



American International University-Bangladesh (AIUB)

Department of Computer Science and Engineering

Faculty of Science & Technology (FST)

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CSC 00191- Object Oriented Analysis and Design (OOAD)

Section: B

Project Title: Room-rent Management System for Students

Submitted by:

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1. Project Title: Room-rent Management System for Students.

2. Project Overview:

A brief description and background of the system.

Room-rent Management System for Students

In a Room-rent Management System for Students, A student can rent a room from Owners. Owners must register by submitting NID and ownership documents. This validation is confirmed by a verification agent.

The booking agent assists the students in renting rooms from the registered owners. The room can be of 2 types, single bedroom, or double bedroom. The rooms can be booked according to the days a student wants to stay. If a student stays for two weeks in a single room, then he/she will be eligible to get 15% discount on payment.

For renting a room the student must submit a copy of his/her NID or Student-Id of their institutes to the Assistant. The Assistant confirms the renting. A Student can also book a room for future renting within a month, Booking Agent can help with future booking, but he must check if the room has prior booking in that date.

A Student pays for the rooms at the time they check out. They can pay by cash, bkash or card. The Assistant confirms the Payment.

Booking Agent and Assistant have to register to the verification agent before they get access to the system, but to login they have to go through username/password verification. This validation is done by the Owner.

3. Justification:

Why are you planning to do design for that particular system?

Talking about the education system of our Country, students go after their dreams and look for higher education opportunities according to their previous results and their interested field. Therefore, they need to sit for several entrance examinations in different places for chosen subject, sometimes so far away in another divisions, where they have no one of their own and no place to stay the night at.

Again, for the students who are continuing University studies online from home, during the Covid pandemic, staying at far from the Institute, they need to prepare themselves when universities resume offline, hence they need to look for a permanent residence to attend regular classes by then.

Therefore, Students face a lot of trouble managing a safe and affordable place nearby. Sometimes it takes few days in looking for the most suitable place. Spending the nights before settlement is more of a stress. Thus, our Room Rent Management System is a great solution to this scenario. Students can rent a safe place within their affordability, and they can stay there as many days they needed.

Students with valid identity may hire a bed or a room from an authorized house Owner from our System so that students don't face any hassles regarding the renting.

4. Overall Use Case of the project:

Overall use case diagram (identifying actors + their use case)

Room-rent Management System for Students

Owner →

- Submits NID
- Submits ownership documents
- Validates System

Verification Agent →

- Verifies NID and Ownership documents
- Give access to System login

Student →

- Rent rooms → single bed or double bedroom.
- Enjoy 15% discount if stayed for 2 weeks in single room.
- Submits NID or Student-id of their institutes to the Assistant
- Book Room for future renting.
- Do Payments when they check out
 - cash,
 - bkash or
 - card

