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Wash Co.

Wash Co., a new pet grooming company, is located to the east of Santa Clara University in Santa Clara, California. The company has just recently opened this location and are trying to set a database to help manage time, resources, and customers.

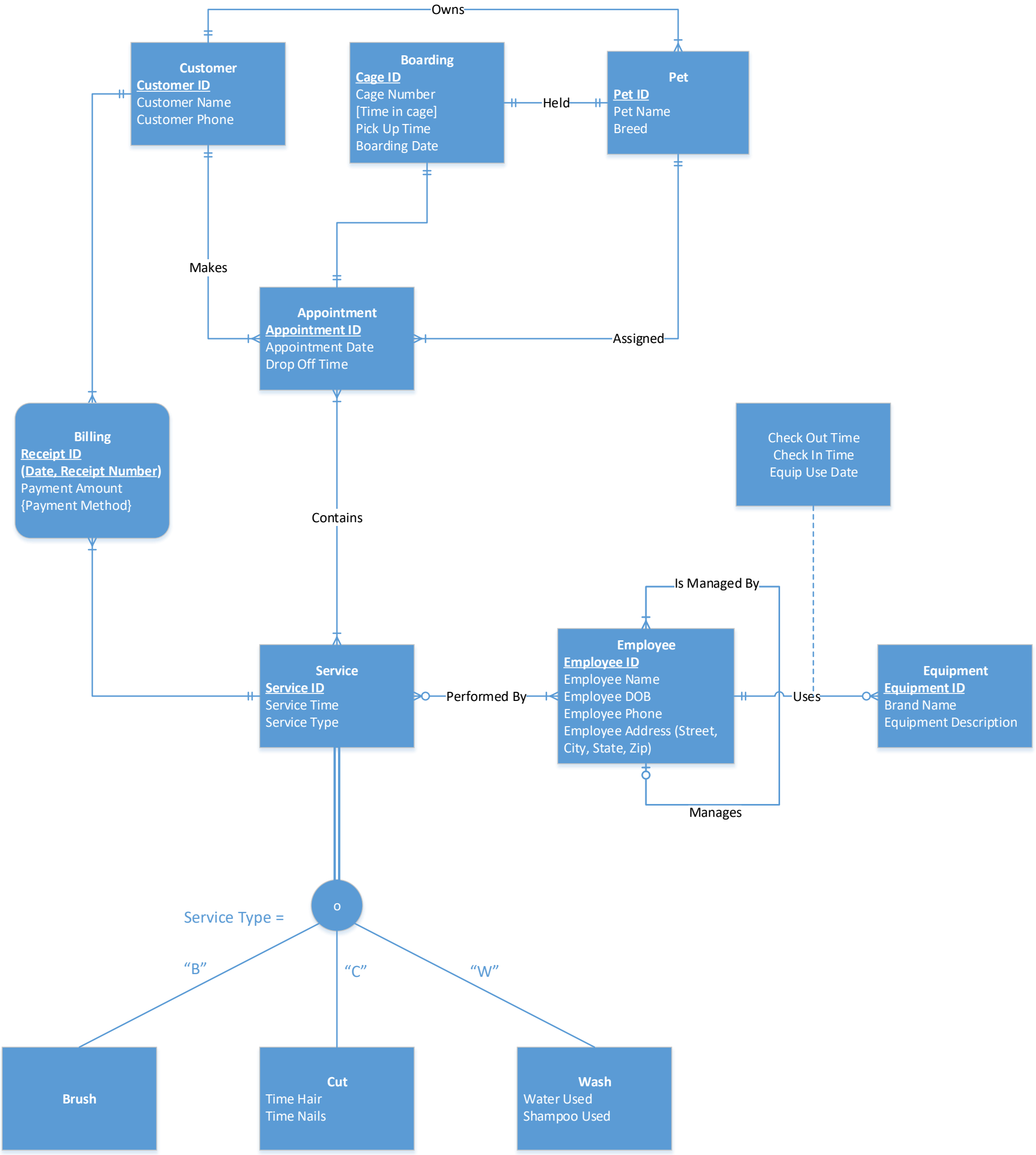
For every customer that requests pet grooming, their name and phone number are added under a unique customer ID and information about their pet is also recorded. Each customer can have multiple pets, which are separately identified by their pet ID, the pet's name and breed are also stored for reference. The database will store information from each grooming session ranging from the services used and billing.

