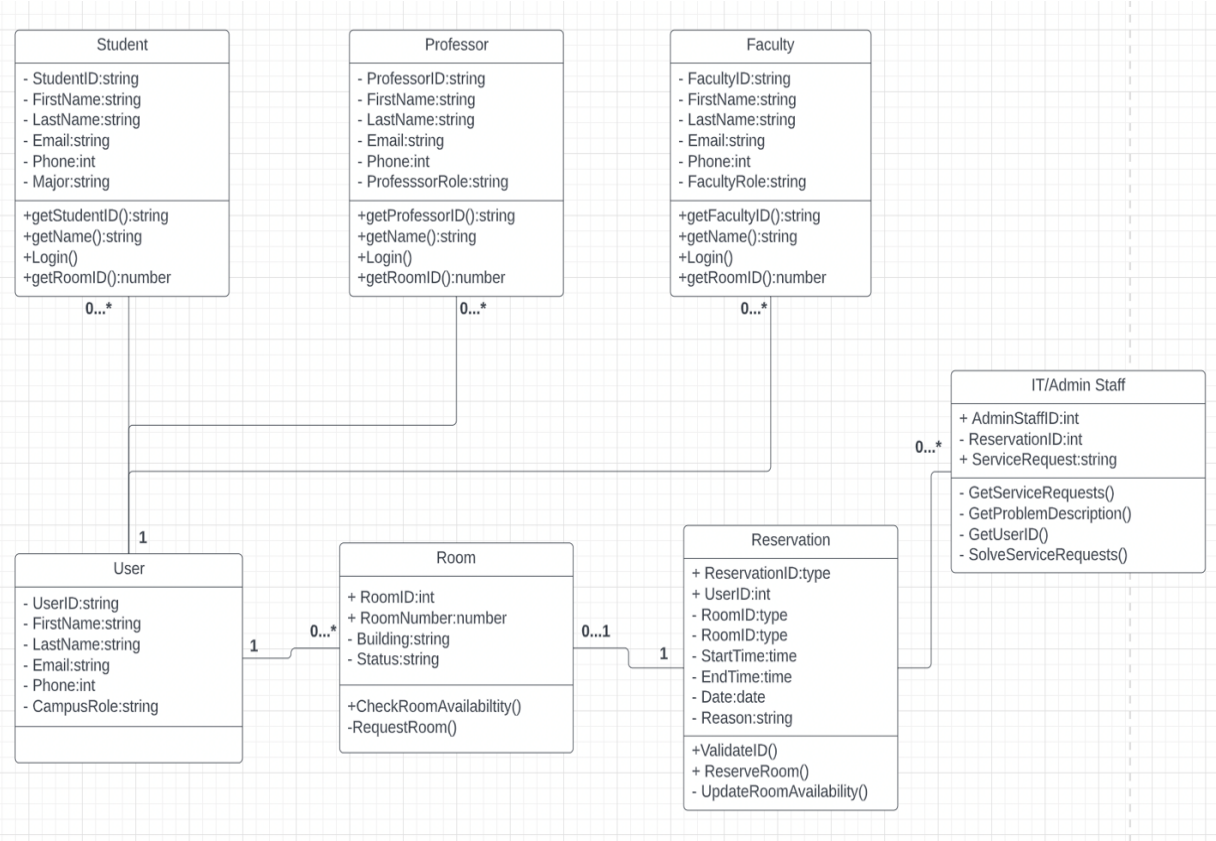
- RequestTrackDetails= UserID[StudentID|FacultyID|StaffID] + U_FirstName + U_LastName + U_Phone + Email + ReservationID + Status + Date + RoomID

Class Diagram (without methods)

