MARMARA UNIVERSITY

FACULTY OF ENGINEERING

COMPUTER SCIENCE & ENGINEERING

DEPARTMENT

CSE 3055

DATABASE SYSTEMS

PROJECT STEP 3

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a) Project description: explain what your database project is about.

In our project, we designed a database for Tuzla Hotel. Thanks to this database, Tuzla Hotel will be able to keep its data securely and easily keep and examine the data of all departments, employees and customers in the hotel.

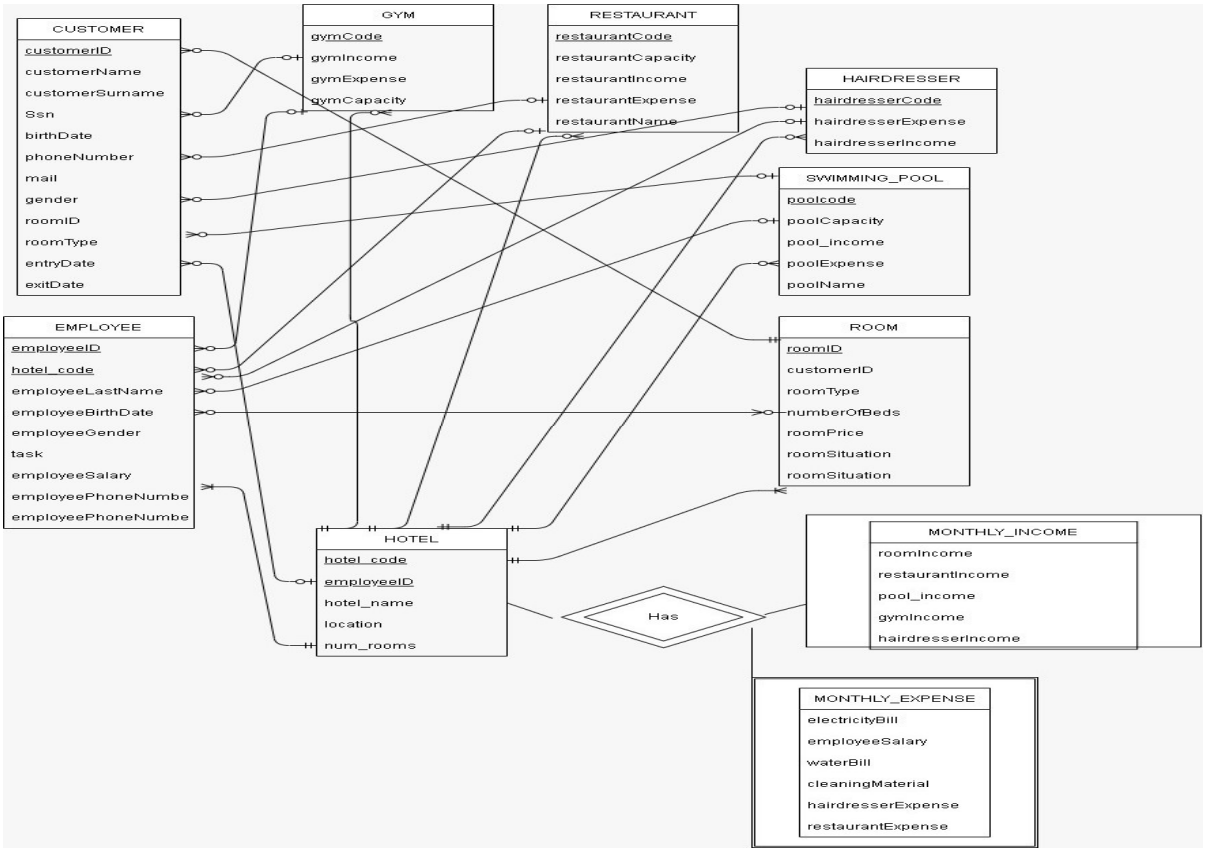
b) Scope: what is included/exclude? Which processes are supported, which ones are not?

While preparing our database, we have prepared entities that will hold every information from customer information to employee information. We created tables. To summarize briefly, when the customer arrives at the hotel, the receptionists greet them and enter their information into the database. These data are easily entered and kept in the database we have prepared. In addition, all employee information is available in the database. We also keep the income and expenses of other departments in the hotel in the database. In this way, everything can be accessed more easily and data can be entered without wasting time.

c) Data and requirements analysis for the database and business processes

Our client asked us to build a secure, powerful renewable, dynamic database. We have prepared constraints, primary key, foreign keys, relationships, tables to fulfill our customers requests.

b) Diagram of whole database



c) Tables

There are 10 tables in our database. These are divided into 10 as Customer, Employee, Gym, Hairdresser, Hotel, Monthly_Expense, Monthly_Income, Restaurant, Room and Swimming_Pool, respectively.