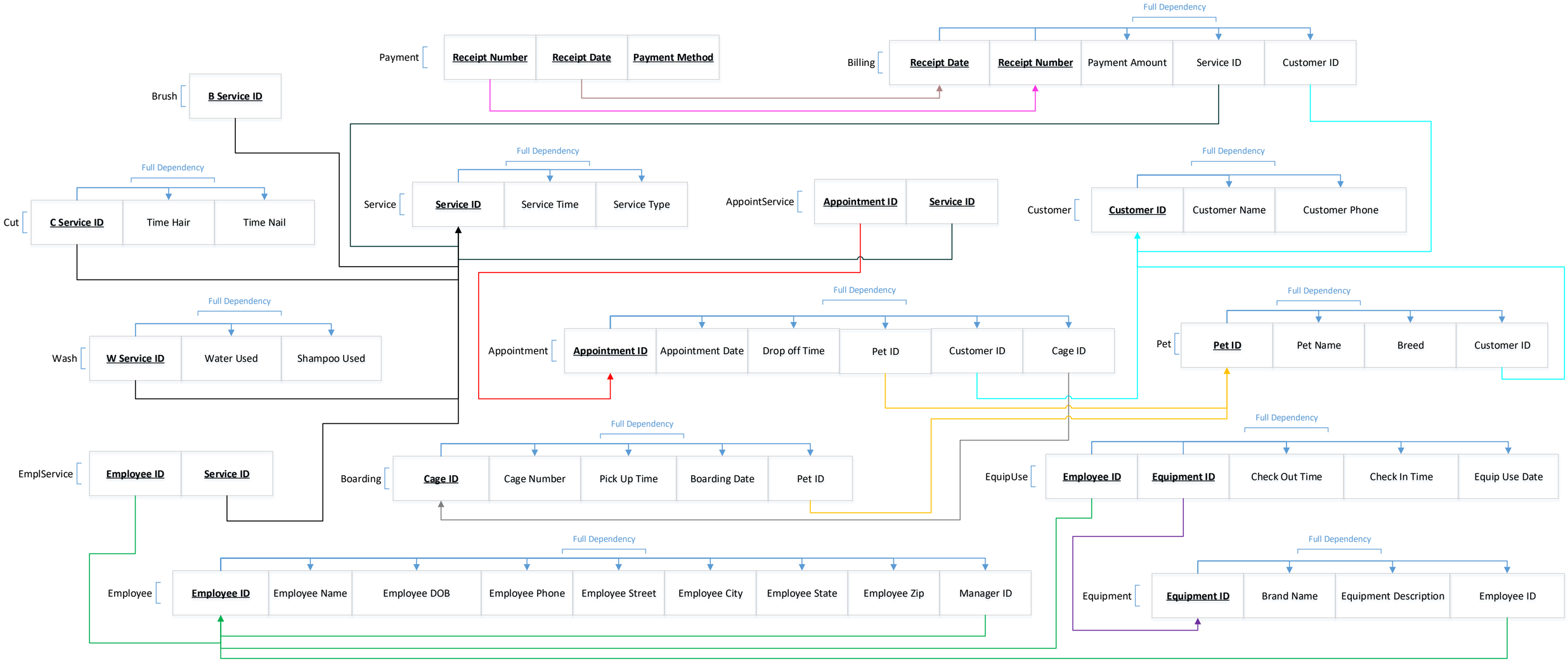
In order to have a pet groomed, the owner needs to call and give the desired date and drop-off time to schedule an appointment. When the owner makes an appointment for their pet, a unique appointment ID will be recorded in the database. During this call, the customer will automatically be presented with 3 grooming services (bathing, cutting, and/or brushing) which they can select. These different services range in time and equipment used, so it is important for the database to keep track of the time an employee spends on the service to ensure maximum efficiency.

