# COMP40725
# Final Project Specification

Saransh Agarwal

14203485

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## 1   PROJECT DESCRIPTION

Rosemont Student Accommodation offers furnished student flats that consists of single- rooms for groups of students sharing common area and kitchen. Each flat includes a flat number, address and number of single- rooms available. Each single- room in a flat has a room number, fixed monthly charges. The rooms are rented on lease and each lease has a lease number, duration, start and end dates, and student number on it. The student data recorded by the accommodation office contains student number, name (first and last), date of birth, sex, degree studying, nationality and any special needs required. Also, every student is issued an invoice that has a unique invoice number, lease number, payment and student details. Moreover, in case of emergency, details of student's parents/ guardians are also stored that includes their name, relationship, address and a contact number. The flats are maintained by well trained staff that help student settle and provide assistance in cases. Also, an inspection is done on a routine basis to ensure that the flats are well maintained. The inspections are carried out by a staff member and details of which are recorded. Various courses are also organized by the Accommodation office for the well-being of the students which are delivered by external coaches.

## 2   BUSINESS RULES AND ASSUMPTIONS

- The number of single- rooms in a rented flat accommodation cannot exceed six;
- A member of staff cannot inspect more than 10 flats at the same time;
- The rent due on a room lease is calculated monthly;
- The duration of the lease can be semester wise, or for the summer term;
- Each student is associated with only one course;
- Every student is supposed to have a Guardian or a next- of- kin relationship;

## 3   ENTITY AND RELATIONSHIPS

### 3.1   FINAL ENTITIES (WITH ATTRIBUTES)-
- Student (<u>StudentNo</u>, fName, lName, addr, DOB, sex, degree, nationality, spl_req)
- Flat (<u>flatNo</u>, fAddr, no_of_rooms)
- Room (<u>roomNo</u>, rent, flatNo)
- Course (<u>courseNo</u>, c_title, coach)
- Staff (<u>staffID</u>, fName, lName, addr, position)
- Lease (<u>leaseNo</u>, length, StudentNo, roomNo, checkin_date, checkout_date)
- Invoice (<u>invNo</u>, payment, payment_date, payment_type, leaseNo)
- Inspection (<u>flatNo</u>, date_of_insp, remarks, StaffID)

- Guardian (StudentNo, name, g_addr, tel_no)

