

DATABASE SYSTEMS

Rental Service PROJECT

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Rakkan

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Semester 2 Year 2017

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Introduction

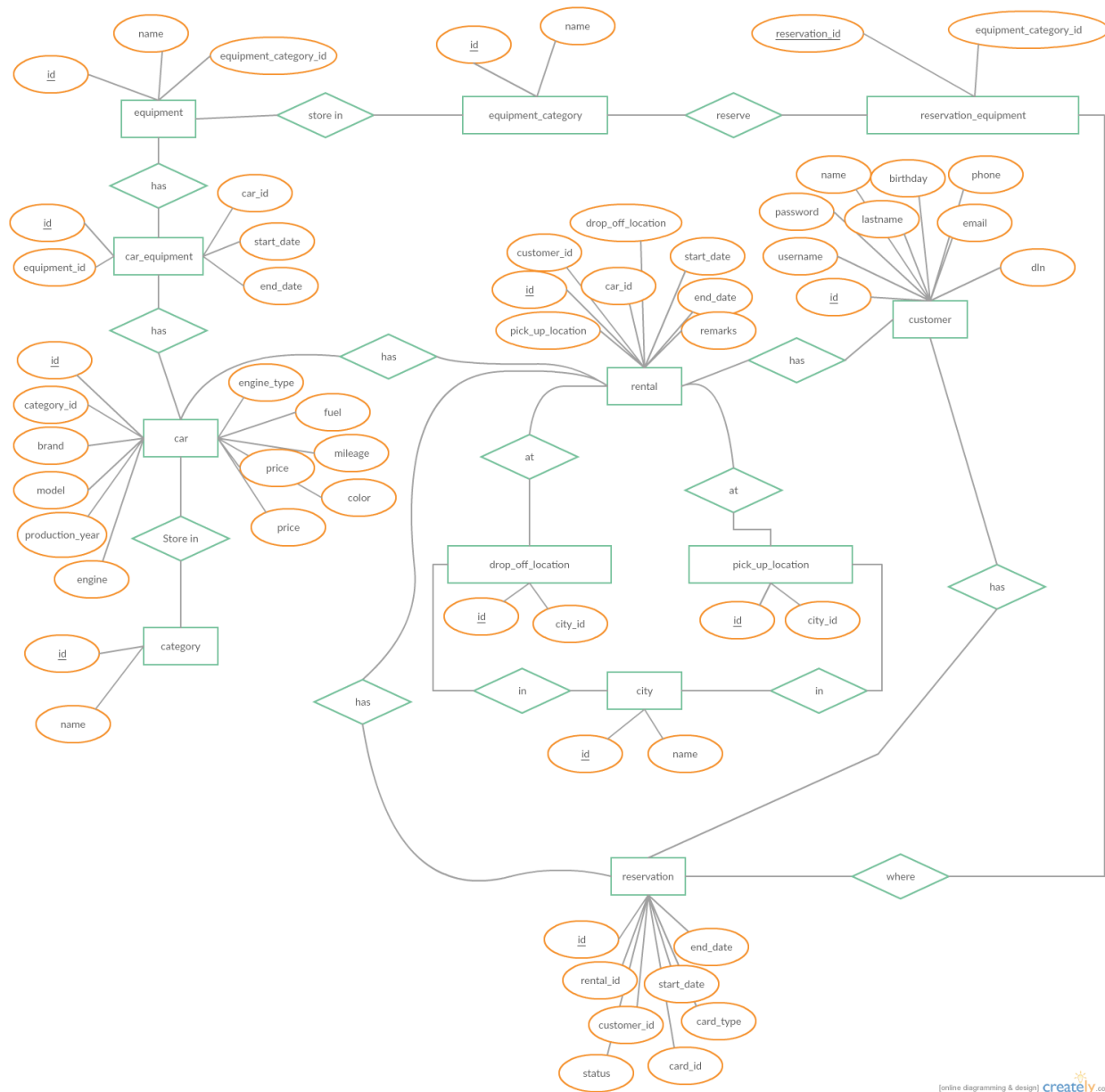
This report belongs to Database System. It is the formatted result of database queries and contains data for analysis. The methodology used in this project is to combine the knowledge of Database , PHPmyAdmin, SQL language and more of website programming language. The report contains the detail information on tables, ER diagram, data dictionary, data sheet, SQL statement and its description.

