DAT251x

Introducing Data Modeling

Lab 02 | Normalizing Data

Estimated time to complete this lab is 60 minutes

Overview

In this lab, you will start normalizing data from an airport valet parking business. This will involve preparing normalized lists of entities and attributes, with definitions.

Note: The four labs in this course are accumulative. You cannot complete this lab if you did not successfully complete **Lab 01**.

Getting Started

In this exercise, you will review the exhibits and case study story provided to build a list of entities and attributes. Since the deliverables for this lab are in text format, you can use hand-written lists or desktop software such as Microsoft Word or Microsoft Excel to document your work.

Exercise 1: Identify Candidate Entities

In this exercise, you will create a list of candidate entities based on the case study and exhibits.

Airport Valet Parking Case Study

At Metropolis Airport, valet parking is offered by a third-party supplier, Airport Valet Parking. A customer who wants to use their service is guided through the following process:

1. Customer drives into the receiving area for Airport Valet Parking and is met by a valet customer service representative (CSR).
2. The CSR registers this parking event by gathering information about the vehicle and the driver. See Exhibit 1 for items printed on the registration ticket for more details
    a. Basic vehicle information
    b. Driver (customer) information
    c. Flight and Frequent Flyer information
    d. Additional services requested
3. The CSR attaches a key tag to the driver's key.
4. The customer is given a copy of the registration ticket and is transported via a shuttle from the valet parking receiving area to their flight's terminal.
5. The CSR assigns the vehicle, key, and partially completed driver's ticket to a driver who parks the vehicle.
6. The driver notes the location of the parked vehicle and returns the driver's ticket and key to the CSR.
7. The CSR updates the parking event records with the location of the vehicle.
8. Upon return of the customer, further activities happen, but these will be covered in future labs.

Using Exhibit 1 and the case study above, identify a list of candidate entities Airport Valet would need to include in their Logical Data Model. Write a definition for each entity, following the guidelines given in the videos leading up to the lab. In this exercise, you do not need to identify any attributes.

Remember, *an entity is a person, place, thing or event about which an organization need to collect and record data about*. Entities have attributes, which are the data items it needs to manage about those entities.

The result of completing this exercise is a list of entities and their definitions. As a start, here are two entities that should be on your list:

- *Vehicle*: an automobile, motorcycle or other transportation equipment allowed to be parked in valet parking. Airport Valet Parking does not accept commercial, agricultural or unlicensed vehicles (bicycles, scooters, etc.) for valet parking.

- *Parking Event*: A single occurrence of a customer delivering a Vehicle for parking at Airport Valet Parking.

Notes:

Document any questions or assumptions you have made in preparing your list of candidate entities. These are candidate entities and you will refine your list in the next exercise and other labs.

Airport Valet Parking

When you want to let someone else do the parking.

Upon arrival: Call us at 555-1212 so that we can have your vehicle ready when you arrive at the valet parking area.

Registration Number: 12345

License Plate: 123 AAA
Car Make: Neptune IV

Customer Name: Karen Lopez

Airline: Trans Global Airlines

Date: 2 Feb 2017 Time: 9:07 AM
Date Back: 9 Feb 2017 Time: 9:37 PM
Total Time: 0 Months 7 Days 30 Minutes

Promo Code: DAT251X
Frequent Flyer Number: 12345678

Have a nice trip!
CSR Anne

Rates:

- Monthly $400
- Weekly $125
- Daily $25
- Hourly $10
- Basic Car Wash $25
- Car Detailing $225

Exercise 2: Identify Attributes

In this exercise, you will identify attributes based on the case study and exhibits.

1. Using your list of candidate entities, the case study and Exhibit 1 Registration Document, identify attributes for your list of entities.
    a. Ensure you identify a primary key for each entity.
    b. Use the naming standard covered in the videos (qualifier noun classword). For example: Customer Given Name or Customer Family Name
    c. Ensure each attribute contains only one fact: Given Name, not First and Last Name or Vehicle Make & Model
2. Define each attribute.
3. Don't limit your attribute list to those data items in the exhibit. Include attributes you believe would been needed to conduct the airport valet parking process.
4. If you discover or require any new entities while doing this exercise, update your list of entities.
5. Document any assumptions or questions you have about these attributes.

You do not have to go from First Normal Form to Second Normal Form, etc. Just assign attributes to each entity to meet the rules up to Third Normal Form.

Each attribute is identified by the key, the whole key, and nothing but the key.

Retain your results; you'll be using them in the next lab.