

Memo: # 1 (Bike and Electric Auto Rental)**DBDS** DataBase Design Specialists, Inc.

"We are always 5NF."

To: Hampshire, Jason, NN:15, DA
From: Design Team Leader
Subject: Enterprise overview
Date: October 11, 2021

The basis of the BEAR project is the rental process for bicycles and electric automobiles. The goal is to keep track of the vehicles (bikes and autos) that renters rent from various sites. For the initial design the renter is required to return the vehicle to the site from which it was rented.

Interviews were conducted with BEAR personnel, including Bob Bureaucrat, and Sam Supervisor (Suburban Site manager) and other site managers. Excerpts from those interviews are listed below:

- Question** - How do you identify a specific vehicle?
Sam Supervisor - We give each vehicle a number, we call it VNumber, to help us keep track of that specific vehicle.
- Question** - How many sites are used in the research studies?
Bob Bureaucrat - There are 3. But we currently have a proposal under consideration to expand the scope of the project.
- Question** - What vehicles are available at the Suburban Site?
Sam Supervisor - Right now we rent both bikes and electric cars.
- Question** - What kinds of vehicles are at the Downtown Site?
Bob Bureaucrat - Bikes
Mary Manager - Yes, right now we have only bicycles, but we are looking for parking for cars.
- Question** - What kinds of vehicles are at the Airport Site?
Fred Foreman - We have only electric cars. It is not safe to ride bikes around the airport.
- Question** - What does the sample data look like?
Sam Supervisor - I do know that the rental rate structure at our site is very different for bikes (hourly rate with a maximum charge) and cars (a base rate plus a charge for every minute you have the car).
Bob Bureaucrat - I don't know the details, but I can have the staff look it up for you if you'd like.
- ... time passes ...
- Bob Bureaucrat** - The back of this page has example data to be used for this project.

#	RenterID	DOB	VNumber	License	StartTime	EndTime	PurchaseDate	Status	#Rents	SiteID	Address	Type	Size	Type	HourRate	MaxCharge
1	1	1995-01-02	B0001	IN24340020	2020-12-10 10:30	2020-12-10 12:30	Aug 2020	R	3	SS	233 Main St.	B	26	R	8.00	56.00
2	1	1995-01-02	B0011	IN24340020	2020-12-16 09:30	2020-12-16 12:30	Oct 2020	A	2	DS	233 Main St.	B	26	R	8.00	56.00
3	3	2000-10-04	B0001	IN67800000	2020-12-11 10:00	2020-12-11 16:00	Aug 2020	R	3	SS	444 W State.	B	26	R	8.00	56.00
4	4	1997-06-06	B0001	KY44230100	2020-12-16 10:30	2020-12-16 18:30	Aug 2020	R	3	SS	PO Box 2388.	B	26	R	8.00	56.00
5	8	1995-04-12	B0003	IN24500001	2020-12-16 09:30	2020-12-16 12:30	Aug 2020	A	1	SS	42 Blvd Pl	B	24	R	6.00	43.00
6	8	1995-04-12	T0002	IN24500001	2020-12-19 10:30	2020-12-19 12:30	Aug 2020	A	4	SS	42 Blvd Pl	B	26	T	10.00	70.00
7	9	1997-06-06	B0011	TX99923411	2020-12-10 10:30	2020-12-10 12:30	Oct 2020	A	2	DS	888 Tudor Dr	B	26	R	8.00	56.00
#	RenterID	DOB	VNumber	License	StartTime	EndTime	PurchaseDate	Status	#Rents	SiteID	Address	Type	VIN	Miles	BaseRate	MinuteRate
8	1	1995-01-02	E0012	IN24340020	2020-11-26 09:30	2020-11-26 18:30	Sep 2020	R	3	AS	233 Main St.	E	EV10000234	2505	9.00	0.40
9	2	1990-11-03	E0012	IN24388033	2020-11-27 10:30	2020-11-27 18:30	Sep 2020	R	3	AS	123 1st St.	E	EV10000234	2505	9.00	0.40
10	2	1990-11-03	E0014	IN24388033	2020-11-26 10:30	2020-11-26 14:30	Sep 2020	R	3	AS	123 1st St.	E	EV10000235	3505	9.00	0.40
11	4	1997-06-06	E0444	KY44230100	2020-11-29 09:30	2020-11-30 09:30	Nov 2020	A	3	SS	PO Box 2388.	E	EV10000500	1200	10.00	0.40
12	8	1995-04-12	E0012	IN24500001	2020-10-14 09:30	2020-10-15 13:30	Sep 2020	R	3	AS	42 Blvd Pl	E	EV10000234	2505	9.00	0.40
13	8	1995-04-12	E0523	IN24500001	2020-12-26 09:30	2021-01-02 18:30	Dec 2020	A	0	SS	42 Blvd Pl	E	EV10000600	500	11.00	0.50
14	9	1997-06-06	E0524	TX99923411	2020-12-29 06:00	2020-12-31 13:00	Dec 2020	M	0	SS	888 Tudor Dr	E	EV10000601	10	11.00	0.50

(The # column is **not part of the data**, only for reference)

Question - What do these abbreviations mean?

Bob Bureaucrat - Here are the code tables we use

Status	Type	Type
R – Rented	B – Bicycle	R – Road
A – Available	E – Electric Vehicle	T – Tandem
M – Maintenance		

SiteID	Name	Location
AS	Airport Site	44 Airport Dr.
DS	Downtown Site	423 Main St.
SS	Suburban Site	22 Center Circle

RenterID	Name
1	Anne Green
2	John Dough
3	Bill Smith
4	Gail White
8	Evan Black
9	Bill Brown

DOB – Date Of Birth of the renter

Question - Why are there two "Types"?

Bob Bureaucrat - One is the type of vehicle, the other the type of bike

Question - What are "Miles"?

Bob Bureaucrat - About once a month we update the miles based on current odometer reading.

Question - How are the charges for the bike and electric vehicle determined?

Bob Bureaucrat - We are reviewing the charge formulas. For now, just use the given data values.