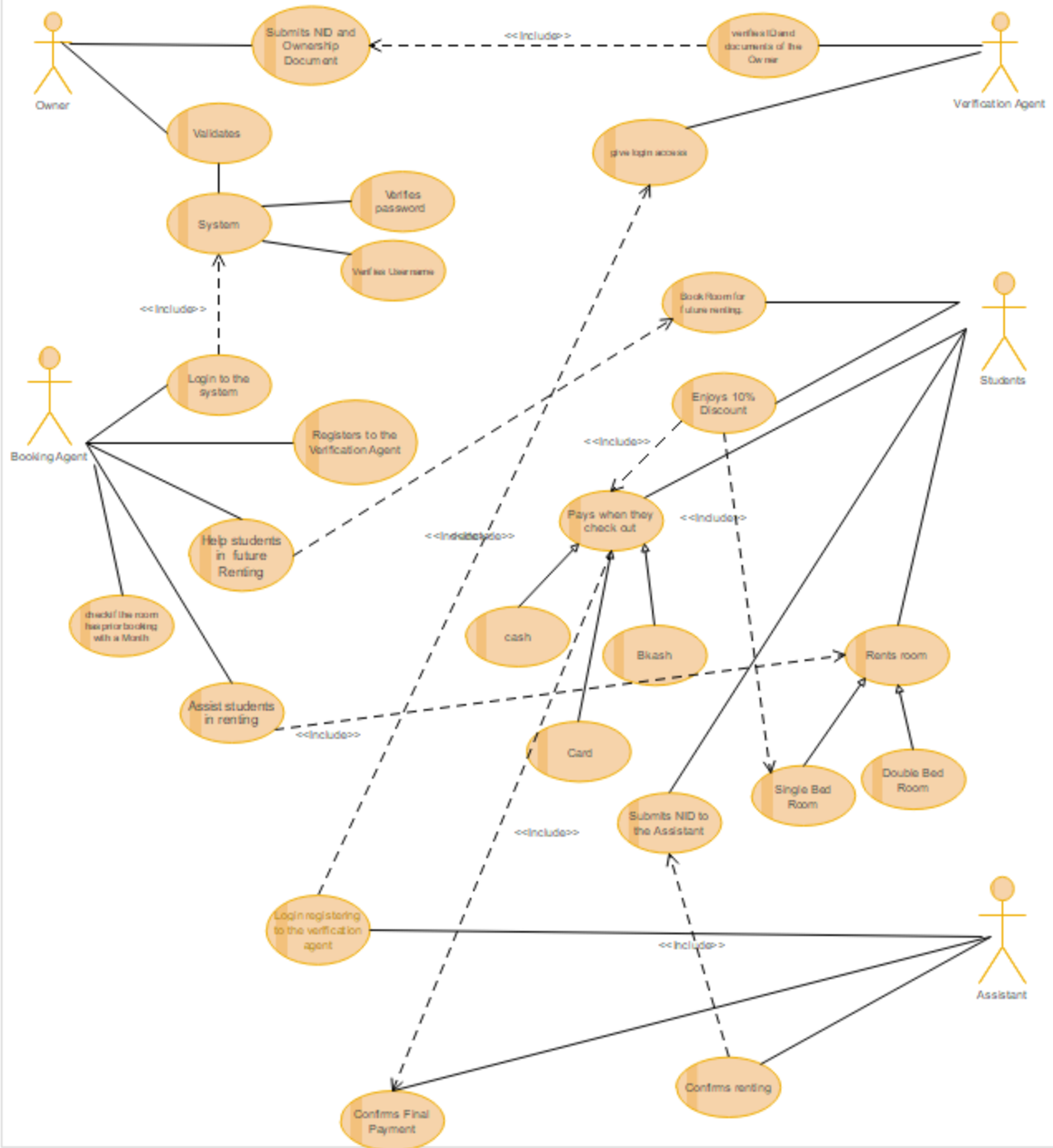
Assistant →

- Login by registering to the verification agent.
- Confirms Renting
- Confirms final Payment