In the event that a customer requests their pet to be bathed, the database needs to keep track of the resources used during bathing - consisting of the water and shampoo/conditioner used on the dog. After bathing, the pet must be dried to ensure their fur does not become matted, so the employee must record the date used, check out, and return times for the equipment used and begin the other services if requested. Similarly, employees who provide the cutting or brushing services must record the date, check out, and return times for equipment used such as clippers, towels, and/or brushes. Each piece of equipment has a unique identification number and its brand name along with description are recorded in the database to ensure they are not misplaced or lost.

After a pet is groomed, they are put into a cage to wait for their owner which was assigned when the appointment was made, and the time they spend in the cage is recorded. Each pet is assigned to a specific cage that is identified by a cage number but multiple pets could have used the same cage so a cage identification number is also necessary to record. Once the customer comes to pick their pet up, they are billed for the performed services. The database will record the receipt identification, date, receipt number, payment amount, and desired payment method.

When an employee at Wash Co. is hired, they are given a unique employee ID which is associated with their name, date of birth, and phone number, and full address in the database. To make sure that everyone knows what they are supposed to be doing, some employees have - or are - managers to keep them on track. All employees are capable of performing the three services Wash Co. offers, and one employee will complete all assigned services; however, if the pet is rowdy then multiple employees may be needed to perform the services.


Owns
Customer
Customer ID
Customer Name
Customer Phone
Boarding
Cage ID
Cage Number
[Time in cage]
Pick Up Time
Boarding Date
Held
Pet
Pet ID
Pet Name
Breed
Makes
Appointment
Appointment ID
Appointment Date
Drop Off Time
Assigned
Billing
Receipt ID
(Date, Receipt Number)
Payment Amount
{Payment Method}
Contains
Check Out Time
Check In Time
Equip Use Date
Is Managed By
Service
Service ID
Service Time
Service Type
Performed By
Employee
Employee ID
Employee Name
Employee DOB
Employee Phone
Employee Address (Street, City, State, Zip)
Uses
Equipment
Equipment ID
Brand Name
Equipment Description
Manages
o
Service Type =
"B"
"C"
"W"
Brush
Cut
Time Hair
Time Nails
Wash
Water Used
Shampoo Used


Payment
Receipt Number
Receipt Date
Payment Method
Full Dependency
Billing
Receipt Date
Receipt Number
Payment Amount
Service ID
Customer ID
Brush
B Service ID
Full Dependency
Cut
C Service ID
Time Hair
Time Nail
Full Dependency
Service
Service ID
Service Time
Service Type
AppointService
Appointment ID
Service ID
Full Dependency
Customer
Customer ID
Customer Name
Customer Phone
Full Dependency
Wash
W Service ID
Water Used
Shampoo Used
Full Dependency
Appointment
Appointment ID
Appointment Date
Drop off Time
Pet ID
Customer ID
Cage ID
Full Dependency
Pet
Pet ID
Pet Name
Breed
Customer ID
Full Dependency
EmplService
Employee ID
Service ID
Boarding
Cage ID
Cage Number
Pick Up Time
Boarding Date
Pet ID
Full Dependency
EquipUse
Employee ID
Equipment ID
Check Out Time
Check In Time
Equip Use Date
Full Dependency
Employee
Employee ID
Employee Name
Employee DOB
Employee Phone
Employee Street
Employee City
Employee State
Employee Zip
Manager ID
Full Dependency
Equipment
Equipment ID
Brand Name
Equipment Description
Employee ID

Wash Co.
Data Dictionary

Customer

Name	Data Type	Constraints	Key	Description	Example Value
Customer ID	numeric(11,0)	>0	PK	Unique identifier for a customer	12345
Customer Name	varchar(25)			First and last name of a customer	John Smith
Customer Phone	varchar(14)			Phone number of a customer	(123) 123-1234

Pet

Name	Data Type	Constraints	Key	Description	Example Value
Pet ID	numeric(11,0)	>0	PK	Unique identifier for a pet	12345
Pet Name	varchar(25)			Name of a pet	Spot
Breed	varchar(25)			Breed of a pet	Poodle
Customer ID	numeric(11,0)	>0	FK	Owner of a pet; unique identifier for a customer	12345

