

Rental Service - Camping Car

...

Team Red

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1. Step 1 - Mapping of Regular Entity Types

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CUSTOMER_CREDENTIAL

<u>LOGIN_ID</u>	PASSWORD	LOGIN_TIME	LOGOUT_TIME
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CUSTOMER

<u>LCNS_NO</u>	FNAME	MNAME	LNAME	CUS_PHN	CUS_EML	CUS_ADDR	CUS_AGE	LOGIN_ID
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1. Step 2 - Mapping of Weak Entity Types

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1. Step 3 - Mapping of 1: 1 Relation Types

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CAMP_CAR

<u>CIN</u>	<u>ISSUE_DT</u>	CAR_TP	MANU_DT	DRI_DIS	CAMP_FAC	CAMP_CAP	CAMP_FL	LCNS_RQ	BIN
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CUSTOMER_CREDENTIAL

<u>LOGIN_ID</u>	PASSWORD	LOGIN_TIME	LOGOUT_TIME
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CUSTOMER

<u>LCNS_NO</u>	FNAME	MNAME	LNAME	CUS_PHN	CUS_EML	CUS_ADDR	CUS_AGE	LOGIN_ID
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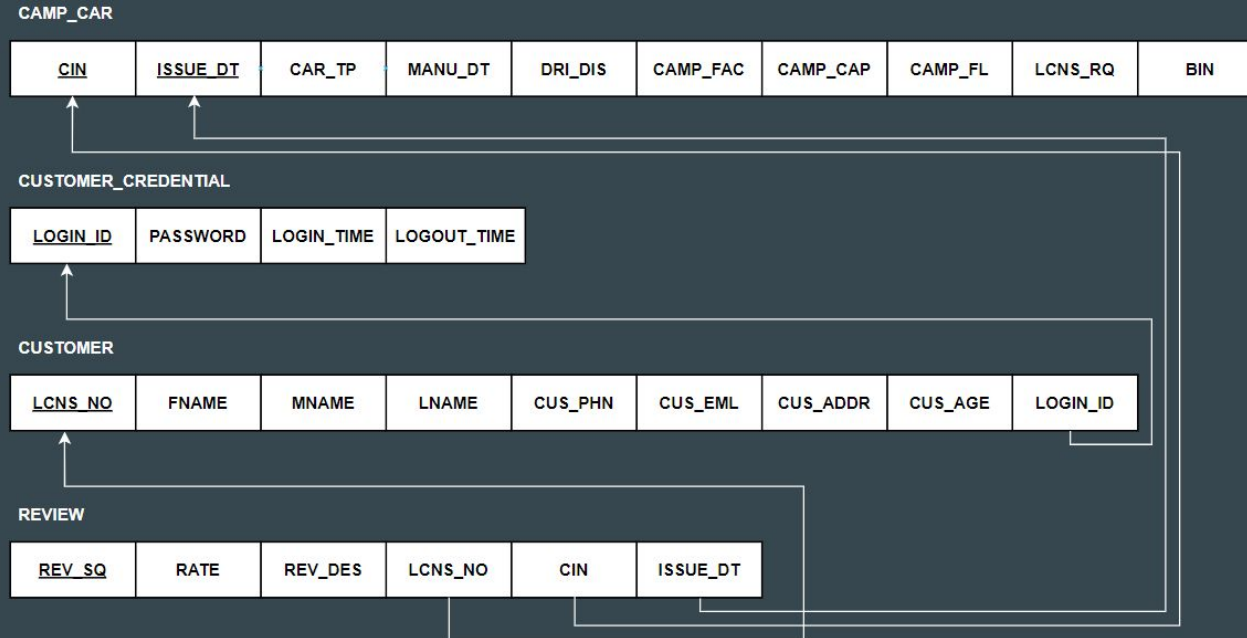
ACCIDENT

<u>AIN</u>	<u>CIN</u>	<u>ISSUE_DT</u>	ACC_DT	ACC_DES	DAMAGE
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1. Step 4 - Mapping of 1: N Relation Types

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1. Step 5 - Mapping of M: N Relation Types

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1. Others

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Mapping of Multivalued Attributes & N-array Relation Types

2. Normalization: Expected anomalies

Expected anomalies

- Camping car: distance driven
- Customer credential: login time, logout time
- Reservation: meter end, penalty amount and pay amount.

