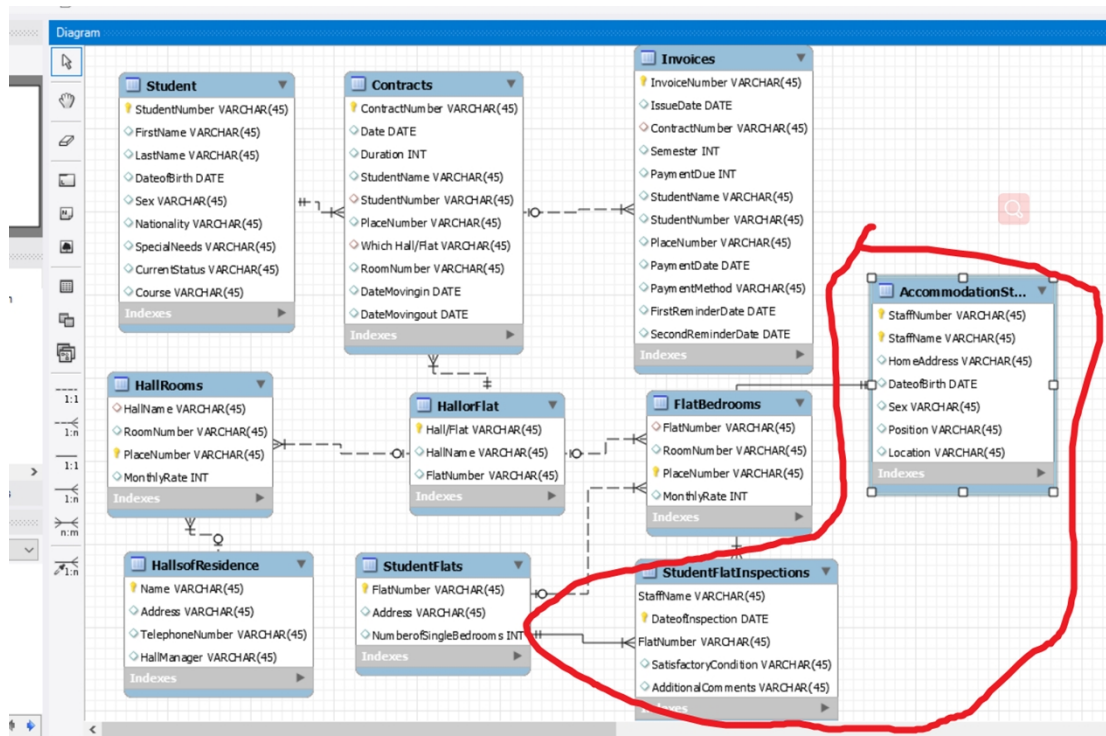# Lab3&Lab4 Report

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This is my EER model on workbench:

The 2 tables circled is additionally designed for **task1.**

This is the index of my tables:

```
        book
        dreamhome
        information_schema
        mysql
        performance_schema
        sys
        universityaccommodation
7 rows in set (0.01 sec)

mysql> use universityaccommodation;
Database changed
mysql> show tables;
+----------------------------------+
| Tables_in_universityaccommodation |
+----------------------------------+
| accommodationstaff               |
| contracts                        |
| flatbedrooms                     |
| hallorflat                       |
| hallrooms                        |
| hallsofresidence                 |
| invoices                         |
| student                          |
| studentflatinspections           |
| studentflats                     |
+----------------------------------+
10 rows in set (0.01 sec)

mysql>
```

For example,the table of rooms is like this;

```
mysql>  select * from rooms;
+--------+---------+-------------+------------+--------+
| RoomNo | PlaceNo | MonthlyRate | HallName   | FlatNo |
+--------+---------+-------------+------------+--------+
| 1      | C301    | 120         | NULL       | C3     |
| 2      | C302    | 120         | NULL       | C3     |
| 3      | C303    | 120         | NULL       | C3     |
| 4      | C304    | 120         | NULL       | C3     |
| 5      | C305    | 120         | NULL       | C3     |
| 1      | E101    | 100         | NULL       | E1     |
| 2      | E102    | 100         | NULL       | E1     |
| 3      | E103    | 80          | NULL       | E1     |
| 1      | E201    | 80          | NULL       | E2     |
| 2      | E202    | 80          | NULL       | E2     |
| 3      | E203    | 100         | NULL       | E2     |
| 4      | E204    | 100         | NULL       | E2     |
| 101    | G101    | 100         | Gryffindor | NULL   |
| 102    | G102    | 100         | Gryffindor | NULL   |
| 305    | G305    | 200         | Gryffindor | NULL   |
| 101    | H101    | 150         | Hufflepuff | NULL   |
| 102    | H102    | 150         | Hufflepuff | NULL   |
| 103    | H103    | 150         | Hufflepuff | NULL   |
| 120    | H120    | 100         | Hufflepuff | NULL   |
| 106    | R106    | 150         | Ravenclaw  | NULL   |
| 301    | R301    | 120         | Ravenclaw  | NULL   |
| 502    | R502    | 120         | Ravenclaw  | NULL   |
| 206    | S206    | 200         | Slytherin  | NULL   |
| 207    | S207    | 200         | Slytherin  | NULL   |
| 310    | S310    | 300         | Slytherin  | NULL   |
| 1      | W601    | 110         | NULL       | W6     |
| 2      | W602    | 110         | NULL       | W6     |
| 3      | W603    | 110         | NULL       | W6     |
+--------+---------+-------------+------------+--------+
28 rows in set (0.00 sec)
```