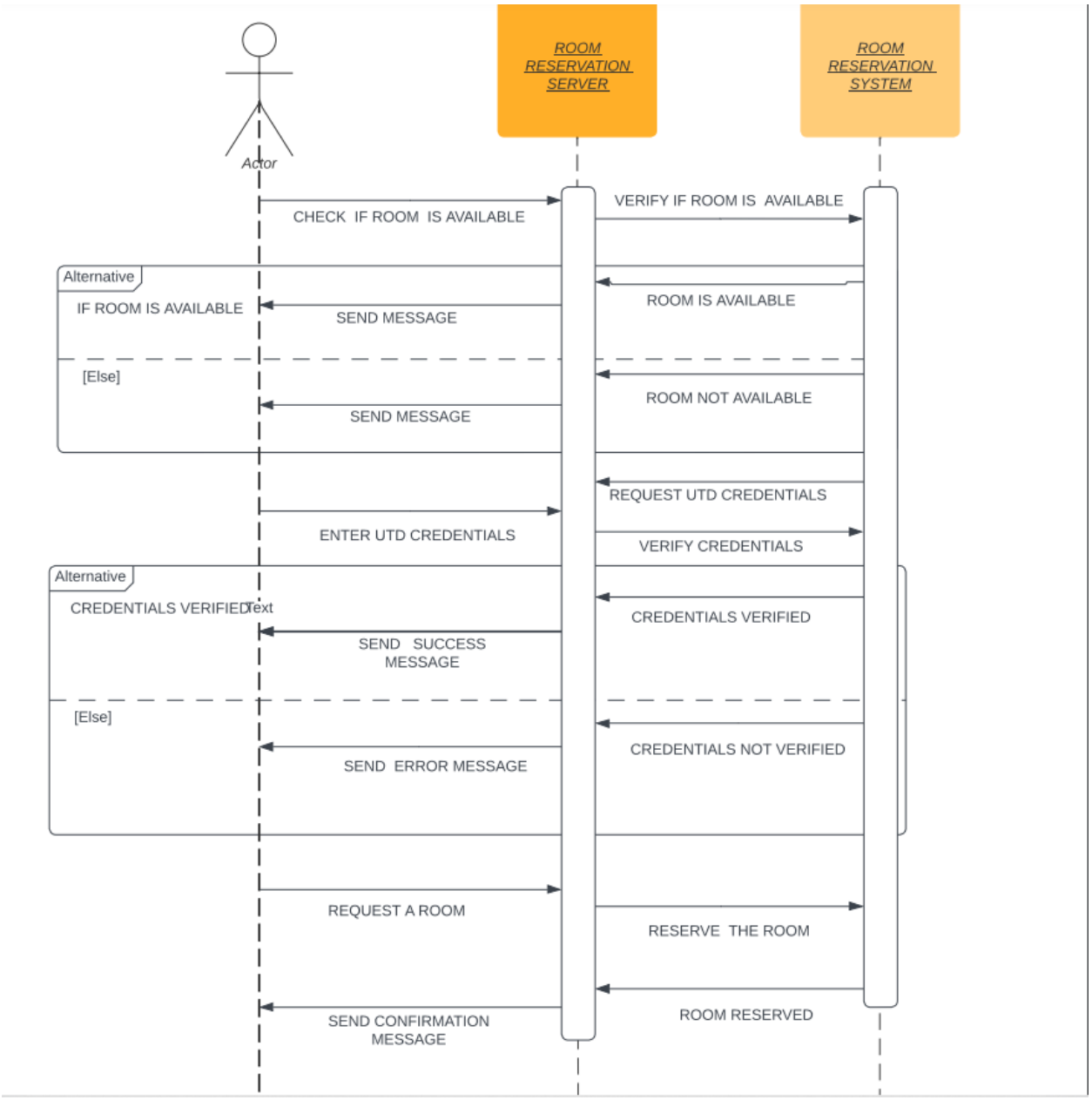
Data Model



Class Diagram With Methods



Sequence Diagram



Functional Specification Document

Project Name:

Comet Reservation Application

Names of organization, project sponsor, project manager:

1. Organization: UTD

2. Name of the project sponsor: UTD

3. Project Manager: Group 8

Reason for the Project:

Club heads/students, faculty or even staff must request the rooms for any events in person or correspondence. Instead of a complicated method, one can submit a request through this application, and receive immediate approval and reservation. The application simplifies the process.

Project Objective:

The objectives that promote the project's milestones and deliverables have been identified. To achieve success on the various organization and club projects, the following goals must be met within the time and budget constraints:
1. Starting the project from 05th of the month on collecting all the requirements needed.
2. Within the next 14 days, develop a solution methodology to propose to UTD's directors.
3. Within 21 days, analyze software/cloud requirements to satisfy budget allotment.
4. In the next 21 days, develop a proof-of-concept of the required software in the OIT lab with all licensed software and install it on a local server.
5. Within 30 days, develop the final solution, complete all required testing, and deploy the finished application on the UTD production server.

Scope:

- The entire initiative benefits staff, faculty & students, especially club leaders but it also benefits the authorities in charge of approving the room when a user sends a request by simply confirming the request on the application.
- The requests are also kept in order using a queue sytem, so they don't get lost in the daily emails, and calls or in-person requests can be avoided thanks to the covid restriction.

Project requirement:

This project must meet the following list of requirements to achieve the goals:
a. The application should allow the users to view available rooms.
b. The application should be able to allow users to request available rooms and verify identity
c. The application should be able to reserve the selected room and send a confirmation notification to the user
d. Before deploying the software into the production environment, it should be thoroughly tested in the development environment.
e. The software should have no impact on day-to-day operations.

Constraints:

All hardware and software need to be developed following the allocated budget and timeline
• Promotion of the Application needs time due to restricted time for project completion.
• Project scope is evaluated as a guaranteed set of deliverables, not an estimate.