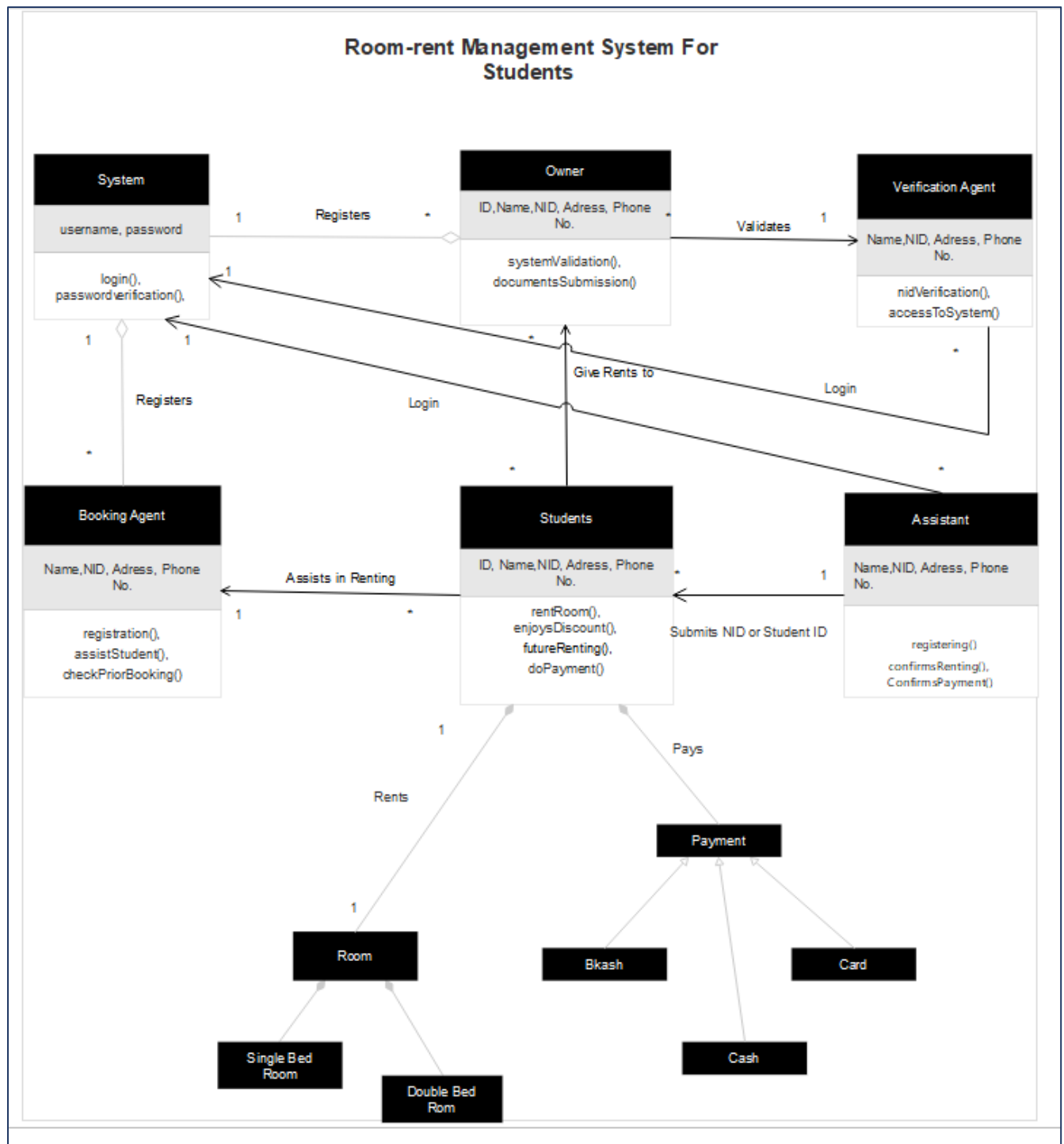
Booking Agent →

- Login by registering to the verification agent.
- Assists the students in Renting
- Help the students in booking for future rent.
- check if the room has prior booking within a month