The answer code   of **task2:**

INSERT INTO student

VALUES('S356','MingFei','OuYang','1999-6-24','M','China',NULL,'Waiting','IoT');

INSERT INTO contracts

VALUES('101089','2017-9-1',3,'San Zhang','S287','S310','Hall abc',123,'2017-9-5',NULL);

INSERT INTO invoices

VALUES('1108645819','2019-2-5','103523',3,400,'John','S310','S123',NULL,NULL,'2017-9-5','2019-2-20','2019-2-25');

The answer code and results of **task3:**

A.

Select

contractnumber,date,duration,studentname,studentnumber,placen

umber,whichhallorflat,roomnumber,datemovingin,datemovingout

from Contracts

where Student s.StudentNumber=c.StudentNumber

order by s.LastName;

```
mysql> select s.StudentNo, s.fName, s.lName, c.ContractNo, c.Date, c.Duration, c.PlaceNo, c.RoomNo, c
.DateIn, c.DateOut
    -> from contracts c,students s
    -> where s.StudentNo=c.StudentNo
    -> order by s.lName;
+-----------+---------+---------+------------+------------+----------+---------+--------+----
| StudentNo | fName   | lName   | ContractNo | Date       | Duration | PlaceNo | RoomNo | Dat
eIn      | DateOut    |
+-----------+---------+---------+------------+------------+----------+---------+--------+----
| S590      | John    | Doe     | 101468     | 2017-09-01 | 1        | E203    | 3      | 201
7-09-15 | 2018-01-15 |
| S590      | John    | Doe     | 103523     | 2018-09-01 | 2        | G305    | 305    | 201
8-09-10 | NULL       |
| S328      | Anne    | Martin  | 102796     | 2018-09-02 | 3        | H101    | 101    | 201
8-09-10 | 2019-08-01 |
| S328      | Anne    | Martin  | 101176     | 2017-09-01 | 3        | R106    | 106    | 201
7-09-10 | 2018-08-01 |
| S902      | Eduardo | Saverin | 102863     | 2018-09-02 | 2        | W603    | 3      | 201
8-09-15 | 2019-06-01 |
| S287      | San     | Zhang   | 102653     | 2018-09-01 | 3        | C301    | 1      | 201
8-09-15 | 2019-08-01 |
| S287      | San     | Zhang   | 101089     | 2017-09-01 | 3        | S310    | 310    | 201
7-09-05 | NULL       |
+-----------+---------+---------+------------+------------+----------+---------+--------+----
7 rows in set (0.00 sec)
```

B.

select *

from contracts

where DateMovingout between "2018-06-01" and "2018-09-01";

```
mysql> select * from contracts
    -> where DateOut between '2018-06-01' and '2018-09-01' or DateOut between '2019-06-01' an
d '2019-09-01';

+-----------+------------+----------+----------------+-----------+---------+----------------+
| ContractNo | Date      | Duration | StudentName    | StudentNo | PlaceNo | Hall_Flat      |
| RoomNo    | DateIn     | DateOut  |                |           |         |                |
+-----------+------------+----------+----------------+-----------+---------+----------------+
| 101176    | 2017-09-01 | 3        | Anne Martin    | S328      | R106    | Hall Ravenclaw |
| 106       | 2017-09-10 | 2018-08-01 |              |           |         |                |
| 102653    | 2018-09-01 | 3        | San Zhang      | S287      | C301    | Flat C3        |
| 1         | 2018-09-15 | 2019-08-01 |              |           |         |                |
| 102796    | 2018-09-02 | 3        | Anne Martin    | S328      | H101    | Hall Hufflepuf |
| f 101     | 2018-09-10 | 2019-08-01 |              |           |         |                |
| 102863    | 2018-09-02 | 2        | Eduardo Saverin | S902     | W603    | Flat W6        |
| 3         | 2018-09-15 | 2019-06-01 |              |           |         |                |
+-----------+------------+----------+----------------+-----------+---------+----------------+
4 rows in set (0.00 sec)
```