Boarding

Name	Data Type	Constraints	Key	Description	Example Value
Cage ID	numeric(11,0)	>0	PK	Unique identifier for a cage	12345
Cage Number	numeric(11,0)	>0		Number for a cage in the facility	12345
Pick Up Time	time(0)			Time pet was picked up after services were completed	12:30
Boarding Date	date			Day pet was put in cage	11/15/2020
Pet ID	numeric(11,0)	>0	FK	Pet in cage; unique identifer for a pet	12345

Appointment

Name	Data Type	Constraints	Key	Description	Example Value
Appointment ID	numeric(11,0)	>0	PK	Unique identifier for an appointment	12345
Appointment Date	date			Date of the appointment	11/15/2020
Drop Off Time	time(0)			Agreed upon drop off time for pet	12:30
Pet ID	numeric(11,0)	>0	FK	Pet appointment is made for; unique identifier for a pet	12345
Customer ID	numeric(11,0)	>0	FK	Customer who made the appointmnet; unique identifier for a customer	12345
Cage ID	numeric(11,0)	>0	FK	Cage assigned to an appointment; unique identifier for a cage	12345

Service

Name	Data Type	Constraints	Key	Description	Example Value
Service ID	numeric(11,0)	>0	PK	Unique identifier for service	12345
Service Time	int	>0		How long the service is performed for (measured in minutes)	30
Service Type	varchar(25)			Type of service performed	Wash

Employee

Name	Data Type	Constraints	Key	Description	Example Value
Employee ID	numeric(11,0)	>0	PK	Unique identifier for an employee	12345
Employee Name	varchar(25)			First and last name of an employee	John Smith
Employee DOB	date			An employee's date of birth	11/15/2020
Employee Phone	varchar(14)			Phone number of an employee	(123) 123-1234
Employee Street	varchar(30)			Street an employee lives on	123 4th Street
Employee City	varchar(25)			City an employee lives in	Santa Clara
Employee State	char(2)			State an employee lives in	CA
Employee Zip	numeric(5)	>0		Zip code an employee lives in	12345
Manager ID	numeric(11,0)	>0	FK	Unique identifier for a manager	12345

Equipment

Name	Data Type	Constraints	Key	Description	Example Value
Equipment ID	numeric(11,0)	>0	PK	Unique identifier for a piece of equipment	12345
Brand Name	varchar(25)			Brand name of the equipment	Brand A
Equipment Description	varchar(25)			Description of the equipment	Brush
Employee ID	numeric(11,0)	>0	FK	Employee who used equipment; unique identifier for an employee	12345

Billing

Name	Data Type	Constraints	Key	Description	Example Value
Receipt Date	date		PK	Date receipt was created; unique identifier for receipt	11/15/2020
Receipt Number	numeric(11,0)	>0	PK	Number of the receipt; unique identifier for a receipt	12345
Payment Amount	numeric(11,0)	>0		Amount paid in the receipt	12345
Service ID	numeric(11,0)	>0	FK	Service paid for in a receipt; unique identifier for a service	12345
Customer ID	numeric(11,0)	>0	FK	Customer paying for a receipt; unique identifier for a customer	12345

Brush

Name	Data Type	Constraints	Key	Description	Example Value
B Service ID	numeric(11,0)	>0	PK, FK	Unique identifier for brushing service	12345

Cut

Name	Data Type	Constraints	Key	Description	Example Value
C Service ID	numeric(11,0)	>0	PK, FK	Unique identifier for cutting service	12345
Time Hair	int	>0		Time taken to perform hair cutting service (measured in minutes)	30
Time Nails	int	>0		Time taken to perform nail cutting service (measured in minutes)	30

Wash

Name	Data Type	Constraints	Key	Description	Example Value
W Service ID	numeric(11,0)	>0	PK, FK	Unique identifier for washing service	12345
Water Used	varchar(10)			How much water was used during wash service	7 gallons
Shampoo Used	varchar(10)			How much shampoo was used during wash service	4 ounces

Payment

Name	Data Type	Constraints	Key	Description	Example Value
Receipt Number	numeric(11,0)	>0	PK, FK	Receipt the payment method was used for; unique identifier for a receipt	12345
Payment Method	char(11)		PK	Payment method chosen for a receipt	Cash
Receipt Date	date		PK, FK	Date the receipt was paid for; unique identifier for a receipt date	11/15/2020

