Rental Service - Camping Car

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Team Red

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CUSTOMER_CREDENTIAL

LOGIN_ID	PASSWORD	LOGIN_TIME	LOGOUT_TIME

CUSTOMER

LCNS_NO	FNAME	MNAME	LNAME	CUS_PHN	CUS_EML	CUS_ADDR	CUS_AGE	LOGIN_ID

1. Step 2 - Mapping of Weak Entity Types

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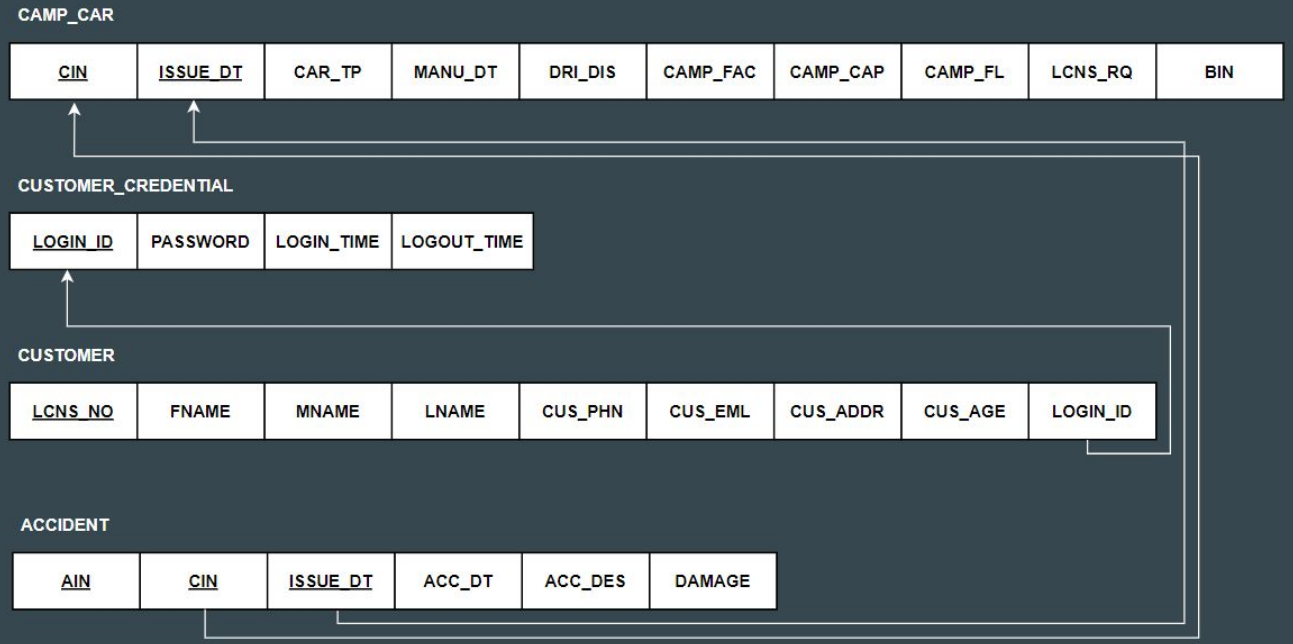
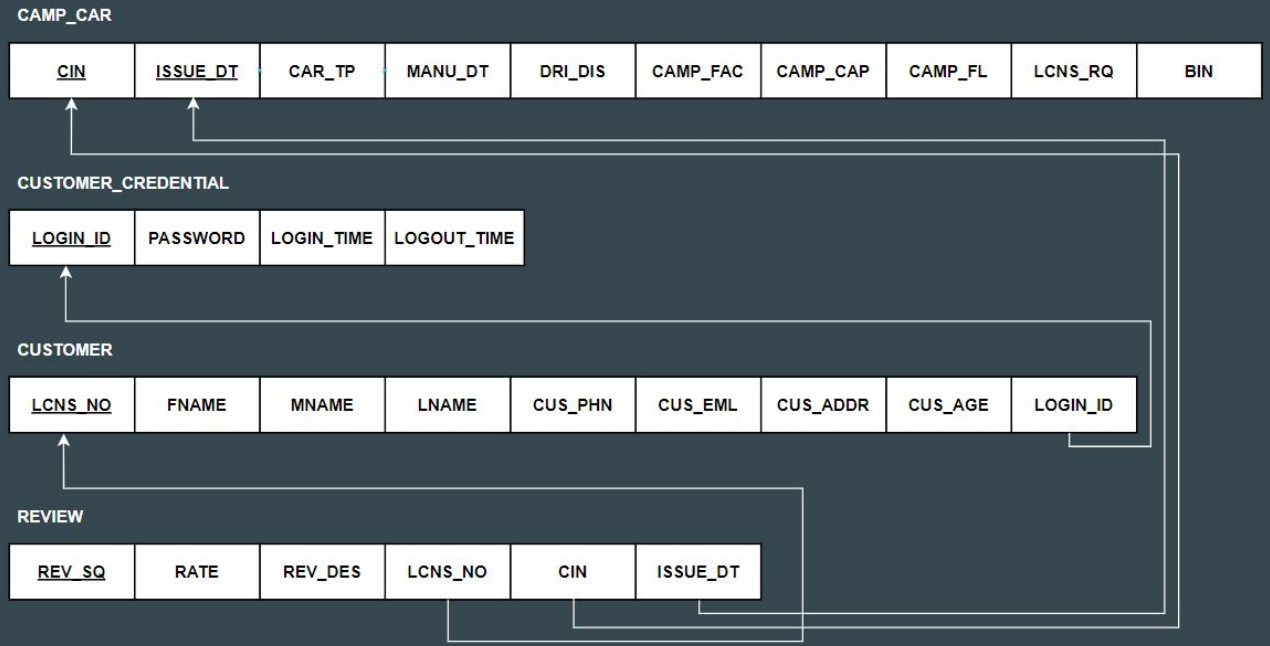
1. Step 3 - Mapping of 1: 1 Relation Types