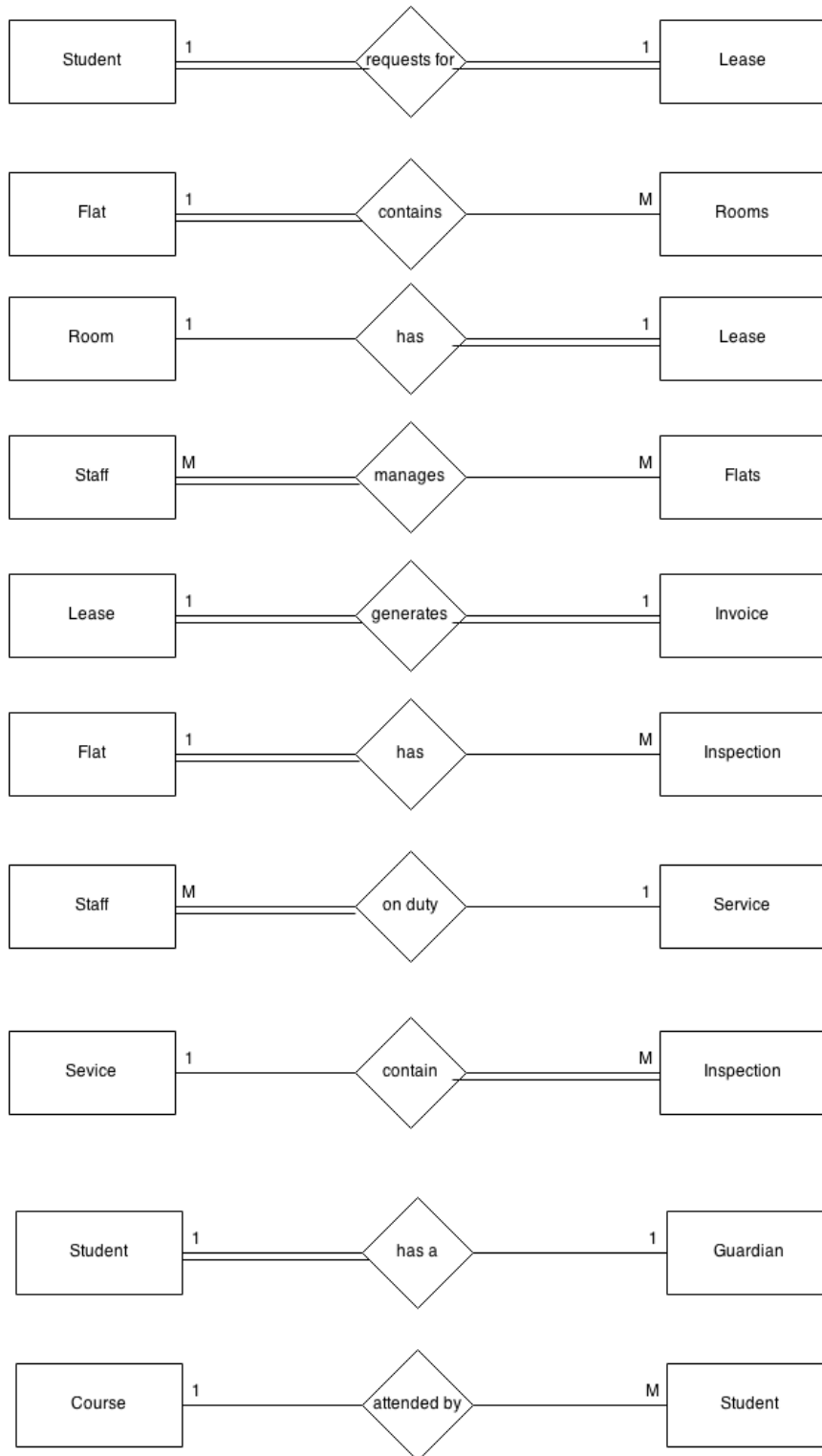## 3.2 FINAL RELATIONSHIPS (WITH CARDINALITY)-