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2. Normalization: Unwanted anomaly

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Reservation ID	Start date	End date	...	Payment type	Card number	Card name
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2. Normalization: Resolution

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PAY_TYPE

<u>PAY_TP</u>	PAY_NM
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PAY

<u>PAY_ID</u>	PAY_TP	PAY_AMT	PAY_DT
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3. Physical Schema

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CAMP_CAR

<u>CIN</u>	<u>ISSUE_DT</u>	CAR_TP	MANU_DT	DRI_DIS	CAMP_FAC	CAMP_CAP	CAMP_FL	LCNS_RQ	BIN
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3. Physical Schema

1. Camping Car

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Number	Name	Variable	Type	Size	Primary Key (PK)	Foreign Key (FK)
1	Camping Car ID	CIN	VARCHAR	17	<input checked="" type="checkbox"/>	
2	Issue date	ISSUE_DT	DATE	3	<input checked="" type="checkbox"/>	
3	Car type	CAR_TP	VARCHAR	25		
4	Manufacture date	MANU_DT	DATE	3		
5	Distance Driven	DRI_DIS	INTEGER	4		
6	Facilities	CAMP_FAC	VARCHAR	50		
7	Passenger	CAMP_CAP	INTEGER	4		
8	Availability	CAMP_FL	TINYINT	1		
9	Required License	LCNS_RQ	VARCHAR	10		
10	Branch ID	BIN	VARCHAR	18		<input checked="" type="checkbox"/>

4. DataBase Implementation

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1. Camping Car

Number	Name	Variable	Type	Size	Primary Key (PK)	Foreign Key (FK)
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3	Car type	CAR_TP	VARCHAR	25		
4	Manufacture date	MANU_DT	DATE	3		
5	Distance Driven	DRI_DIS	INTEGER	4		
6	Facilities	CAMP_FAC	VARCHAR	50		
7	Passenger	CAMP_CAP	INTEGER	4		
8	Availability	CAMP_FL	TINYINT	1		
9	Required License	LCNS_RQ	VARCHAR	10		
10	Branch ID	BIN	VARCHAR	18		<input checked="" type="checkbox"/>



```
17 • CREATE TABLE IF NOT EXISTS camp_car (  
18     cin VARCHAR(17) NOT NULL,  
19     issue_dt DATE NOT NULL,  
20     cat_tp VARCHAR(25),  
21     manu_dt DATE,  
22     dri_dis INTEGER,  
23     camp_fac VARCHAR(50),  
24     camp_cap INTEGER,  
25     camp_fl TINYINT(1),  
26     lcns_rq VARCHAR(10),  
27     bin VARCHAR(18) DEFAULT '081690937011420608',  
28     PRIMARY KEY (cin , issue_dt),  
29     FOREIGN KEY (bin)  
30         REFERENCES branch (bin)  
31         ON UPDATE CASCADE  
32 );
```