1. Step 4 - Mapping of 1: N Relation Types



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

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.

2. Normalization: Unwanted anomaly

Reservation ID	Start date	End date	…	Payment type	Card number	Card name

2. Normalization: Resolution

PAY_TYPE

PAY_TP	PAY_NM

PAY

PAY_ID	PAY_TP	PAY_AMT	PAY_DT

3. Physical Schema

CAMP_CAR

CIN	ISSUE_DT	CAR_TP	MANU_DT	DRI_DIS	CAMP_FAC	CAMP_CAP	CAMP_FL	LCNS_RQ	BIN

3. Physical Schema

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1. Camping Car

Number	Name	Variable	Type	Size	Primary Key (PK)	Foreign Key (FK)
1	Camping Car ID	CIN	VARCHAR	17	☑	
2	Issue date	ISSUE_DT	DATE	3	☑	
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		☑

4. DataBase Implementation

1. Camping Car

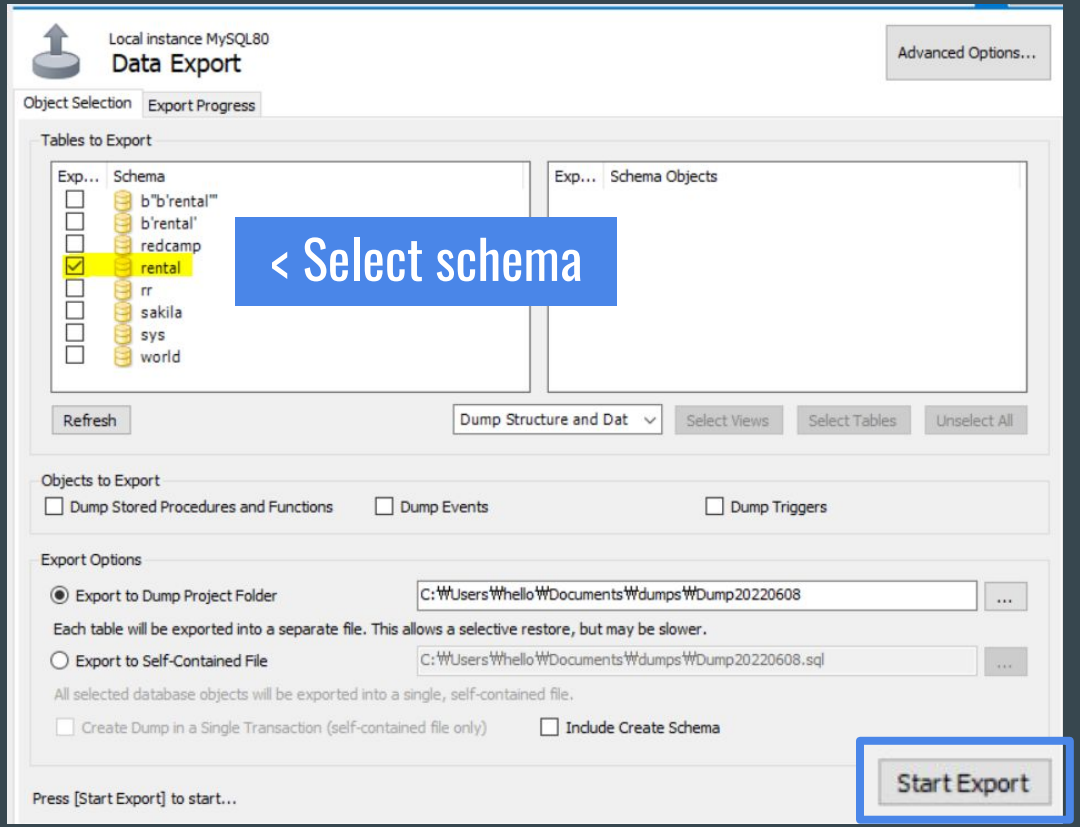
Number	Name	Variable	Type	Size	Primary Key (PK)	Foreign Key (FK)
1	Camping Car ID	CIN	VARCHAR	17	☑	
2	Issue date	ISSUE_DT	DATE	3	☑	
3	Car type	CAR_TP	VARCHAR	25		
4	Manufacture date	MANU_DT	DATE	3		
5	Distance Driven	DRI_DIS	INTEGER	4		
6	Facilities	CAMP_FAC	VARCHAR	50		
7	Passenger	CAMP_CAP	INTEGER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

```
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 '0816909370114206O8',
28      PRIMARY KEY (cin , issue_dt),
29      FOREIGN KEY (bin)
30          REFERENCES branch (bin)
31          ON UPDATE CASCADE
32  );
```

