Car-Repair Shop Reservation System: JADautorepair

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Description

JADautorepair database is a normalized database designed for car-repair shop reservation system where the customers can request to repair their cars in the shop.

The system stores the information about the customer, car, and service. This information is maintained (add, update, delete) by the administrator. One customer can have multiple cars being serviced.

The employee will create the order for the order transaction. The order references to the car and service. It also stores the request date. Each service has the specific price.

We normalized the database design for example by separating the car information from the customers table. If we left the car info in the customer table, then a customer with (n) cars would need (n) records in the customer table for each car. That would mean that there would be a lot of data redundancy in the customer's personal information. By separating the car information from the customers table, it allows each customer to have more than one car, without any unnecessary data redundancy

<u>Assumption</u>

The system does not keep track the payment such as card number…

The car belongs to one customer. Each customer can have one or many cars.

Services Page:

To view services:

Click button to view all services and prices

Customer Page:

To place order:

Enter:

Username

Password

first_name

last_name

phone_number

car_make

car_model

car_year

To view order:

Enter:

Username

Password

Employee Page:

To place order:

Enter:

Username

Password

customer_id

service_id

DBs:

Service

Id, Name, Price

Customer

Id, Username, Password, first_name, last_name, Phonenumber,

Car

Id, car_make, car_model, car_year, customer_Id

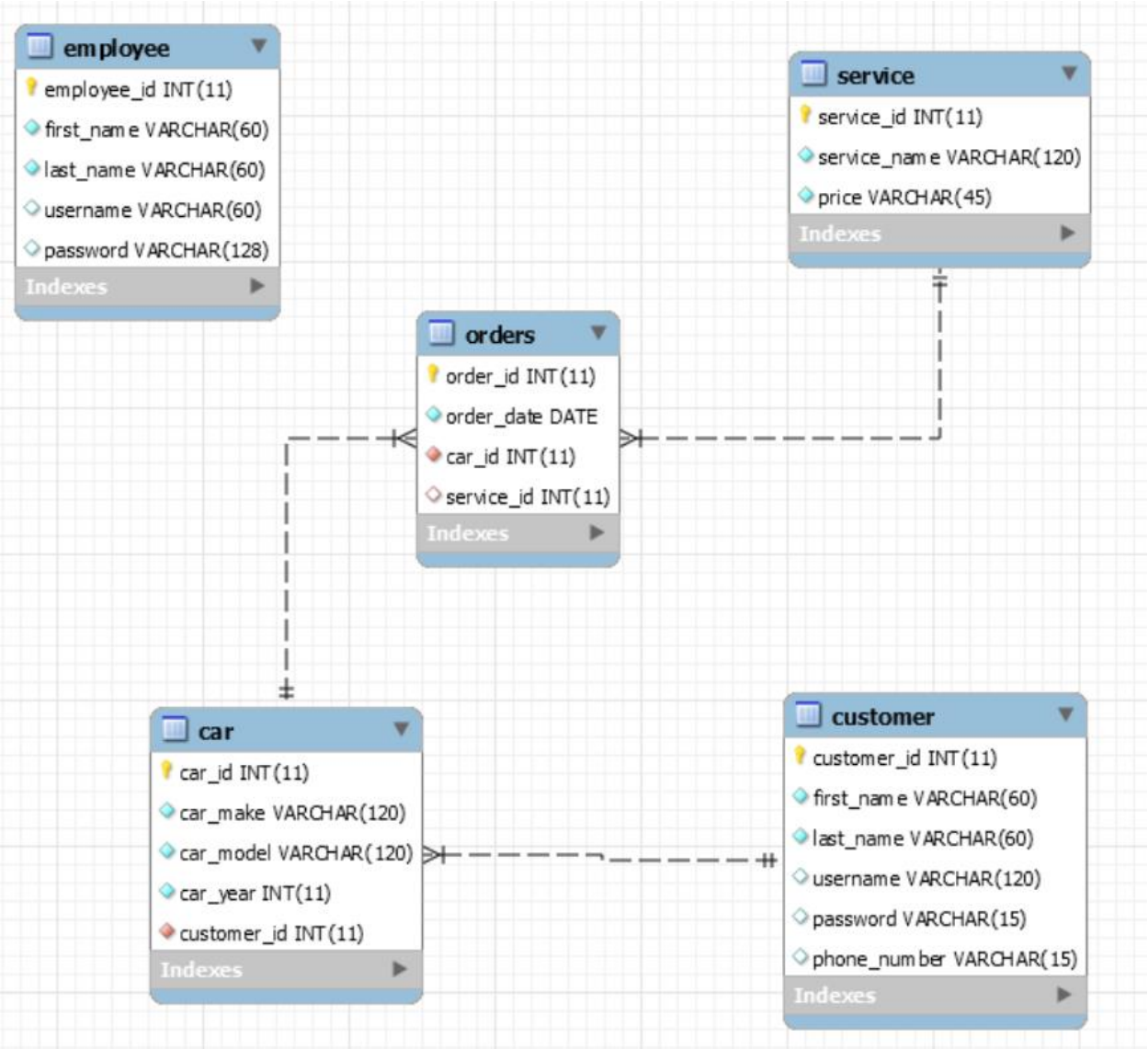