- Every student requests for a lease agreement
  Student- Lease (1:1) requests for;
- Each flat contains number of rooms in it
  Flat- Rooms (1:m) contains;
- Every room has a lease agreement requested by a student
  Room- Lease (1:1) has a;
- Staff manages flats in the accommodation
  Staff- Flats (m:m) manages;
- Lease results in generation of invoice in the name of student
  Lease- Invoice (1:m) generates;
- Each flat has a periodic inspection
  Flat- Inspection (1:m) has;
- Staff on duty in a service
  Staff- Service (m:1) on duty;
- Service contains Inspection
  Service- Inspection (1:m) contains;
- Student records have a guardian in case of emergency
  Student- Guardian (1:1) has a;
- A student can attend course at the accommodation
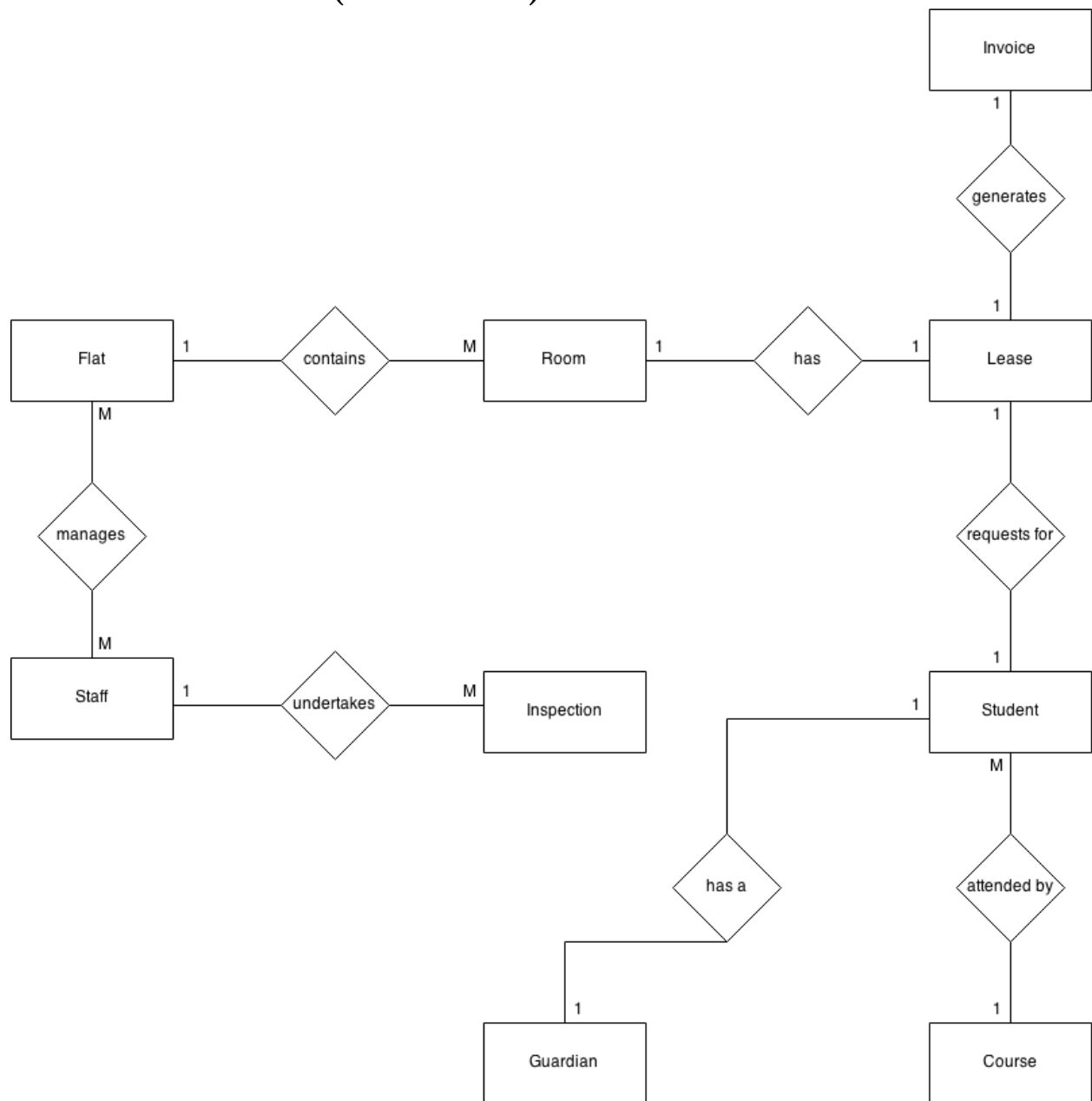  Course- Student (1:m) attended by;