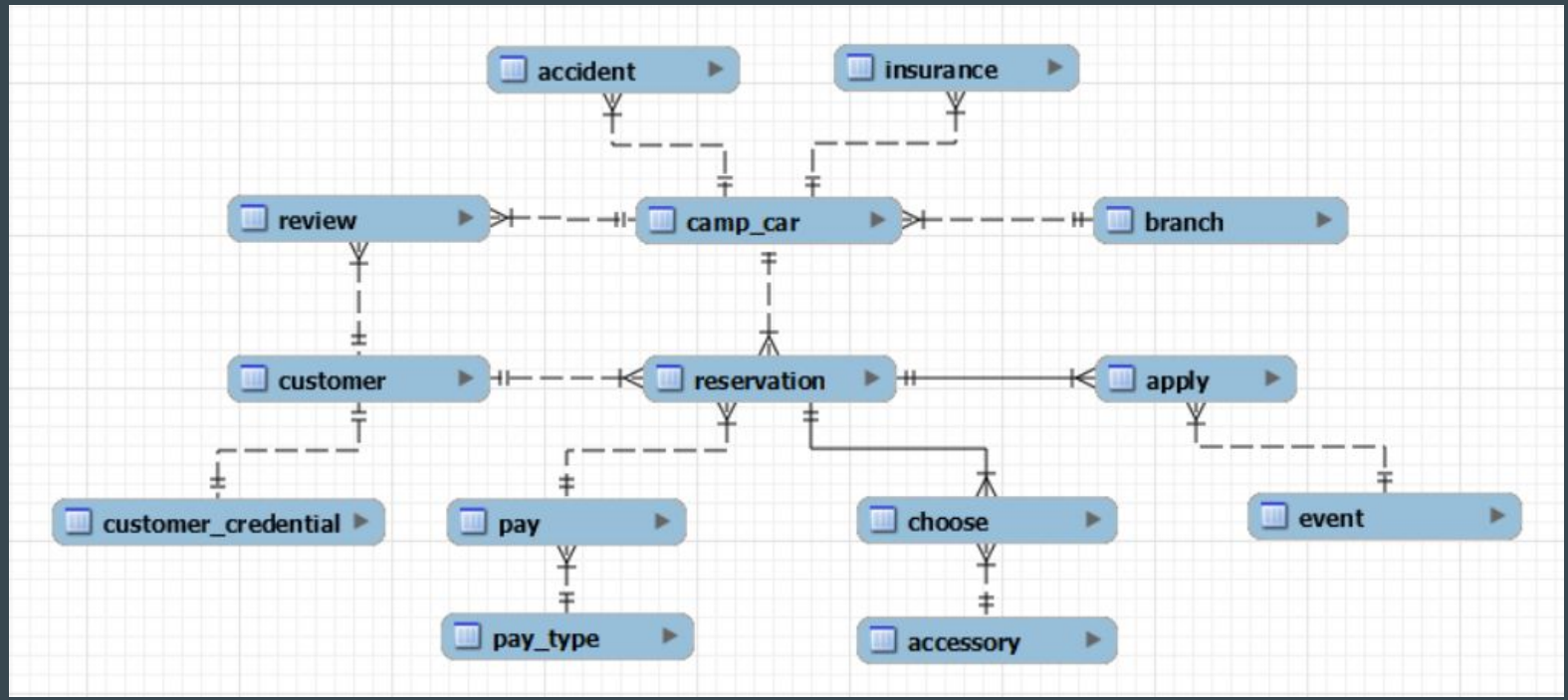
4. DataBase Implementation

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

4. DataBase Implementation



4. DataBase Implementation



5. Conclusion

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Q&A