Objective

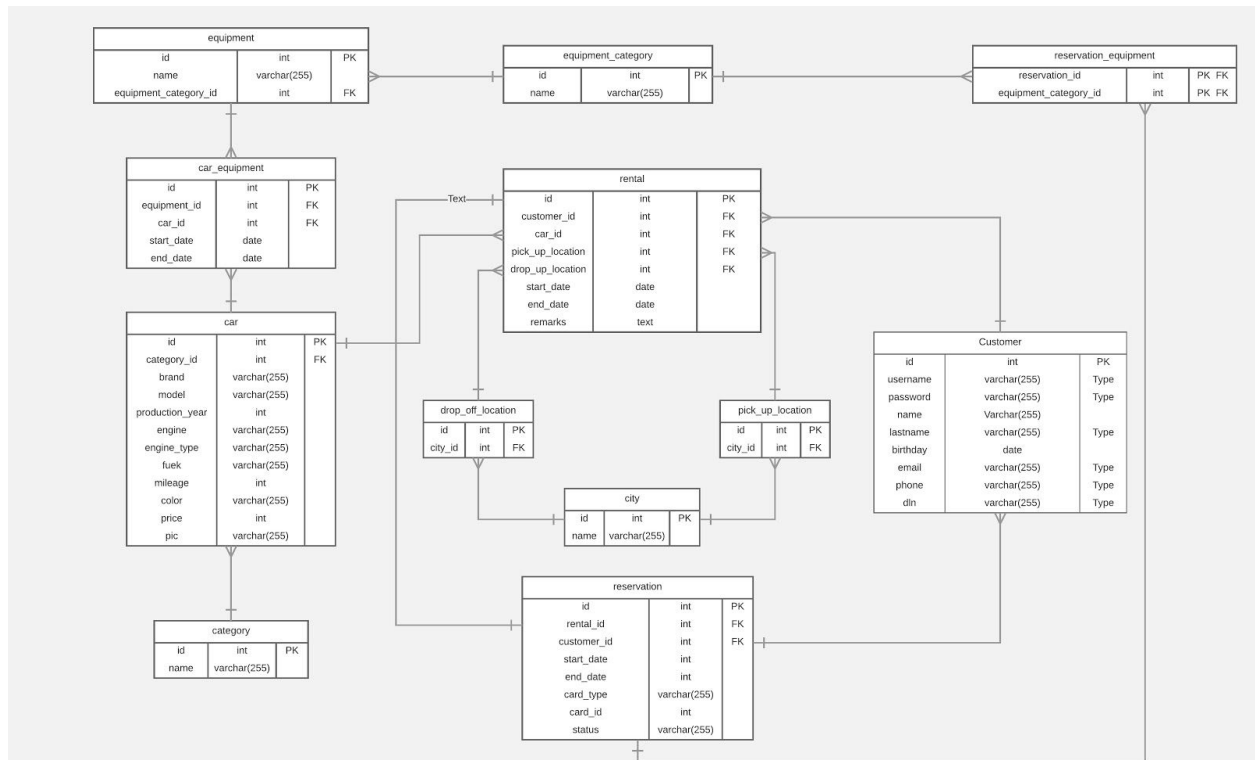
The purpose of project is to

- Our project focus on usability and utility for customer.
- Provide system of rental service to have good management , easy for user to make some rent a car to travel to somewhere , easy to control or manage data of customers , cars and other information.
- Create this project for use in the real life and make more convenience to rent a car and more option.
- Help users to save time to find some car.
- Apply the knowledge that we have learned from this course and implement it into an useful database.