Customer:

Customer ID	customer Name	customer Last Name	ssn	birthDate	age	phoneNumber	mail	gender	roomID	Room Type	entry Date	exitDate
int	Nvarchar(25)	Nvarchar(25)	int	smalldatetime	int	int	Nvarchar(50)	Char(1)	int	Nvarchar(15)	small date time	small date time

The customer entity keeps the data of all customers coming to the hotel. “customerID” is the primary key of this entity. The customer name index is used in the customer entity.

Employee:

employee ID	hotel Code	employee First Name	employee Last Name	employee Birth Date	age	employee Gender	department	position	employee Salary	employee Phone Number
int	int	Nvarchar(25)	Nvarchar(25)	small date time	int	Char(1)	Nvarchar(20)	Nvarchar(25)	int	int

Employee entity keeps the data of all employees working in the hotel. “The employeeID” is the primary key of this entity. Employee entity shines employee gender constraints by default.

Gym:

gymCode	gymIncome	gymExpense	gymCapacity	numberOfEmployee
int	int	int	int	int

The gym entity contains the data of the gym department. “gymCode” is the primary key of this entity.

Hairdresser:

hairdresserCode	hairdresserIncome	hairdresserExpense	numberOfEmployee
int	int	int	int

The Hairdresser entity contains the data of the hairdresser department. “hairdresserCode” is the primary key of this entity.

Hotel:

hotelCode	numberOfEmployee	hotelName	location	numberOfRooms
int	int	Nvarchar(25)	Nvarchar(20)	int

The Hotel entity contains the data of the hotel department. “hotelCode” is the primary key of this entity.

Monthly_Expense:

month	electricity Bill	employee Salary	water Bill	cleaning Metarial	hairdresser Expense	restaurant Expense	pool Expense	total
Nvarchar(20)	int	İnt	İnt	İnt	int	int	int	int

The Monthly_Expense entity, on the other hand, keeps the monthly expenses. Here we can easily see the monthly expenses of the hotel. Furthermore, total is a computed column

Monthly_Income:

month	room Income	restaurant Income	pool Income	gym Income	hairdresser Income	Total
Nvarchar(20)	int	int	int	int	int	int

The Monthly_Income entity, on the other hand, keeps the monthly incomes. Here we can easily see the monthly incomes of the hotel. Furthermore, total is a computed column.

Restaurant:

restaurant Code	restaurant Capacity	restaurant Income	restaurant Expense	numberOfEmployee	restaurant Name
int	int	int	int	int	Nvarchar(50)

The Restaurant entity contains the data of the restaurant department. “restaurantCode” is the primary key of this entity.

Room:

roomID	customerID	roomType	numberOfBeds	roomPrice	roomSituation
int	int	Nvarchar(20)	smallint	int	Nvarchar(20)

The Room entity contains the data of the room department. “restaurantID” is the primary key of this entity.

Swimming_Pool:

poolCode	poolCapacity	poolIncome	poolExpense	poolName
int	int	int	int	Nvarchar(20)

The Swimming_Pool entity contains the data of the swimming_pool department. “poolCode” is the primary key of this entity.

e) Triggers**:**
When a record is created for a customer, the customer's room ID will be automatically displayed in the room table. The name of this trigger is INSERT_CUTOMER RECORD.

SQLQuery6.sql - (I...UH0NPO\yalci (56))* | SQLQuery5.sql - (I...UH0

```
CREATE TRIGGER INSERT_CUSTOMER_RECORD
ON CUSTOMER
AFTER INSERT
AS
Begin
    INSERT INTO Room(customerID)
    SELECT inserted.customerID
    FROM inserted
End
Go
```

f) Stored procedures **:**

1) Showing customer information

```
SELECT TOP (1000) [customerID]
      ,[customerName]
      ,[customerLastName]
      ,[roomID]
      ,[roomType]
  FROM [HOTEL_TUZLA].[dbo].[Customer]

  go

  CREATE PROCEDURE CUSTOMER_INF @stID int
    AS
    SELECT c.customerID,r.roomPrice,r.roomType as InformationOfCustomer
   FROM Customer c,Room r
   WHERE c.customerID=r.customerID
   go
```

100 %

Results | Messages

	customerID	customerName	customerLastName	roomID	roomType
1	1	Ezgi	Şeker	1	Normal
2	2	Emirhan	Selim	2	Normal
3	3	Onur	Kırıt	3	Suit
4	4	Aykut	Kocaman	4	Normal
5	5	Hazal	Er	5	Normal
6	6	Çetin	Kar	6	Normal
7	7	Soner	Karaca	7	Suit
8	8	Arya	Erkin	8	Normal
9	9	Nazlı	Can	9	Normal
10	10	Kemal	Peker	10	Suit
11	11	Pınar	Peker	11	Suit
12	12	Erol	Sanhal	12	Normal
13	13	Sevda	Akçan	13	Normal
14	14	Selim	Özbay	14	Normal
15	15	İhsan	Havas	15	Normal
16	16	Tuğçe	Koç	16	Normal
17	17	Can	Dolar	17	Normal

Query executed successfully.