EquipUse

Name	Data Type	Constraints	Key	Description	Example Value
Employee ID	numeric(11,0)	>0	PK,FK	Employee who uses an equipment; unique identifier for an employee	12345
Equipment ID	numeric(11,0)	>0	PK, FK	Equipment an employee uses; unique identifier for equipment	12345
Check Out Time	time(0)			Time the equipment was checked out for use	12:30
Check In Time	time(0)			Time the equipment was returned	12:30
Equipment Use Date	date			Date a piece of equipment was used	11/15/2020

EmplService

Name	Data Type	Constraints	Key	Description	Example Value
Employee ID	numeric(11,0)	>0	PK, FK	Employee who performs a service; unique identifier for employee	12345
Service ID	numeric(11,0)	>0	PK, FK	Service completed by an employee; unique identifier for a service	12345

AppointService

Name	Data Type	Constraints	Key	Description	Example Value
Appointment ID	numeric(11,0)	>0	PK, FK	Appointment a service is performed in; unique identifier for an appointment	12345
Service ID	numeric(11,0)	>0	PK, FK	Service included in an appointment; unique identifier for a service	12345

Creating Tables:

```
-- Create Customer Table
CREATE TABLE Customer_T
        (CustomerID         NUMERIC(11,0)     NOT NULL,
        CustomerName        VARCHAR(25)       NOT NULL,
        CustomerPhone       VARCHAR(14)       NOT NULL,
CONSTRAINT Customer_PK PRIMARY KEY (CustomerID));

-- Create Pet Table
CREATE TABLE Pet_T
        (PetID          NUMERIC(11,0)           NOT NULL,
        PetName         VARCHAR(25)             NOT NULL,
        Breed           VARCHAR(25),
        CustomerID      NUMERIC(11,0)           NOT NULL,
CONSTRAINT Pet_PK PRIMARY KEY (PetID),
CONSTRAINT Pet_FK1 FOREIGN KEY (CustomerID) REFERENCES
Customer_T(CustomerID));

-- Create Boarding Table
CREATE TABLE Boarding_T
        (CageID                 NUMERIC(11,0)     NOT NULL,
        CageNumber              NUMERIC(11,0)     NOT NULL,
        PickUpTime              TIME(0)           NOT NULL,
        BoardingDate            DATE              NOT NULL,
        PetID                   NUMERIC(11,0)     NOT NULL,
CONSTRAINT Boarding_PK PRIMARY KEY (CageID),
CONSTRAINT Boarding_FK1 FOREIGN KEY (PetID) REFERENCES Pet_T(PetID));

-- Create Appointment Table
CREATE TABLE Appointment_T
        (AppointmentID          NUMERIC(11,0)     NOT NULL,
        AppointmentDate         DATE              NOT NULL,
        DropOffTime             TIME(0),
        PetID                   NUMERIC(11,0)     NOT NULL,
        CustomerID              NUMERIC(11,0)     NOT NULL,
        CageID                  NUMERIC(11,0)     NOT NULL,
CONSTRAINT Appointment_PK  PRIMARY KEY (AppointmentID),
CONSTRAINT Appointment_FK1  FOREIGN KEY (PetID)  REFERENCES Pet_T(PetID),
```

```
CONSTRAINT Appoitnment_FK2  FOREIGN KEY (CustomerID)  REFERENCES
Customer_T(CustomerID),
CONSTRAINT Appointment_FK3 FOREIGN KEY (CageID)  REFERENCES
Boarding_T(CageID));

-- Create Service Table
CREATE TABLE Service_T
        (ServiceID              NUMERIC(11,0)       NOT NULL,
        ServiceTime             INT,
        ServiceType             VARCHAR(25),
CONSTRAINT Service_PK  PRIMARY KEY (ServiceID));

-- Create Employee Table
CREATE TABLE Employee_T
        (EmployeeID             NUMERIC(11,0)       NOT NULL,
        EmployeeName            VARCHAR(25)         NOT NULL,
        EmployeeDOB             DATE,
        EmployeePhone           VARCHAR(14)         NOT NULL,
        EmployeeStreet          VARCHAR(30),
        EmployeeCity            VARCHAR(25),
        EmployeeState           CHAR(2),
        EmployeeZip             NUMERIC(5),
        ManagerID               NUMERIC(11,0),
CONSTRAINT Employee_PK  PRIMARY KEY (EmployeeID),
