Date: 9/20/2021

Company: Team 4

Members: Michael Bohnet – MRB4383, Narain Mandyam – NTM555, Abdullah Khan – AK46996, Emilio Cabrera – EAC4622, Vinay Pahwa – VP7339, Ishan Patel – IKP97

Executive Summary

Overview

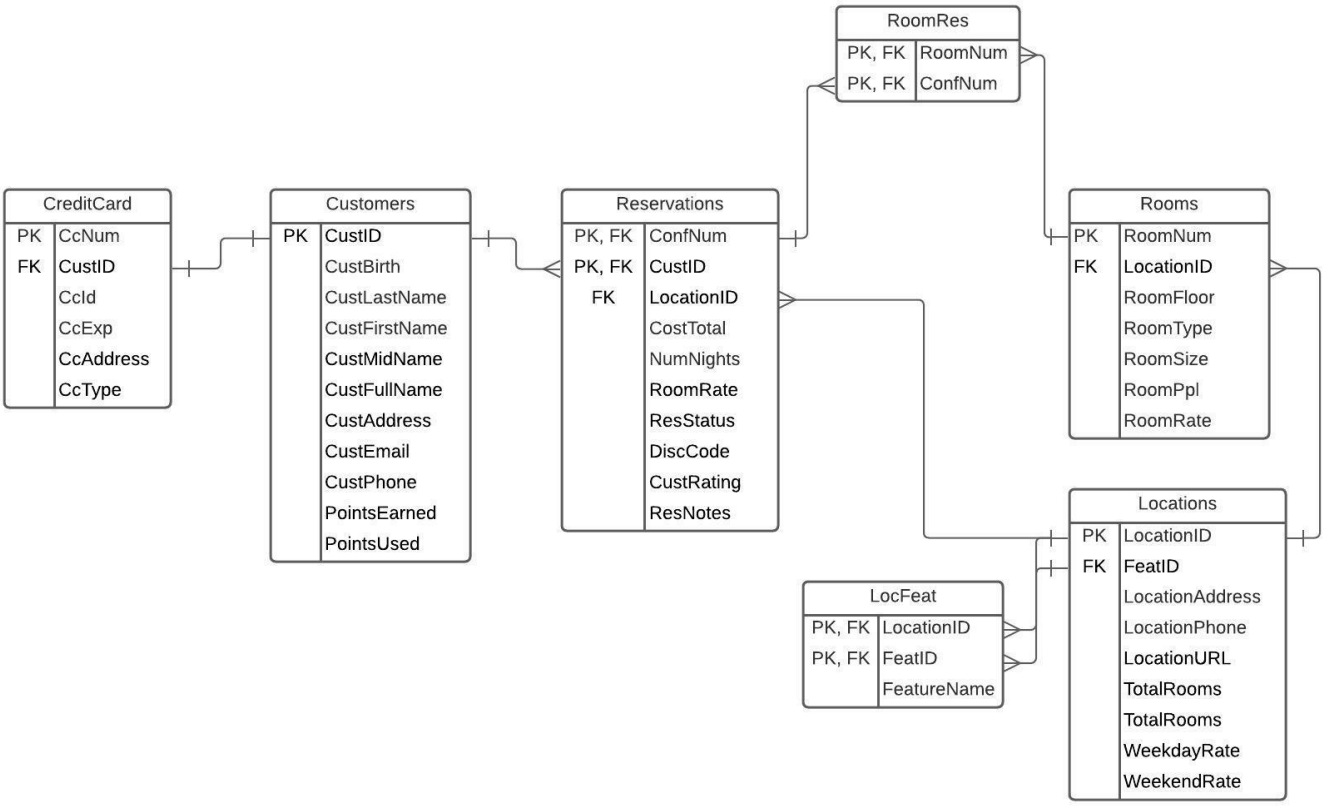
Our company was tasked with the creation of a database for the Sour Apple Hotel as they are expanding and now need a centralized reservation system to manage all of its new locations. The new system needs to be able to handle key data such as locations, customers, and reservations. Once built, it will be integrated into the website to handle operational needs.

Proposed Solution

The proposed database model consists of five different blocks and two join tables. As requested, there are separate blocks for customers, location, reservations, and rooms. Our team also chose to add an additional block for credit cards. Relationships between blocks are demarcated by using the crow's foot method. Under this method, a one-to-one method is represented by a perpendicular straight line, while a one-to-many relationship is represented by a three-pronged "crow's foot" symbol. The first relationship is one-to-one between credit cards and customers with the assumption that each customer only used one credit card to pay for rooms. The next relationship is a one-to-many relationship between customers and reservations as one customer could have multiple reservations over time with the hotel. The join table RoomRes was used between the reservations and rooms blocks to eliminate the many-to-many relationship that was present between the two. This was accomplished by assigning a room number and confirmation number to each reservation. Next, a one-to-many relationship was created between rooms and location, as each room can ultimately only be associated with one location, but each location could feature the same room numbers. Furthermore, the join table LocFeat was utilized to prevent another many-to-many relationship, as multiple locations could have the same features. The final relationship is a one-to-many relationship between reservations and locations as one location could have multiple reservations associated with it.

Final Thoughts and Implementation

We believe that this database will meet all of the desired goals of Sour Apple Hotel. This database system will allow for the ability to support internal operations while also being fully integrated into the hotel's website for customer use.


RoomRes
PK, FK RoomNum
PK, FK ConfNum
CreditCard
PK CcNum
FK CustID
CcId
CcExp
CcAddress
CcType
Customers
PK CustID
CustBirth
CustLastName
CustFirstName
CustMidName
CustFullName
CustAddress
CustEmail
CustPhone
PointsEarned
PointsUsed
Reservations
PK, FK ConfNum
PK, FK CustID
FK LocationID
CostTotal
NumNights
RoomRate
ResStatus
DiscCode
CustRating
ResNotes
Rooms
PK RoomNum
FK LocationID
RoomFloor
RoomType
RoomSize
RoomPpl
RoomRate
Locations
PK LocationID
FK FeatID
LocationAddress
LocationPhone
LocationURL
TotalRooms
TotalRooms
WeekdayRate
WeekendRate
LocFeat
PK, FK LocationID
PK, FK FeatID
FeatureName