Room-rent Management System For Students

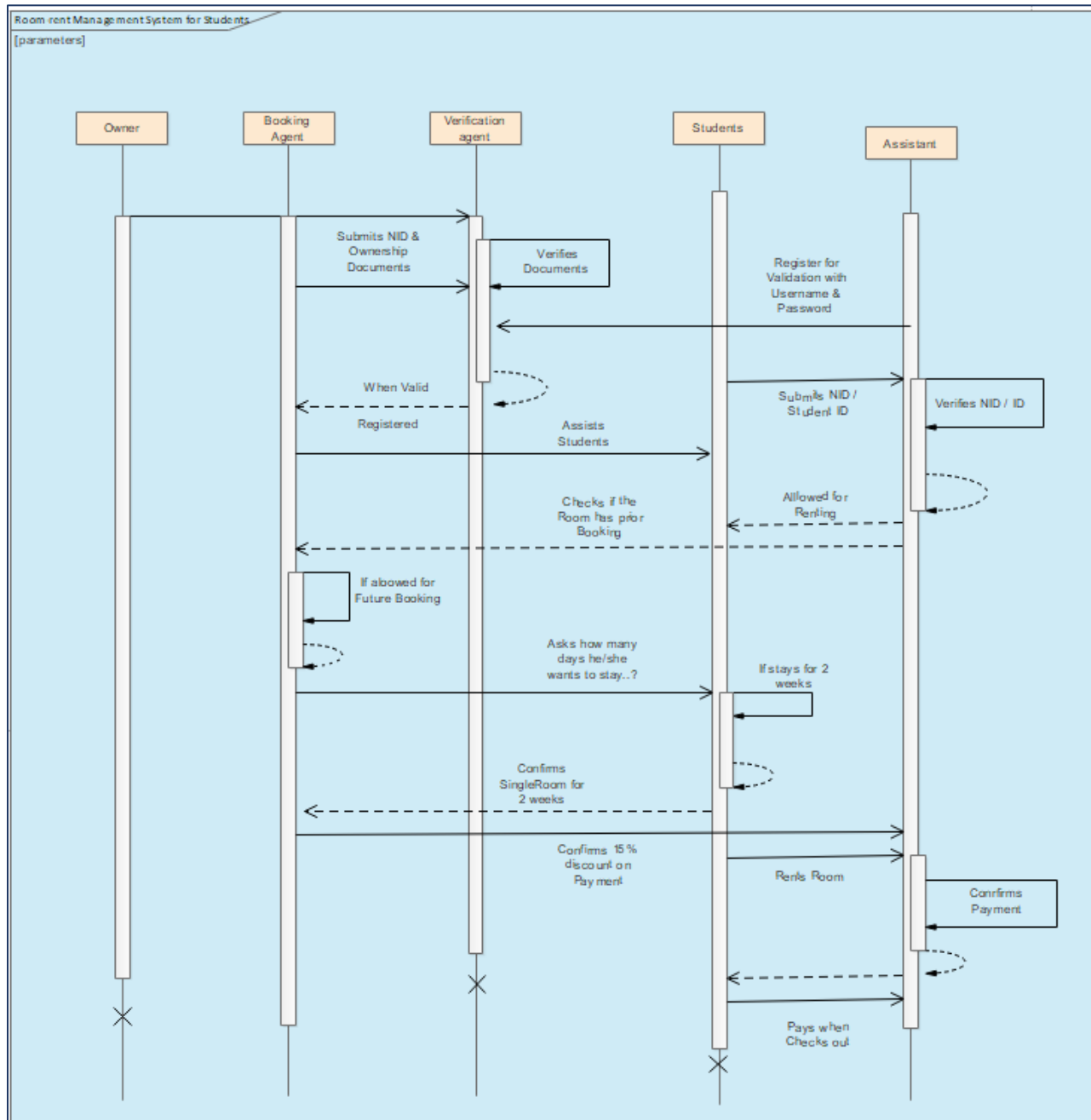


5. Class diagram of the project:



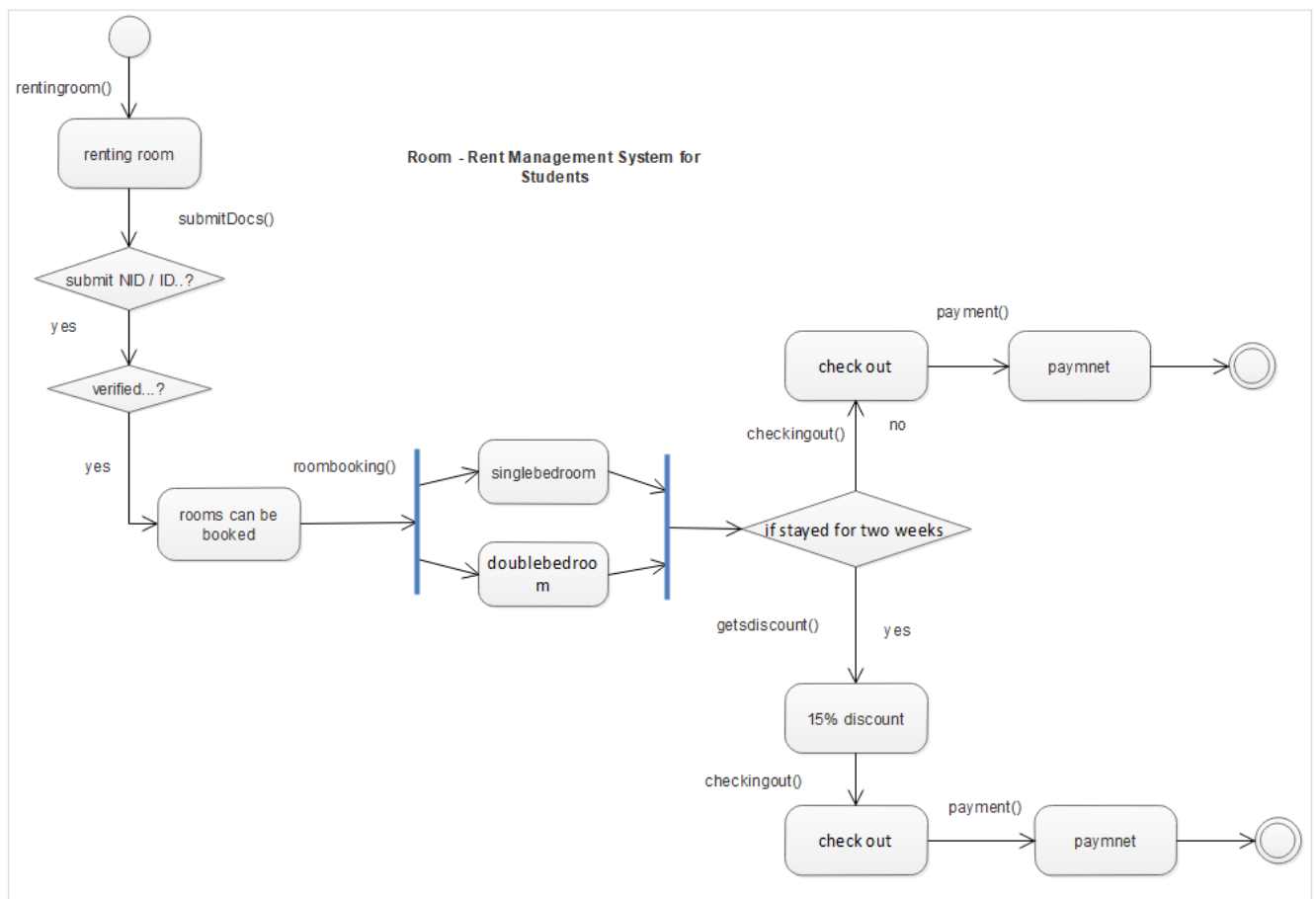
6. Sequence diagram of the project:

A sequence diagram represents the sequence of messages passed between objects. It is a type of interaction diagram because it describes how and in what order a group of objects works together. These diagrams are used by software developers and business professionals to understand requirements for a new system or to document an existing process. Sequence diagrams are sometimes known as event diagrams.



8. Statechart diagram of the project:

- ➔ Main objective and purpose of this diagram is the representation of a single object and to know the current state or condition. To know the present condition of an object and the behavior how it changes its state.
- ➔ A statechart diagram is composed by three components:
 - state
 - transitions
 - events



9. Limitations of the System

As this system is fully online based, there are many students and owners we will not be able to get connected with the system. As both parties need to have proper internet connection and access in order to register in the system, and they must submit many documents for the safety of both parties. The documents must be legit to be verified so that a room can be booked or rented and both owner and student can stay without any safe hesitation. In this system the verification process is long and time consuming. These are the limitations of this management system.

Talking about the difficulties faced while building up the management system includes the online based education restrictions. Different software could have been used for drawing the diagrams and handling them with the necessary saved files were of a huge challenge.

10. Conclusion

To conclude with the summation of our whole project, we have successfully designed 5 diagrams using UML software. Each of the individual diagrams indicates and demonstrate the necessary steps for proceeding though the system. To be more specific, we had started with 'Use Case Diagram' which consisted of the Actors and their associated interactions with the system. Then the 'Class Diagram' includes the attributes and operations of the classes. Later, followed by the 'Sequence and Activity Diagram'. Finally ending with 'StateChart Diagram'.

Henceforth, the overall system of a Room Rent Management could be easily learnt with the help of the diagrams.

THANK YOU