ER Diagram



ER Model



Query

Search all car that have category name equal supercar.

```
SELECT car.id ,category.name , car.brand , car.model , car.production_year ,
       car.engine , car.engine_type ,car.fuel , car.mileage , car.color , car.pic
FROM car
      LEFT JOIN category ON car.category_id = category.id WHERE category.name LIKE
'%supercar%'
```

Result :

id	name	brand	model	production_year	engine	engine_type	fuel	mileage	color	pic
10	Supercar	2014	Koenigsegg	0	5.0	Turbo	Petrol	0	White	agera_r_01
11	Supercar	Lamborghini	Huracan	2014	5.0	Turbo	Petrol	0	White	huracan_01
12	Supercar	Lamborghini	Aventador	2014	6.5	Turbo	Petrol	0	White	aventador_01
21	Supercar	BMW	i8	2016	1.5	Hybrid	Petrol	0	Red	i8_01

Search all customer that have name equal rakkan.

```
SELECT id,name,lastname,birthday,email,phone,dln
FROM customer
WHERE "name" LIKE '%"rakkan"%'
```

Result :

id	name	lastname	birthday	email	phone	dln
2	rakkan	jintasatien	1997-03-16	rakkan@ku.th	0838152540	23456785432

Select mileage of a car that have reservation in order at 100(nested selection)

```
SELECT brand,model,mileage FROM car
WHERE car.id = (SELECT rental.car_id FROM rental WHERE rental.id =
                (SELECT rental_id FROM reservation WHERE reservation.id = 8))
```

Result :

brand	model	mileage
Honda	NSX	0

Replace the old information of customer Rakkan by Sara

```
REPLACE INTO customer(id,username,password,name,lastname,birthday,email,phone,dln)
VALUES
('67','Saraj','1234','Sara','Jane','1997-03-17','Saraj@hotmail.com','0838152540','234545')
```

Old data :

id	username	password	name	lastname	birthday	email	phone	dln
67	rakkan	rakkan	Rakkan	Jintasatien	1997-03-16	rakkan.j@ku.th	0867534567	4563765412

New data :

id	username	password	name	lastname	birthday	email	phone	dln
67	Saraj	1234	Sara	Jane	1997-03-17	Saraj@hotmail.com	0838152540	234545

Search the fastest supercar car in our stocks.

```
SELECT * FROM car
WHERE category_id = (
    SELECT id FROM category
    WHERE name = 'supercar' ORDER BY 'engine' DESC)
```

id	category_id	brand	model	production_year	engine	engine_type	fuel	mileage	color	price	pic
73	9	Koenigsegg	Agera R	2014	5.0	Turbo	Petrol	10000	White	50000	agera_r_01
74	9	Lamborghini	Huracan	2014	5.0	Turbo	Petrol	0	White	50000	huracan_01
75	9	Lamborghini	Aventador	2014	6.5	Turbo	Petrol	0	White	50000	aventador_01
84	9	BMW	i8	2016	1.5	Hybrid	Petrol	0	Red	40000	i8_01

Get all information about recently rental of one customer and then generate a new table.

```
SELECT rental.id,customer.name , customer.lastname , customer.birthday ,customer.email ,
customer.phone , customer.dln ,
    pick_up_location.city_id AS pick_up_location , drop_off_location.city_id AS
drop_off_location ,
    rental.start_date, rental.end_date , car.brand , car.model , car.production_year ,
car.engine ,
    car.engine_type , car.fuel , car.price ,
    car.mileage , car.color , car.pic , reservation.card_type , reservation.card_id
FROM rental
LEFT JOIN customer
    ON rental.customer_id = customer.id
LEFT JOIN pick_up_location
```

```

    ON rental.pick_up_location_id = pick_up_location.id
LEFT JOIN drop_off_location
    ON rental.drop_off_location_id = drop_off_location.id
LEFT JOIN car
    ON rental.car_id = car.id
LEFT JOIN reservation
    ON rental.id = reservation.rental_id
WHERE rental.id = ".$last_id;

```

Result :

id	name	lastname	birthday	email	phone	dln	pick_up_location	drop_off_location	start_date	end_date
178	Nuttapatprom	Chongamorkulprapa	1996-11-04	nuttapatprom.c@ku.th	0906069175	1232456471	15	31	2017-05-24	2017-05-29

brand	model	production_year	engine	engine_type	fuel	price	mileage	color	pic	card_type	card_id
Ford	Focus RS	2016	2.0	Turbo	Petrol	30000	0	Blue	focus_rs_01	Visa	2147483647

