Hotel Booking

Milestone 2: Business Rules & ERD

ITC 6000

Prepared by: Heejae Roh
Presented to: Professor, Venkata Duvvuri

Date: Nov 29th, 2022

INTRODUCTION

It is amazing that data can be stored and shared using ERD. I also understand the need for business rules. We want to create data about predicting hotel booking demand. We create an ERD for this purpose. In the data we have, reservation, hotel, customer, and customer history are important keys. Information about the room is also essential. This information has been organized into an ERD with Business rules.

BUSINESS RULE

Business rules:

1. a CUSTOMER will have its own unique CUSTOMER id.
2. a CUSTOMER can make one or many RESERVATIONs.
3. A HOTEL can have one or many locations.
4. a RESERVATION can involve one or many ROOMs.
5. a RESERVATION belongs to a CUSTOMER.
6. a AGENT can make zero or many RESERVATIONs.
7. a COMPANY can make zero or many RESERVATIONs.

BUSINESS GOAL & FEEDBACK

Business goal:

1. Predict hotel booking demand and cancellations
2. Estimates hotel reservations on a monthly basis
3. Predicts the probability of canceling based on the information about options selected by the booker
4. Optimize the way to accept and confirm reservations
5. Optimization of hotel revenue with anlysis

Incorporate feedback (from classmates)**:**

1. "I think the company table may be linked with the agent table." (Yuchen)
2. "I am also wondering why we need an agent when we want to make a reservation, can you explain more about this?" (Kaile)
   - We discussed agent and company. My opinion is company is group and agent is a person who help this reservation. An agent can be in company or not. We will decide before data import how to deal with company and agent.
3. "I'm a little bit confused about the ROOM can be booked in one or many RESERVATIONs, does it mean different person can book the same room at the same time" (Li Shen)
   - Room status can show the availability of a room. Room will be allotted for a reservation only if it is available at that time.

ERD for Hotel Booking Information

HOTEL

PK	hotel_id
	name
	type
	description
	phone
	address
	email
	rating

ROOM_RESERVATION

PK	id
FK1	reservation_id
FK2	reserved_room_id
FK3	assigned_room_id

RESERVATION

PK	reservation_id
FK1	company_id
FK2	agent_id
FK3	customer_id
	arrival_date_year
	arrival_date_month
	arrival_date_week_number
	arrival_date_day_of_month
	stays_in_weekend_nights
	stays_in_week_nights
	is_repeated_guest
	booking_changes
	deposit_type
	lead_time
	adults
	children
	babies
	meal
	required_car_parking_spaces
	total_of_special_requests
	reservation_status
	reservation_status_date
	is_cancelled
	market_segment
	distribution_channel
	customer_rating
	days_in_waiting_list
	customer_type
	invoice_number
	total_price

COMPANY

PK	company_id
	name
	description
	contact

CUSTOMER

PK	customer_id
	name
	contact
	adress
	country
FK	customer_history_id

CUSTOMER HISTORY

FK	customer_id
	previous_cancellation
	previous_booking(no cancel)
	score

ROOM

PK	room_id
FK1	hotel_id
	room_type
	room_number
	price(average daily rate)
	description

AGENT

PK	agent_id
	agent_number
	agent_company
	phone
	email