2)DELETE_CUSTOMER for delete customer.

```
CREATE PROCEDURE DELETE_CUSTOMER (@customerID BIGINT)
AS
BEGIN
    UPDATE Customer
    SET isDeleted=1
END
```

3)INSERT_PHONENUMBER_CUSTOMER for insterting phone number for customer

```
CREATE PROCEDURE INSERT_PHONENUMBER_CUSTOMER (@customerName nvarchar(25),
                                              @customerLastName nvarchar(25),
                                              @ssn int,
                                              @birthDate smalldatetime,
                                              @age int,
                                              @phoneNumber int,
                                              @mail nvarchar(50),
                                              @gender char(1),
                                              @roomID int,
                                              @roomType nvarchar(15),
                                              @entryDate smalldatetime,
                                              @exitDate smalldatetime,
                                              @isDeleted int
                                                    )
AS
BEGIN
    INSERT INTO Customer VALUES(@customerName,@customerLastName,@ssn,@birthDate,@age,@phoneNumber,@mail,@gender,@roomID,@roomType,@entryDate,@exitDate,@isDeleted)
END
```

4) UPDATE_SALARY_EMPLOYEE for updating salaries of employee.

```
CREATE PROCEDURE UPDATE_SALARY_EMPLOYEE(@hotelCode int,
                                        @employeeFirstName nvarchar(25),
                                        @employeeLastName nvarchar(25),
                                        @employeeBirthDate smalldatetime,
                                        @age int,
                                        @employeeGender char(1),
                                        @department nvarchar(20),
                                        @position nvarchar(25),
                                        @employeeSalary int,
                                        @employeePhoneNumber int    )
AS
BEGIN
    UPDATE Employee
    SET hotelCode = @hotelCode,
    employeeFirstName = @employeeFirstName,
    employeeLastName = @employeeLastName,
    employeeBirthDate = @employeeBirthDate,
    age = @age,
    employeeGender = @employeeGender,
    department = @department,
    position = @position,
    employeePhoneNumber = @employeePhoneNumber
    WHERE employeeSalary = @employeeSalary
END
```

5)INSERT_CUSTOMER for insterting customer to the database.

```
CREATE PROCEDURE INSERT_CUSTOMER (@customerName nvarchar(25),
                                  @customerLastName nvarchar(25),
                                  @ssn int,
                                  @birthDate smalldatetime,
                                  @age int,
                                  @phoneNumber int,
                                  @mail nvarchar(50),
                                  @gender char(1),
                                  @roomID int,
                                  @roomType nvarchar(15),
                                  @entryDate smalldatetime,
                                  @exitDate smalldatetime
                                  )
AS
BEGIN
    INSERT INTO Customer(customerName,customerLastName,ssn,birthDate,age,phoneNumber,mail,gender,roomID,roomType,entryDate,exitDate)
    VALUES(@customerName,@customerLastName,@ssn,@birthDate,@age,@phoneNumber,@mail,@gender,@roomID,@roomType,@entryDate,@exitDate)
END
```

6)INSERT_EMPLOYEE for insterting employee to the database.

```
CREATE PROCEDURE INSERT_EMPLOYEE (@hotelCode int,
                                  @employeeFirstName nvarchar(25),
                                  @employeeLastName nvarchar(25),
                                  @employeeBirthDate smalldatetime,
                                  @age int,
                                  @employeeGender char(1),
                                  @department nvarchar(20),
                                  @position nvarchar(25),
                                  @employeeSalary int,
                                  @employeePhoneNumber int
                                  )
AS
BEGIN
    INSERT INTO Employee(hotelCode,employeeFirstName,employeeLastName,employeeBirthDate,age,employeeGender,department,position,employeeSalary,employeePhoneNumber)
    VALUES(@hotelCode,@employeeFirstName,@employeeLastName,@employeeBirthDate,@age,@employeeGender,@department,@position,@employeeSalary,@employeePhoneNumber)
END
```