Relational Model

car (id, brand, model, production_year, engine, engine_type, fuel, mileage, color, price, pic)

car_equipment(id, equipment_id, car_id, start_date, end_date)

category(id, name)

city(id, name)

customer(id, username, password, name, lastname, birthday, email, phone, email, phone, dln)

drop_off_location (id, city_id)

equipment (id, name, equipment_category_id)

equipment_category (id, name)

pick_up_location (id, city_id)

rental (id, customer_id, car_id, pick_up_location_id, drop_off_location_id, start_date, end_date, remarks)

reservation (id, rental_id, customer_id, start_date, end_date, card_type, card_id, status)

reservation_equipment (reservation_id, equipment_category_id)

Car Table

Attribute	Type	Restriction	Description
id	int	Long integer	Id of each car
category_id	int	Long integer	Id of category
brand	varchar	255 alphabet	Name of car brand
model	varchar	255 alphabet	Name of car model
production_year	int	Long integer	Year of manufacture
engine	varchar	255 alphabet	Size of engine (liter)
engine_type	varchar	255 alphabet	Type of engine (Hybrid , Turbo)
fuel	varchar	255 alphabet	Type of fuel (Petrrol , Diesel
mileage	int	Long integer	Distance used
color	varchar	255 alphabet	Color of each car
price	int	Long integer	Price of rent car
pic	varchar	255 alphabet	Name of picture

Car equipment

Attribute	Type	Restriction	Description
id	int	Long integer	Id of each car have equipment
equipment_id	int	Long integer	Id of equipment
car_id	int	Long integer	Id of car
start_date	date	Date format	Start rent date
end_date	date	Date format	End rent date

Category

Attribute	Type	Restriction	Description
id	int	Long integer	Id of each car type
name	varchar	255 alphabet	Name of car type

City

Attribute	Type	Restriction	Description
id	int	Long integer	Id of each city
name	varchar	255 alphabet	Name of city

Customer

Attribute	Type	Restriction	Description
id	int	Long integer	Id of each customer
username	varchar	255 alphabet	Username
password	varchar	255 alphabet	Password
name	varchar	255 alphabet	Name of customer
lastname	varchar	255 alphabet	Lastname of customer
birthday	date	Date format	Birthday of customer
email	varchar	255 alphabet	Email of customer
phone	varchar	255 alphabet	Phone number of customer
dln	varchar	255 alphabet	Driver license number

Drop off location

Attribute	Type	Restriction	Description
id	int	Long integer	Id of drop off location
city_id	int	Long integer	Id of each city

Equipment

Attribute	Type	Restriction	Description
id	int	Long integer	Id of equipment
name	varchar	255 alphabet	Name of equipment
equipment_category_id	int	Long integer	Id of equipment type

Equipment category

Attribute	Type	Restriction	Description
id	int	Long integer	Id of equipment type
name	varchar	255 alphabet	Name of equipment category

Pick up location

Attribute	Type	Restriction	Description
id	int	Long integer	Id of pick up location
city_id	int	Long integer	Id of each city

Rental

Attribute	Type	Restriction	Description
id	int	Long integer	Id of rental
customer_id	int	Long integer	Id of each customer
car_id	int	Long integer	Id of each car
pick_up_location_id	int	Long integer	Id of pick up location
drop_off_location_id	int	Long integer	Id of drop off location
start_date	date	Date format	Start date
end_date	date	Date format	End date
remarks	text	String	Comment

Reservation

Attribute	Type	Restriction	Description
id	int	Long integer	Id of reservation
rental_id	int	Long integer	Id of rental
customer_id	int	Long integer	Id of each customer
start_date	int	Long integer	Start date
end_date	int	Long integer	End date
card_type	varchar	255 alphabet	Card type (Visa or Mastercard)
card_id	int	Long integer	Card number
status	varchar	255 alphabet	Status of reservation

Reservation Equipment

Attribute	Type	Restriction	Description
reservation_id	int	Long integer	Id of reservation equipment
equipment_category_id	int	Long integer	Id of equipment category