1. Description of FARMS expansion

This expansion will add a complimentary airport shuttle to the hotels. Each hotel will have their shuttles that will be available (by reservation only) to guests who have a reservation at the hotel within the next couple of days or are checking out that day. Each shuttle will have regular maintenance done after a certain number of trips (10). The reservations must be made at least a day in advance to allow for proper scheduling for picking up or dropping off multiple parties.

2. Data Specifications Overview

Part A (List of Business Rules)

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1. Take vehicle out of service after so many miles (5000 mi) or (100 trips
    a. Vehicles must have an active status to be scheduled for a reservation, the status could also be
    b. "A" Active, "O" Out for maintenance, "N" Needs maintenance soon
2. Shuttles (Identity = 4500, 10)
    a. can only be used by guests (Check reservation status) within 2 days of their stay at the hotel or on the last day of their reservation (within a few hours of checkout)
    b. Shuttles are not bound to any hotel.
3. Shuttles are called by the hotels to do trips
    a. Max capacity should be no more than 20
    b. Default ShuttleStatusID = 1
    c. Comments can be left about the shuttle if it needs extra cleaning or is out for maintenance.
    d. The hotels are small so that is why the trips will be by reservation only
4. Drivers
    a. They will be stored (Identity = 3500,1)
    b. Must have a valid US driver's license that will be kept on file
    c. The employees will be notified 3 months in advance if their license will be expiring soon.
5. Trips will be logged (Identity = 10000,1)

a. The shuttle trips must include an accurate list of times and amount of people on the shuttle.

6. ShuttleReservation (7000,1)

    a. Shuttle Reservation Status CHECK & Trigger "R" Reserved, "N" No Show, "X" Canceled, "C" Completed

    b. Shuttle reservations can only made by passengers that have names that appear in the FARMS guest table that reservations within 1 day of their requested pickup time or 6 hours after checkout

    c. Before the reservation can be made there must be a check to make sure the number of seats requested is a valid number for the shuttle

        i. Create a CheckAmountOfRemainingSeats()

7. Driver's license

    a. They will be stored (5500,10)

    b. Each driver will need a valid driver's license to be assigned to a shuttle trip

8. Shuttle trips (10000,1)

    a. Arrival times of the shuttle will be monitored and compared to the times the guests requested to make sure that they are arriving on time.

    b. Need to keep track of the airport, driver, shuttle, and the hotel the shuttle is expected to travel to.

    c. They will just be one-way trips to make things more straightforward

9. Passenger

    a. They will be stored (1,1)

    b. Get all required info for the passenger just like the guestID so that they can be easily compared using the distributed queries

    c. Must check that the name of the passenger has a reservation in the next few days.

    d. To make sure that the guest/hotel know that they used the shuttle service they will be charged zero dollars on their portfolio if they use it.

ERD_Diagram

Part B (Triggers)

- tr_PassMustBeAGuest
  - On Insert
  - Raises an error if the passengers name is not in the FARM databases guest with a check-in date within 1 day of the pickup time or 6 hours passed their checkout time
  - Accomplishes Business Rule 6b, 8b, 9c
- tr_ValidLicense
  - On Insert/Update
  - Raises error if the drivers license country is not the US or if the license has expired
  - Accomplishes Business Rule 7b
- tr_AddShuttleCharge
  - After update of the ShuttleReservationStatus Column to 'C' for complete or no 'N'. It uses sp_GetFolioID using the passenger's name which has already been checked and the date that reservation it should be during.
    - If it is a no show, it charges the passengers folio $10
    - If it was complete it adds a charge to the passenger's folio of $0 showing that they used the shuttle as intended
  - Accomplishes Business Rule 9d
- tr_PickUpTimeChange
  - Instead of Update
  - If the adjusted time does not fall within the time window the pickup time is kept the same. It will also send a message that nothing was changed.
  - Accomplishes Business Rule 6b, 8b, 9c

Part C (Sprocs)

- Sp_CreateShuttleTrip
  - Uses sp_CreateShuttleReservation, dbo.CheckRemainingSeats and tr_PassMustBeAGuest for error handling. If checkRemainingSeats <

NumRequested then it will check for the next active shuttle and see if it has any remaining seats for the day and use that value instead.

- o Input Parameters:
    - @NumSeats tinyint, @PickUpTime smalldatetime, @ShuttleReservationStatus char(1), @PassID smallint, @AirportID smallint, @DriverID smallint, @ShuttleID smallint, @HotelID smallint, @ArrivalTime smalldatetime
- o No outputs

- **Sp_CreateShuttleReservation**
    - o Creates a shuttle reservation for the passenger
    - o Input Parameters:
        - NumSeatsRequested, PickUpTime, ShuttleReservationStatus (make default 'A'), and PassID
    - o Output Parameters:
        - Return the ShuttleReservationID using @@Identity and use this as a nested procedure within sp_CreateShuttleTrip

- **Sp_UpdateShuttleReservation**
    - o Updates atleast one value including NumSeatsRequested, PickUpTime, or ShuttleReservationStatus. It only requires one of these values to and can receive null values for the others.
    - o Input Parameters:
        - @ShuttleReservationID smallint, @NumSeats smallint, @PickUpTime smalldatetime, @ShuttleReservationStatus char(1))
            - Atleast one value is required to be altered along with the required ShuttleReservationID
    - o No outputs

- **Sp_GetFolioID**
    - o Gets the folioID from the FARMS database using the passenger name that has already been checked and the pickup date to look for a reservation that is a day between a day before or day after. This will be used by the trigger that adds bills to the passengers folio on the FARMS database
    - o Input Parameters:

- ▪ @PassFirst varchar(20), @PassLast varchar(20), @PickUpTime smalldatetime
  - o Output Parameters:
    - ▪ @FolioID smallint

Part D (UDFs)

- Dbo.TodaysPassengerList
  - o This will pass in a date, and it will return a varchar showing the Names and ShuttleID and contact info for the passengers that date. It will also have a cursor that goes through and totals the number of passengers for each shuttle. It will check to make sure that a valid date is passed in and if there are no trips for that day then a message will be sent back instead.
  - o Input Parameter:
    - ▪ @TodaysDate
  - o Returns:
    - ▪ A formatted varchar with the shuttleID and TodaysDate with the PassFirst, PassLast, PassPhone, and AirportName.
      - • Underneath it it will have the sum of the passengers for each shuttle
  - o Accomplishes Business Rule 5a
- Dbo.CheckRemainingSeats
  - o Pass in a shuttle id and a date and it will return a varchar 'Seats Remaining: " + the number of seats remaining. It will use a cursor to sum the number of passengers compared to the capacity of the shuttle.
  - o Input Parameters:
    - ▪ ShuttleID smallint, TodaysDate smalldatetime
  - o Output Parameters:
    - ▪ Varchar message formatted with the number of passengers included
- Dbo.NumShuttleTrips

- o Cursors through the shuttleID passed in and checks the overall number of trips that it has gone on. It returns a table with all the shuttle info and the number of trips it has gone on.
- o Input Parameters:
  - ShuttleID smallint
- o Output Parameters:
  - Table with (ShuttleID smallint, ShuttleVin varchar(17), ShuttleLicensePlateNum varchar(7), CountTrips smallint)
- Dbo.AvailableShuttles
  - o Returns a table of shuttles that are available for shuttle trips
  - o Input Parameters:
    - ShuttleID
  - o Output Parameters:
    - Table of (ShuttleID smallint, ShuttleComment varchar(200))

3. Other Scripts

Creation Script

Bulk Insert

Demo Script