Assumption:

This project has the complete support of the project sponsor, stakeholders, and all departments of the project.
• The goal of this project will be communicated with the company throughput before the deployment.
• The IT manager will provide further resources if required.
• The application will be user friendly and makes it hassle-free.
• the overall budget (in both time and money) is known to build the application.

Risk and Dependencies:

Deployment of the software on the production server should not influence the day-to-day UTD business.
• All software versions should be compatible with the current UTD platform,
• All software investments are needed to be completed on time and within the provided budget.

Milestone and Deliverables:

Project Milestone	Estimated Date
1. Project Start Date	02/04/2022
2. Complete Final Expected Design	02/18/2022
3. Acquire Hardware and Software	03/11/2022
4. Complete Solution Simulation and Testing	04/01/2022
5. Deploy Solution	04/29/2022
6. Project Complete	05/01/2022

Project Budget:

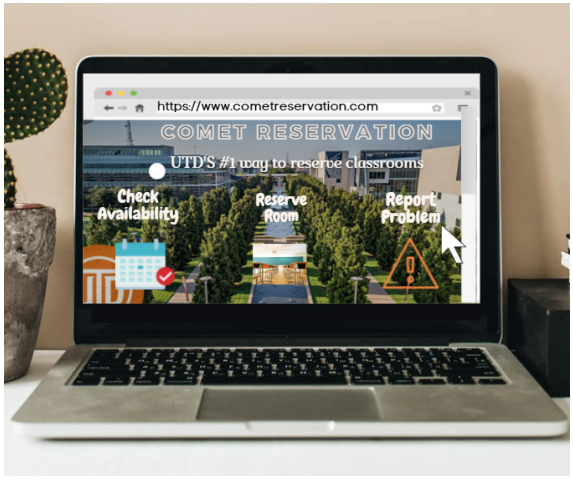
Project Components	Cost
1. Personal Resource	$120,000
2. Hardware	$50,000
3. Software and Licensing	$85,000
4. IT lab preparation	$25,000
Total	**$280,000**

Roles and Responsibilities:

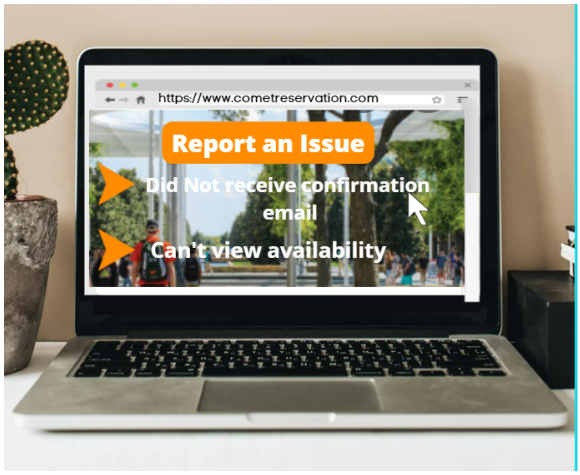
Stakeholder Title	Name	Roles & Responsibilities
Client	UTD	Provide us the requirements of the project.
Sponsor	Mark Thouin (Director of ITM)	Sponsor the budget needed for the project development.
Project Manager	Group 8	Project to be delivered on time within budget
Product Manager	Contracted out	Clear Requirements and timely completion of documentation
Q/A Manager	Contracted out	UI is responsive No quality issues
App Developer	Contracted out	Develop responsive UI and backend logic

Interface Design

Home Page available on the website interface



Report a Problem page on the website interface



Home page on tablet interface

Check Availability page on tablet interface

Reserve Room Page on IOS interface

Database Design

Project Management Deliverables

EXECUTION TIMELINE and PROJECT ACTIVITIES

Weekly Timeline	Tasks completed weekly
02/02/2022	Individual Project Proposal
02/09/2022	Formed and introduced to the group
02/16/2022	Finalizing the group Project Ideal
03/09/2022	Analyzed the executive summary of the course project
03/16/2022	Analyze business and function requirements
03/23/2022	Worked on project context and use case models
04/06/2022	Evaluated and designed the use case, activity and sequence diagram
04/20/2022	Completed Analysis Deliverable
04/27/2022	Completed Project Deliverable
05/04/2022	Final Documentation and Project Execution and

Minutes Of Meeting

Meeting 1:

Date:February 16, 2022.

Attendees: Chika Acholonu, Jai Anusha Duggirala, Sheetal Hiremath, Shubham Hota & Lillian Tran.

Meeting Purpose: Decide the Group Project Idea

Agenda:

- Brainstormed on different project concepts and analyzed their scope.
- Define the project scope.

Team Activity:

- Each member of the team proposed an idea and their scopes like food delivery app, parking spot application, room booking application etc.
- Analyzed and understood the concepts and constraints for all the projects.
- The team finalized the room booking application for the final project proposal.