## 3.3 OPTIONALITY-

- A student is mandatory to a lease, so is the lease. Both, student and lease are mandatory;
- A flat must contain number of rooms, so flat is mandatory;
- A lease should be associated to a room held by a student, so lease is mandatory;
- A member of staff manages flats, so staff is mandatory;
- A lease results in generation of an invoice, and invoice is mandatory. So, both are mandatory;
- Inspection cannot be done without flat, so Flat is mandatory;
- Staff on duty is involved in a service, so Staff is mandatory.
- Each service contains Inspection which is a vital entity. Therefore, Inspection is mandatory.
- On the emergency records, a Student has a Guardian. So, Student is mandatory.
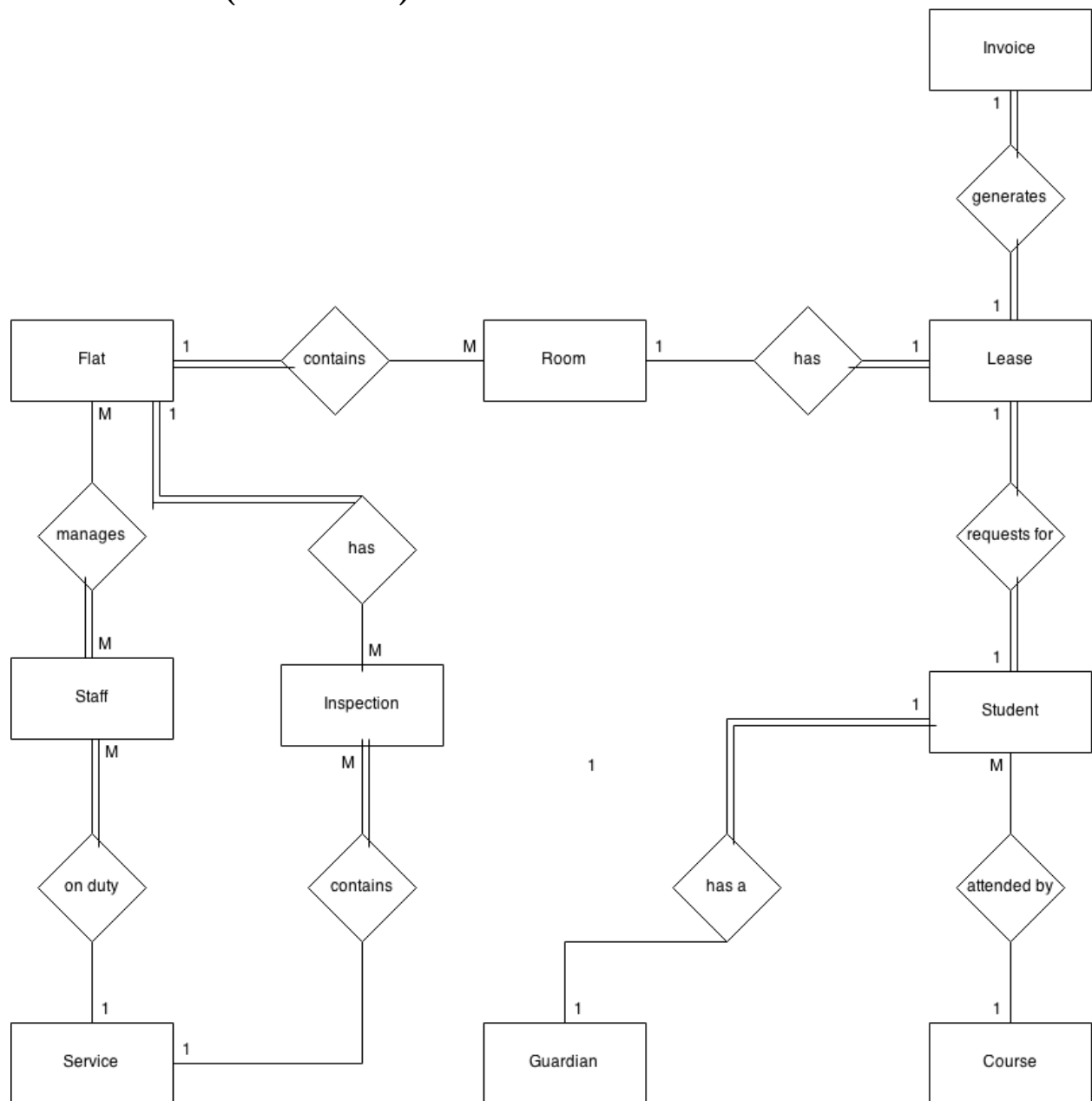- A student can attend a course, both are optional.

# 4 ER DIAGRAM

## 4.1 RELATIONSHIPS

| Student | 1 | requests for | 1 | Lease |
|---|---|---|---|---|

| Flat | 1 | contains | M | Rooms |
|---|---|---|---|---|

| Room | 1 | has | 1 | Lease |
|---|---|---|---|---|

| Staff | M | manages | M | Flats |
|---|---|---|---|---|

| Lease | 1 | generates | 1 | Invoice |
|---|---|---|---|---|

| Flat | 1 | has | M | Inspection |
|---|---|---|---|---|

| Staff | M | on duty | 1 | Service |
|---|---|---|---|---|

| Sevice | 1 | contain | M | Inspection |
|---|---|---|---|---|

| Student | 1 | has a | 1 | Guardian |
|---|---|---|---|---|

| Course | 1 | attended by | M | Student |
|---|---|---|---|---|

## 4.2 INITIAL ER MODEL (BEFORE SPLIT)

## 4.3 ER MODEL (AFTER SPLIT)



-END-