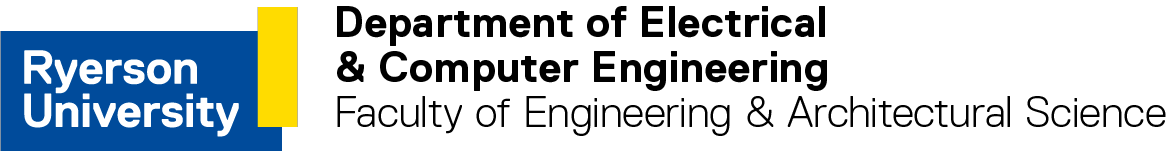
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| **Course Title:** | Fundamentals of Data Engineering |
| --- | --- |
| **Course Number:** | COE 848 |
| **Semester/Year (e.g.F2016):** | W2024 |

| **Instructor:** | Faezeh Ensan |
| --- | --- |

| *Assignment/Lab Number:* | 2 |
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| *Assignment/Lab Title:* | Entity-Relationship Diagram Design |

| *Submission Date:* | Feb 6, 2024 |
| --- | --- |
| *Due Date:* | Feb 5, 2024 |

| **Student**  **LAST Name** | **Student**  **FIRST Name** | **Student**  **Number** | **Section** | **Signature \*** |
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# Entity Relationship Diagram

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### Entities

* Hotel: Contains rooms, staff, customers and resources.
* Staff: Performs duties within the hotel and receives salary.
* Room: Contains staff and customers.
* Guest: Interacts with the hotel by purchasing rooms and services.
* Booking: Reservation for a room made by a guest.
* Bill: List of expenses made by guests to be given to them at the end of their booking.

### Attributes

#### Hotel

* HotelCode: primary key for the hotel entity.
* Name: hotel name.
* Address: address of hotel.
* Postcode: postal code of the hotel.
* City: city that hotel is located in.
* Country: country that hotel is located in.
* NumRooms: number of rooms within the hotel.
* DeskPhone: desk phone number of the hotel.
* ManagementPhone: management phone number of the hotel.
* StaffCount: number of staff within the hotel.
* EstablishmentDate: date hotel was established.

#### Staff

* EmployeeID: primary key for the staff entity.
* HotelCode: foreign key for the hotel the staff works at.
* FirstName: first name of the staff member.
* LastName: last name of the staff member.
* DOB: date of birth of staff member.
* Gender: gender of staff member.
* Email: email of the staff member.
* Phone: phone number of staff member.
* Password: password of staff corporate email account.
* Position: position of the staff member within the hotel.
* Salary: hourly rate of pay of staff member

#### Room

* RoomNo: room number.
* RoomType: type of room.
* HotelCode: foreign key to hotel this room belongs to
* Occupancy: number of members officially staying in this room.
* Services: list of services provided to this room

#### Guest

* GuestID: primary key of the guest entity.
* BookingID: foreign key to booking entity.
* GuestTitle: title of the guest.
* FirstName: first name of guest.
* LastName: last name of guest.
* DOB: date of birth of guest.
* Gender: gender of guest.
* Email: email of guest.
* Phone: phone number of guest.
* Password: password of guest.
* PassportNo: passport number of guest.
* Address: address of guest.
* City: city of guest.
* Country: country of guest.

#### Booking

* BookingID: primary key for the booking entity.
* HotelCode: foreign key for the hotel.
* RoomNo: room number of booking
* GuestID: foreign key of guest
* BookingDateTime: date and time of booking
* CheckinDateTime: date and time of checking into the hotel by the guest.
* CheckoutDateTime: date and time the guest checked out of the hotel.
* NumAdults: number of adults included in booking.

#### Bill

* InvoiceNum: invoice number of bill.
* BookingID: foreign key to booking the bill is for.
* GuestID: foreign key to the guest bill is for.
* RoomCharge: charge for the room.
* Services: services included in the bill.
* PaymentDate: date of payment.
* PaymentMode: mode of payment.
* ExpireDate: date of expiry of bill.
* ChequeNo: cheque number.
* Employees: employees involved in the bill.

### Relationships

* 1..1 Hotels contains 1..many Room
* 1..1 Hotels contains 1..many Staff
* 1..1 Hotels contains 1..many Guest
* 1..1 Hotels contains 1..many Resource
* 0..many Hotels have 0..many Expense
* 1..1 Guest has made 1..many Booking
* 1..1 Guest has 1..1 Bill
* 0..1 Booking has 1..1 Bill