

1.a) Entities and their definitions.

1-Customer Entity: Created for customers and their information, such as unique SSN, Name, Surname, PhoneNumber, Mail, Gender, Age which is derived , BirthDate, Address which is composite of city, street, postal code, Nationality and Budget.

2- Company Entity: Created for the hotel itself to be aware of features of the hotel. It's fields are unique ID, Name, Location which is composite of city, street, postal code, Rate, NumberOfRooms, NumberOfStaff, CompanyFeatures which is multivalued (WI-FI,spa, rooms have kitchen, casino, fitness etc.), PhoneNumber and Mail.

3-Staff Entity: Created for hotel's Staff, each Staff has unique SSN, Name, Surname, Gender, Birthdate, SuperSsn which shows supervisor of the Staff, Address which is composite of city, street, postal code, StartedDate,Salary and DepartmentID to indicate their departments.

4-Department Entity: Created for hotel's department to distinct Staff's working places and responsibilities. It has DepartmentName, ManagerSsn and unique Department Number

5-Room Entity: Created for Reservation purpose, it's fields are unique RoomID, RoomType, Capacity, Price , Location and Availability.

6- Meal Entity: unique MealId, MealsType which include options all-inclusive, breakfast or table d'hôte options in hotels. These meal types has their own specific priceses

6.1-Brekafast has price and only one meal time

6.2-All Inclusive has price and four meal time

6.3-Table D'hôte has lower price with respect to All Inclusive and four meal time

6.4- No Meal option has no meal and price

7- Reservation Entity: It includes unique ReservationID, CustomerSsn, RoomId, MealId and ReservationPrice which is derived, check-in and check-out date, accommodation time which is derived.

1.b) Business processes and their definitions

As it is known that Customers tend to analyze the best option for their accommodation because of that the reservation features such as , location of the room, meal type which is decided by category means: all-inclusive, breakfast only, no tablet or meal only and company's location , rating which is evaluated by our customers can be analyzed by our customers before every reservation process and also company features, such as , aqua park, wi-fi, spa, fitness, casino. Customers can decide on accommodation according to customers' available date and budget, and reservations can be specified by customers with the help of various options for their accommodations. After deciding on combining wanted options, the price of the reservation is calculated then customers enter their information such as Ssn, name, surname, telephone number and address to reserve their accommodation thus customer budget decreases by reservation price. While reserving one of our staff helps our Customers. Staff are stored with their own information, such as Ssn, name, surname, address information, salary and department ID. Company's rooms are stored including room ID, room type, room capacity and availability. The department contains department id, name and manager ssn information . Reservation contains reservation id, customers ssn, room id, staff ssn ,meal id, check-in date, check-out date, accommodation time and reservation price.

1.c) Business rules, constraints, etc.

1- Company has many Rooms, Departments and Staff.

2-Department has at least one staff member.

3-Staff must work in only one department

4-Reservations are customer specific and created by them to register to accomodation

5-Each reservation may also be linked to many previous reservations .

6-Each Reservation has only one room, one meal type and one total price, one Customer, and one staff who are in charge of reservation.

1.d) Functional/ Non- Functional

Functional Requirements

1- Reservation/ Booking

-The Hotel Database keeps records of the room number, room type and displays the default room rate.

-The Hotel Database saves the customer's details; name, surname, address, telephone number.

-The Hotel Database will record the date and time of entry and exit.

-Customers should know the availability of rooms on a given date.

-Customers should be able to book existing rooms.

2- Meal

-Purchased meal types in registration are stored in the Hotel Database.

3-Management

-The Hotel Database shall display the hotel occupancy for a specified period of time.

-The Hotel Database shall allow for the addition and deletion and modification of information, regarding rooms and customer profiles.

4-Customer

-Customers can register for room and meal type from Company's options.

-Customers cannot register more than one at the same time.

Non-functional Requirements

-SQL is used for for accessing and manipulating our Hotel database

-Fields of the database should be understandable

-The Database can be used easily without making confusion between tables.

-The Database should not include redundant fields to have more performance

-SQL can manage hundreds of megabytes of data and more therefore SQL increased manageability of the big datas.