



# National College *of* Ireland

**Introduction to Data Modelling and Databases: Hotel KIA Report**  
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## Introduction

In this group project, we created a database for the reservation system of the hotel chain KIA.

Database Creation Script – Hotel\_KIA.sql

Queries Script – Advanced\_queries.sql

Entity Relationship Modelling – ERDiagram

Task	Team Contribution
Report Writing	Ata Turkoglu
Database Creation	All team members
Queries	All team members
Entity Relationship Diagram	Ata Turkoglu & Kavindu Hansajith

## Background Analysis

KIA Ltd is a hotel chain with three branches Canada, Paris and Dublin. The hotel in Canada has twenty rooms and ten employees, the hotel in Paris has fifteen rooms and eight employees, and the hotel in Dublin has twenty five rooms and thirteen employees. The database should be created using six tables: hotel, staff, room, customer, reservation and bill. In order for the database to work correctly, the primary keys of all tables should be available, and foreign keys should be used for connections where necessary.

## Planning & Design

Hotel KIA Database was planned to have the following:

- Hotel table
- Staff table
- Room table
- Customer table
- Reservation table
- Bill table

### Constraints Used:

Several constraints were used to limit the type of data allowed in each table, maintaining data integrity. The following constraints were successfully utilised during the implementation of the Hotel KIA database:

- NOT NULL: Which restricts the use of a null value, a proper value must be entered.
- PRIMARY KEY: Uniquely identifies each record.
- FOREIGN KEY: These are used to relate tables to each other.

## Queries

Each team member created queries using MySQL.

### • Ata Turkoglu created the following queries:

#4. Get the total revenue earned by each hotel in year, prediting all rooms are priced on current rates:

```
SELECT HotelName, SUM(RoomPrice * 365) AS TotalEarning FROM Hotel JOIN Room ON Hotel.HotelID = Room.HotelID GROUP BY HotelName;
```

#5. view the total number of rooms in each hotel:

```
SELECT HotelName, COUNT(*) AS TotalRooms FROM Hotel JOIN Room ON Hotel.HotelID = Room.HotelID GROUP BY HotelName;
```

#6. Show the names of all managers in any of the hotels:

```
SELECT CONCAT(Title, ' ', FirstName, ' ', LastName) AS FullName FROM Staff WHERE Position = 'Manager';
```

#11. List all the staff members who were born in the 1990s, sorted by their salary in descending order:

```
SELECT StaffID, CONCAT(FirstName, ' ', LastName) AS Name, Position, Salary FROM Staff WHERE YEAR(DOB) BETWEEN 1990 AND 1999 ORDER BY Salary DESC;
```

### • Idil Zehra Tatar created the following queries:

#1. Create a view of staff details at hotel H01 excluding salaries:

```
CREATE VIEW exSalary AS SELECT StaffID, FirstName, LastName, Address, TelNo, Position, Sex, DOB, HotelID FROM staff WHERE HotelID = 'H01';
```

#Run this code to see exsalary

```
select * from exSalary;
```

#2. LIST staff who work in City 'Toronto':

```
SELECT FirstName, LastName FROM staff WHERE HotelID = (SELECT HotelID FROM Hotel WHERE City = 'Toronto');
```

#3. List all the staff whose salary is greater than the average salary and show how much:

```
SELECT StaffID, FirstName, LastName, Salary, Salary - (SELECT AVG(salary) FROM staff) AS SalaryDifference FROM staff WHERE salary > (SELECT AVG(salary) FROM staff);
```

#7. Show the hotel name, room number, and room price for all available rooms in 'Hotel Sunset':

```
SELECT HotelName, RoomNo, RoomPrice FROM Hotel JOIN Room ON Hotel.HotelID = Room.HotelID WHERE HotelName = 'Hotel Sunset' AND Availability = 'Available';
```

### • Kavindu Hansajith created the following queries:

#8. Show the details of the cheapest room available in all hotels:

```
SELECT * FROM Room WHERE RoomPrice = (SELECT MIN(RoomPrice) FROM Room);
```

#9. Show the number of staff members who are doctors in 'Hotel Sunset':

```
SELECT COUNT(*) FROM Staff WHERE Position = 'Housekeeper' AND HotelID = 'H01';
```

#10. List all staff members whose first name starts with "T" and who work in a hotel in Paris:

```
SELECT s.StaffID, s.FirstName, s.LastName, h.HotelName, h.City FROM Staff s JOIN Hotel h ON s.HotelID = h.HotelID WHERE s.FirstName LIKE 'T%' AND h.City = 'Toronto';
```

#12. Find the staff members who work in the same position as Michael Hagne:

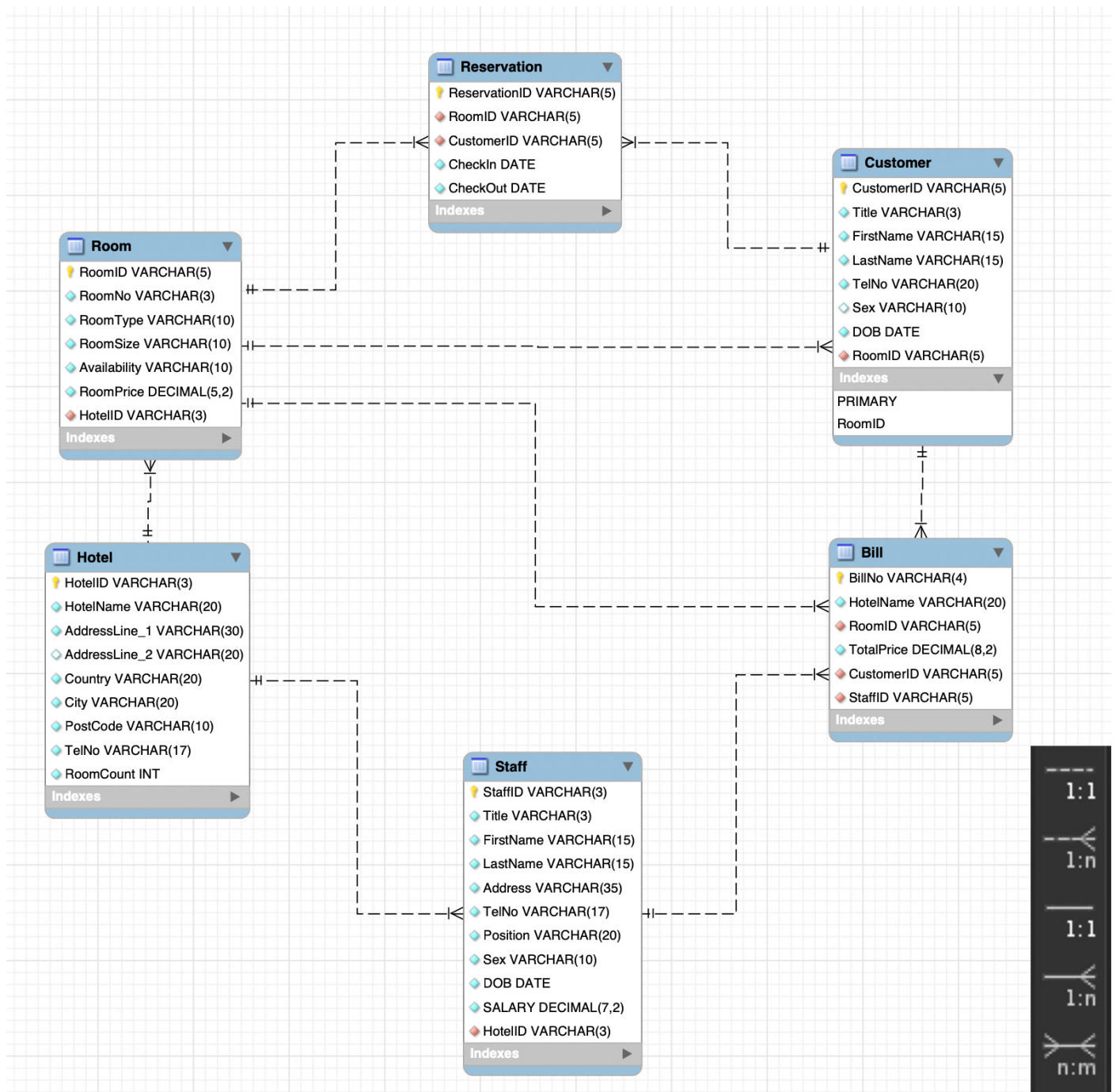
```
SELECT * FROM Staff WHERE Position = (SELECT Position FROM Staff WHERE FirstName = 'Thad' AND LastName = 'Milo');
```

#13. Find the staff members who have the same first name and work in the same hotel:

```
SELECT S1.StaffID, S1.FirstName, S1.LastName, S1.HotelID FROM Staff S1 JOIN Staff S2 ON S1.FirstName = S2.FirstName AND S1.HotelID = S2.HotelID
```

```
WHERE S1.StaffID < S2.StaffID UNION ALL SELECT S2.StaffID, S2.FirstName, S2.LastName, S2.HotelID FROM Staff S1 JOIN Staff S2 ON S1.FirstName = S2.FirstName AND S1.HotelID = S2.HotelID WHERE S1.StaffID < S2.StaffID;
```

## ERD Diagram



• (connection types are shown through the table in the lower right corner)

## Problems Encountered

Some problems were encountered when inserting the data into the table. The tables and data were re-examined with the team members, and these problems were eliminated in the latest version of the database.

## References

<https://www.w3schools.com/sql/>