Meeting Conclusion:

- Project on Room Booking application for the University.

Meeting 2:

Date:March 09, 2022.

Attendees: Chika Acholonu, Jai Anusha Duggirala, Sheetal Hiremath, Shubham Hota & Lillian Tran.

Meeting Purpose: Analyze the executive summary of the course project

Agenda:

- Discussed the advantages and features of the project
- Understanding the project scope to narrate the short summary.

Team Activity:

- Researched on the advantages of the room booking and scope of the project in the university and narrated a short summary by all team members.

Meeting Conclusion:

- Submitted the Project Summary Narrative

Meeting 3:

Date:March 16, 2022.

Attendees: Chika Acholonu, Jai Anusha Duggirala, Sheetal Hiremath, Shubham Hota & Lillian Tran.

Meeting Purpose: Analyze and document the business and function requirements

Agenda:

- Meet to understand the business and functional requirements of the project
- Assigned the tasks among the team members

Team Activity:

- Chika, Sheetal, and Lillian worked on Functional Requirements.
- Shubham and Anusha worked on the business requirements.
- Initial understanding of Classes and Objects of the project.

Meeting Conclusion:

- Documented the requirements of the project.

Meeting 4:

Date:March 23, 2022.

Attendees: Chika Acholonu, Jai Anusha Duggirala, Sheetal Hiremath, Shubham Hota & Lillian Tran.

Meeting Purpose: Worked on Project Context and Use-case models.

Agenda:

- Understand the necessary objects and classes and prioritize them based on the requirements.
- Discussed and designed the Use-Case Diagram.
- Analyzed the Project Context Model
- Assigned the tasks among the team members

Team Activity:

- All the team mentioned pitched their Ideas for designing the Use case and Context Diagram.
- Chika, Lillian designed the Use case based on Functional Requirements.
- Shubham, Sheetal worked on the Context model.
- Anusha researched on the further business requirements for Class and Sequence Diagrams.

Meeting Conclusion:

- Built the Use Case Model.
- Gathered the information needed for the further Analyses of the project.

Meeting 5:

Date:April 06, 2022.

Attendees: Chika Acholonu, Jai Anusha Duggirala, Sheetal Hiremath, Shubham Hota & Lillian Tran.

Meeting Purpose: Evaluated and Designed the, activity and sequence diagram

Agenda:

- Discussed about all the diagrams which need to be added in the report(Sequence, Activity, etc.)
- Finalized the BPMN and class diagram.
- Assigned the tasks among the team members

Team Activity:

- All the team mentioned pitched their Ideas for all the diagrams.
- Chika, Lillian, and Shubham worked on the Sequence, activity and class diagram.
- Sheetal, and Anusha worked on use case models and data models.

Meeting Conclusion:

- Completed all the necessary diagrams like use case, sequence, activity and class diagrams.

Meeting 6:

Date:April 20, 2022.

Attendees: Chika Acholonu, Jai Anusha Duggirala, Sheetal Hiremath, Shubham Hota & Lillian Tran.

Meeting Purpose: Completed Analysis Deliverable

Agenda:

- Check all the Analysis Deliverables are included in the report.
- Finished the class diagram with the methods and other diagrams based on the advanced requirements and data dictionary.
- Finalized the user interface of the application.

Team Activity:

- All the members of the team worked together on the Functional Specification Document.
- Documentation of the all data was completed

Meeting Conclusion:

- Documentation of Functional Specification Requirements
- Data documentation using data structure notation.

Meeting 7:

Date:April 27, 2022.

Attendees: Chika Acholonu, Jai Anusha Duggirala, Sheetal Hiremath, Shubham Hota & Lillian Tran.

Meeting Purpose: Completed Project Deliverable

Agenda:

- Complete all the deliverables
- All the Diagrams have to be finalized.
- Reports need to be completed.

Team Activity:

- Whole team together finalized and completed all the diagrams needed for the project.
- Documented the project report by merging all the details.
- Worked on the project powerpoint presentation.
- Complete the User Interface Design.

Meeting Conclusion:

- Completed the of Project Requirements
- Finalized the reports and project.

Meeting 8:

Date:May 04, 2022.

Attendees: Chika Acholonu, Jai Anusha Duggirala, Sheetal Hiremath, Shubham Hota & Lillian Tran.

Meeting Purpose: Completed Project Deliverable

Agenda:

- Complete the project and the report.
- Finish the Powerpoint presentation.
- Final project review.

Team Activity:

- The project and the reports are submitted
- Presentation of the project.

Meeting Conclusion:

- Completion of the project.

Class Presentation on Youtube

https://www.youtube.com/watch?time_continue=1&v=TyCpMP6HT2w&feature=emb_logo