CONSTRAINT Employee_FK          FOREIGN KEY (ManagerID) REFERENCES
Employee_T(EmployeeID));

-- Create Equipment Table
CREATE TABLE Equipment_T
        (EquipmentID                NUMERIC(11,0)               NOT NULL,
        BrandName                   VARCHAR(25),
        EquipmentDescription        VARCHAR(25),
        EmployeeID                  NUMERIC(11,0)               NOT NULL,
CONSTRAINT Equipment_PK  PRIMARY KEY (EquipmentID),
CONSTRAINT Equipment_FK1  FOREIGN KEY (EmployeeID)  REFERENCES
Employee_T(EmployeeID));

-- Create Billing Table
CREATE TABLE Billing_T
        (ReceiptDate            DATE                    NOT NULL,
```

```
        ReceiptNumber       NUMERIC(11,0)       NOT NULL,
        PaymentAmount       NUMERIC(11,0)       NOT NULL,
        ServiceID           NUMERIC(11,0)       NOT NULL,
        CustomerID          NUMERIC(11,0)       NOT NULL,
CONSTRAINT Billing_PK  PRIMARY KEY (ReceiptDate, ReceiptNumber),
CONSTRAINT Billing_FK1  FOREIGN KEY (ServiceID)  REFERENCES
Service_T(ServiceID),
CONSTRAINT Billing_FK2  FOREIGN KEY (CustomerID)  REFERENCES
Customer_T(CustomerID));

-- Create Brush Table
CREATE TABLE Brush_T
        (BServiceID         NUMERIC(11,0)       NOT NULL,
CONSTRAINT Brush_PK  PRIMARY KEY (BServiceID),
CONSTRAINT Brush_FK1  FOREIGN KEY (BServiceID) REFERENCES
Service_T(ServiceID));

-- Create Cut Table
CREATE TABLE Cut_T
        (CServiceID         NUMERIC(11,0)       NOT NULL,
        TimeHair            INT,
        TimeNails           INT,
CONSTRAINT Cut_PK  PRIMARY KEY (CServiceID),
CONSTRAINT Cut_FK1  FOREIGN KEY (CServiceID)  REFERENCES
Service_T(ServiceID));

-- Create Wash Table
CREATE TABLE Wash_T
        (WServiceID         NUMERIC(11,0)       NOT NULL,
        WaterUsed           VARCHAR(10),
        ShampooUsed         VARCHAR(10),
CONSTRAINT Wash_PK PRIMARY KEY (WServiceID),
CONSTRAINT Wash_FK1  FOREIGN KEY (WServiceID)  REFERENCES
Service_T(ServiceID));

-- Create Payment Table
CREATE TABLE Payment_T
        (ReceiptNumber          NUMERIC(11,0)       NOT NULL,
        PaymentMethod           CHAR(11)            NOT NULL,
        ReceiptDate             DATE                NOT NULL,
```

```
CONSTRAINT Payment_PK PRIMARY KEY (ReceiptNumber, ReceiptDate, PaymentMethod),
CONSTRAINT Payment_FK1 FOREIGN KEY (ReceiptDate, ReceiptNumber) REFERENCES
Billing_T(ReceiptDate, ReceiptNumber));

-- Create Equipment Use Table
CREATE TABLE EquipUse_T
        (EmployeeID         NUMERIC(11,0)       NOT NULL,
        EquipmentID         NUMERIC(11,0)       NOT NULL,
        CheckOutTime        TIME(0),
        CheckInTime         TIME(0),
        EquipUseDate        DATE,
CONSTRAINT EquipUse_PK PRIMARY KEY (EmployeeID, EquipmentID),
CONSTRAINT EquipUse_FK1 FOREIGN KEY (EmployeeID)  REFERENCES
Employee_T(EmployeeID),
CONSTRAINT EquipUse_FK2 FOREIGN KEY (EquipmentID)  REFERENCES
Equipment_T(EquipmentID));

-- Create Employee Service Table
CREATE TABLE EmplService_T
        (EmployeeID         NUMERIC(11,0)       NOT NULL,
        ServiceID           NUMERIC(11,0)       NOT NULL,
CONSTRAINT EmplService_PK PRIMARY KEY (EmployeeID, ServiceID),
CONSTRAINT EmplService_FK1 FOREIGN KEY (EmployeeID)  REFERENCES
Employee_T(EmployeeID),
CONSTRAINT EmplService_FK2 FOREIGN KEY (ServiceID)  REFERENCES
Service_T(ServiceID));

-- Create Appointment Service Table
CREATE TABLE AppointService_T
        (AppointmentID      NUMERIC(11,0)       NOT NULL,
        ServiceID           NUMERIC(11,0)       NOT NULL,
CONSTRAINT AppointService_PK PRIMARY KEY (AppointmentID, ServiceID),
CONSTRAINT AppointService_FK1 FOREIGN KEY (AppointmentID)  REFERENCES
Appointment_T(AppointmentID),
CONSTRAINT AppointService_FK2 FOREIGN KEY (ServiceID)  REFERENCES
Service_T(ServiceID));
```