C.select count(paymentdue) from invoices

where studentname="John DOE";

```
mysql> select sum(PaymentDue) as TotalRentPay,StudentName
    -> from invoices
    -> where StudentName='John Doe';
+--------------+-------------+
| TotalRentPay | StudentName |
+--------------+-------------+
|         2000 | John Doe    |
+--------------+-------------+
1 row in set (0.01 sec)
```

D.select *

from studentflatinspections

where SatisfactoryCondition="no";

E. select c.studentname,s.studentnumber,c.roomno,c.placeno from

Students s,contracts c

Where s.studentno=c.studentno and c.HallorFlat="Hall Gryffindor";

```
mysql> select s.studentNo, c.studentname, c.roomno, c.placeno
    -> from students s, contracts c
    -> where s.studentno=c.studentno and c.Hall_Flat = 'Hall Gryffindor';
+-----------+-------------+--------+---------+
| studentNo | studentname | roomno | placeno |
+-----------+-------------+--------+---------+
| S590      | John Doe    | 305    | G305    |
+-----------+-------------+--------+---------+
1 row in set (0.00 sec)
```

F.select min(Monthlyrate),max(Monthlyrate),avg(Monthlyrate)

from Hallrooms

order by Hallname;

```
+----------------+
| Min(MonthlyRat |
+----------------+
| 100            |
| 100            |
| 100            |
| 120            |
| 200            |
+----------------+
5 rows in set (0.
```

```
mysql> select Av
    -> from room
    -> group by
    -> order by
+----------------+
| Avg(MonthlyRat |
+----------------+
| 104.6666666666 |
| 133.3333333333 |
|              1 |
| 233.3333333333 |
+----------------+
5 rows in set (0
```

```
mysql> select Ma
    -> from room
    -> group by
    -> order by
+----------------+
| Max(MonthlyRat |
+----------------+
| 80             |
| 200            |
| 150            |
| 150            |
| 300            |
+----------------+
5 rows in set (0
```

G.

select * from invoices where paymentdate is NULL;

```
mysql> select *
    -> from invoices
    -> where paymentdate is null;
+-----------+------------+------------+----------+------------+-------------+-----------+----+
| InvoiceNo | IssueDate  | ContractNo | Semester | PaymentDue | StudentName | StudentNo | P1 |
| aceNo     | PaymentDate | PaymentMethod | FirstReminderDate | SecondReminderDate |       |     |
+-----------+------------+------------+----------+------------+-------------+-----------+----+
| 1108645819 | 2019-02-05 | 103523    | 2        | 1000       | John Doe    | S590      | G3 |
| 01        | NULL       | NULL       | 2019-02-20 | 2019-02-25 |           |           |    |
+-----------+------------+------------+----------+------------+-------------+-----------+----+
1 row in set (0.00 sec)
```

H.

select* from invoices where paymentmethod="Cash";

```
mysql> select *
    -> from invoices
    -> where paymentmethod ='Cash' ;
+------------+------------+------------+----------+------------+-----------------+------------+
| InvoiceNo  | IssueDate  | ContractNo | Semester | PaymentDue | StudentName     | StudentNo  |
| PlaceNo    | PaymentDate| PaymentMethod| FirstReminderDate | SecondReminderDate |       |
+------------+------------+------------+----------+------------+-----------------+------------+
| 1009461218 | 2018-07-05 | 101176     | 3        | 300        | Anne Martin     | S328       |
| R106       | 2018-07-21 | Cash       | 2018-07-15 | 2018-07-20 |               |            |
| 1074121216 | 2019-02-05 | 102863     | 2        | 550        | Eduardo Saverin | S902       |
| W603       | 2019-02-10 | Cash       | NULL     | NULL       |                 |            |
+------------+------------+------------+----------+------------+-----------------+------------+
2 rows in set (0.00 sec)
```

I.select sum(paymentdue) from invoices where issuedate between "2018-9-1" and "2019-8-1";

```
mysql> select sum(paymentdue)
    -> from invoices
    -> where issuedate between '2018-09-01' and '2019-08-01';
+-----------------+
| sum(paymentdue) |
+-----------------+
|            4300 |
+-----------------+
1 row in set (0.00 sec)
```

J.

Select s.studentno,n.studentname

  From invoices n,students s where (paymentdate-issuedate)<10 and   s.studentno=n.studentno;

```
mysql> select s.studentno,i.studentname
    -> from invoices i,students s
    -> where (paymentdate-issuedate)<10 and s.studentno=i.studentno;
+-----------+-----------------+
| studentno | studentname     |
+-----------+-----------------+
| S287      | San Zhang       |
| S902      | Eduardo Saverin |
| S902      | Eduardo Saverin |
+-----------+-----------------+
3 rows in set (0.00 sec)

mysql>
```