4. DataBase Implementation

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```
insert into CAMP_CAR values (  
    "V1207012501",  
    "2012-07-01",  
    "Van",  
    "2012-03-09",  
    61000,  
    "Short-trip",  
    2,  
    1,  
    "Type2",  
    "BNY2007-09"  
);
```

4. DataBase Implementation

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Local instance MySQL80
Data Export Advanced Options...

Object Selection Export Progress

Tables to Export

Exp...	Schema	Exp...	Schema Objects
<input type="checkbox"/>	b`b`rental"		
<input type="checkbox"/>	b`rental`		
<input type="checkbox"/>	redcamp		
<input checked="" type="checkbox"/>	rental		
<input type="checkbox"/>	rr		
<input type="checkbox"/>	sakila		
<input type="checkbox"/>	sys		
<input type="checkbox"/>	world		

Refresh Dump Structure and Dat Select Views Select Tables Unselect All

Objects to Export

☐ Dump Stored Procedures and Functions ☐ Dump Events ☐ Dump Triggers

Export Options

☒ Export to Dump Project Folder C:\Users\Whello\Documents\dumps\Dump20220608 ...

Each table will be exported into a separate file. This allows a selective restore, but may be slower.

☐ Export to Self-Contained File C:\Users\Whello\Documents\dumps\Dump20220608.sql ...

All selected database objects will be exported into a single, self-contained file.

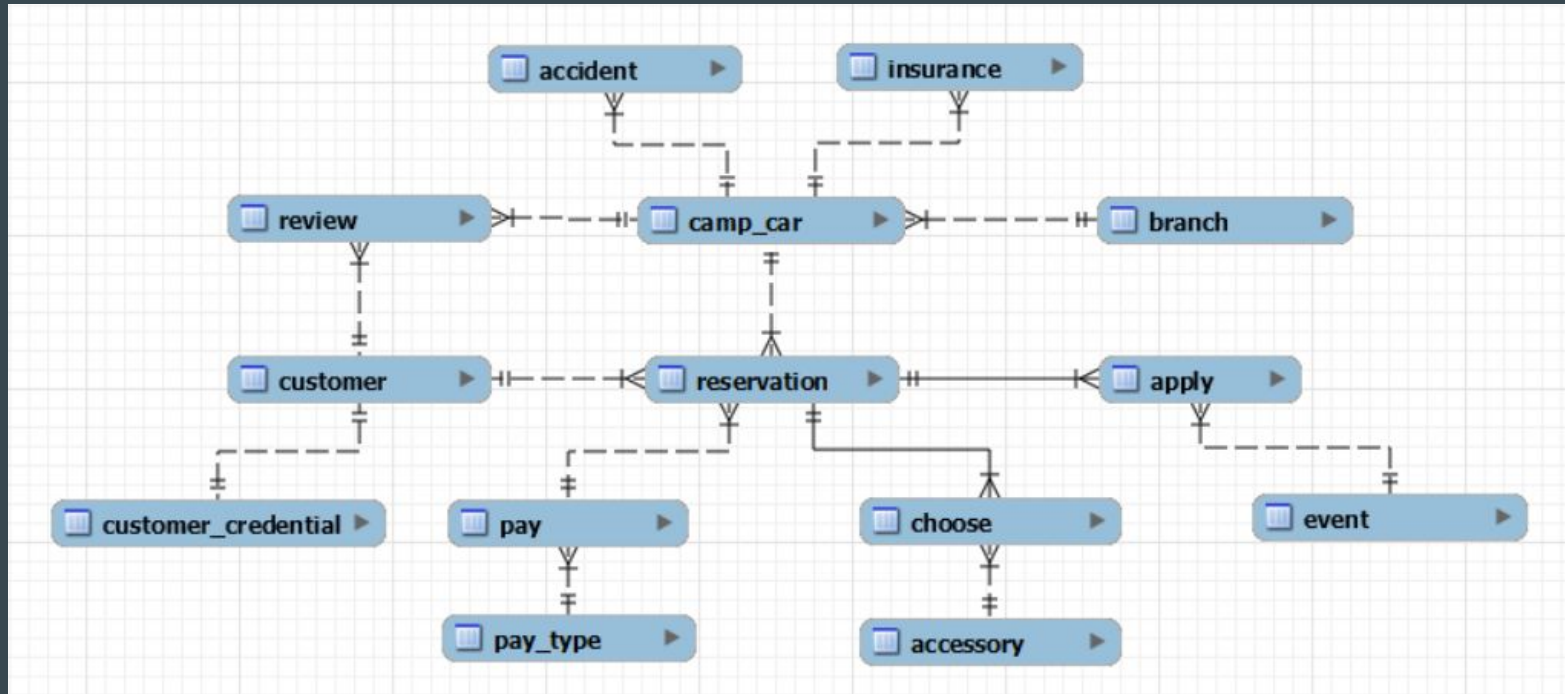
☐ Create Dump in a Single Transaction (self-contained file only) ☐ Include Create Schema

Press [Start Export] to start...

Start Export

4. DataBase Implementation

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5. Conclusion

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Q&A