External Views:

-- View 1: Displaying all breeds that have been recorded in the database, and the amount of appointments for each breed. This gives a sorted view of the total of each breed that showed up to understand our customers better to either cater more toward them and/or expand to attract other customers if the lesser breeds.

```
GO
CREATE VIEW Breed_V AS
        SELECT Breed, COUNT(CustomerID) AS NumOfBreeds
        FROM Pet_T
        GROUP BY Breed
        HAVING COUNT(CustomerID) > 0
        GO

SELECT * FROM Breed_V ORDER BY NumOfBreeds DESC
```

-- View 2: Looking at how long each pet spends in the cage (in hours). Keeping track of the time that a pet spends in a cage after their grooming service helps the company evaluate the number of cages needed. This would allow the company to understand the number of cages they should have available based on different trends like the time of year.

```
GO
CREATE VIEW Time_In_Cage AS
        SELECT Appointment_T.PetID, DropOffTime,
        DATEADD(minute,ServiceTime,DropOffTime) AS TimePutInCage, DATEDIFF(hour,
        (DATEADD(minute,ServiceTime,DropOffTime)), PickUpTime) AS TimeInCage_Hrs,
        PickUpTime
        FROM Boarding_T, Appointment_T, AppointService_T, Service_T
        WHERE Boarding_T.PetID = Appointment_T.PetID
                AND Appointment_T.AppointmentID = AppointService_T.AppointmentID
                AND AppointService_T.ServiceID = Service_T.ServiceID
                GO

SELECT * FROM Time_In_Cage
```

-- View 3: How long has each employee used a piece of equipment for? This information could be helpful for the company in determining which pieces of equipment they should purchase more (or less) of, based on how long each piece is used for, along with which employees perform certain tasks based on the type of equipment checked out.

```
GO
CREATE VIEW Employee_Time_Used AS
        SELECT Employee_T.EmployeeName, EquipmentDescription, CheckOutTime,
        DATEDIFF(minute, CheckOutTime, CheckInTime) AS TimeUsed_Min, CheckInTime
        FROM Employee_T INNER JOIN EquipUse_T ON Employee_T.EmployeeID =
        EquipUse_T.EmployeeID, Equipment_T
        WHERE Equipment_T.EquipmentID = EquipUse_T.EquipmentID
        GO

SELECT * FROM Employee_Time_Used

-- View 4: Who are the customers that have spent the most at Wash Co? Ordered by payment
amount descending. We wanted to identify the customers who have spent the most money (i.e.
the customers who choose all three grooming options). Identifying the customers who spend the
most would help the company identify their most valued customers.

GO
CREATE VIEW Profitable_Customers AS
        SELECT Customer_T.CustomerID, CustomerName, PaymentAmount
        FROM Customer_T INNER JOIN Billing_T ON Customer_T.CustomerID =
        Billing_T.CustomerID
        WHERE PaymentAmount >= 60
        GO

SELECT * FROM Profitable_Customers ORDER BY PaymentAmount DESC
```