Employee

Id, first_name, last_name,Username, Password

Orders

Id, Car_Id, Customer_Id, Service_Id

ERD



Sample Data

Tables

```
SELECT * FROM jadautorepair.car;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell C

car_id	car_make	car_model	car_year	customer_id
1	Toyota	TO 2001	2001	1
2	Toyota	YAO 29	2012	1
3	Toyota	TOA VA3	2019	2
4	Mercedes Benz	MEA 001	2018	2
5	Mercedes Benz	MEA 2001	2000	3
6	Honda	HIN 333	2011	4
7	Honda	HONV2	2009	5
8	Honda	TIAV 34	2011	6
9	General Motors	GM 2009	2008	7
NULL	NULL	NULL	NULL	NULL

Limit to 2000 rows

```
1 • SELECT * FROM jadautorepair.customer;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content

customer_id	first_name	last_name	username	password	phone_number
1	Jeremy	Lawrence	jeryam	ADFAS333	123-4567-889
2	Santiago	Genovese	stangia	ADF#!E	456-4556-566
3	Michael	Bailey	mchea	DOA34,	111-2345-678
4	Mose	McBroom	mose233	BAA?#$	543-5678-222
5	Rex	Woodard	rexwoda	@#A3445	233-4444-122
6	Yvonne	Nicholson	ahcoanichen	$AB3Ada	345-2956-445
7	Lori	Grieco	lorigeara233	d%A5?!	220-2345-555
NULL	NULL	NULL	NULL	NULL	NULL

Limit to 2000 rows

```
1 • SELECT * FROM jadautorepair.employee;
```

Result Grid | Filter Rows: | Edit: | Export/Import:

employee_id	first_name	last_name	username	password
1	Karen	Farrell	kan1	123456
2	Anthony	Mirabal	aut2	454$@1
3	Bernice	Infante	brea3	34334A
4	Crystal	Cramer	cryle	A3455$#
5	Lisa	Knarr	la34	G$>2
6	Louise	Williamson	lau5443	TGANBA#
7	George	Reyes	dgao34	@!AB#
8	Teri	Boswell	teaab34	34BA3.A!
9	Walter	Hein	wat34	BAD3$#A)
NULL	NULL	NULL	NULL	NULL

```
SELECT * FROM jadautorepair.orders;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Ce

order_id	order_date	car_id	service_id
1	2018-12-01	1	1
2	2018-12-01	2	2
3	2018-12-12	3	3
4	2018-12-13	4	4
5	2018-12-14	5	5
6	2018-12-14	6	6
7	2018-12-15	7	7
8	2018-12-15	1	8
NULL	NULL	NULL	NULL

Limit to 2000 rows

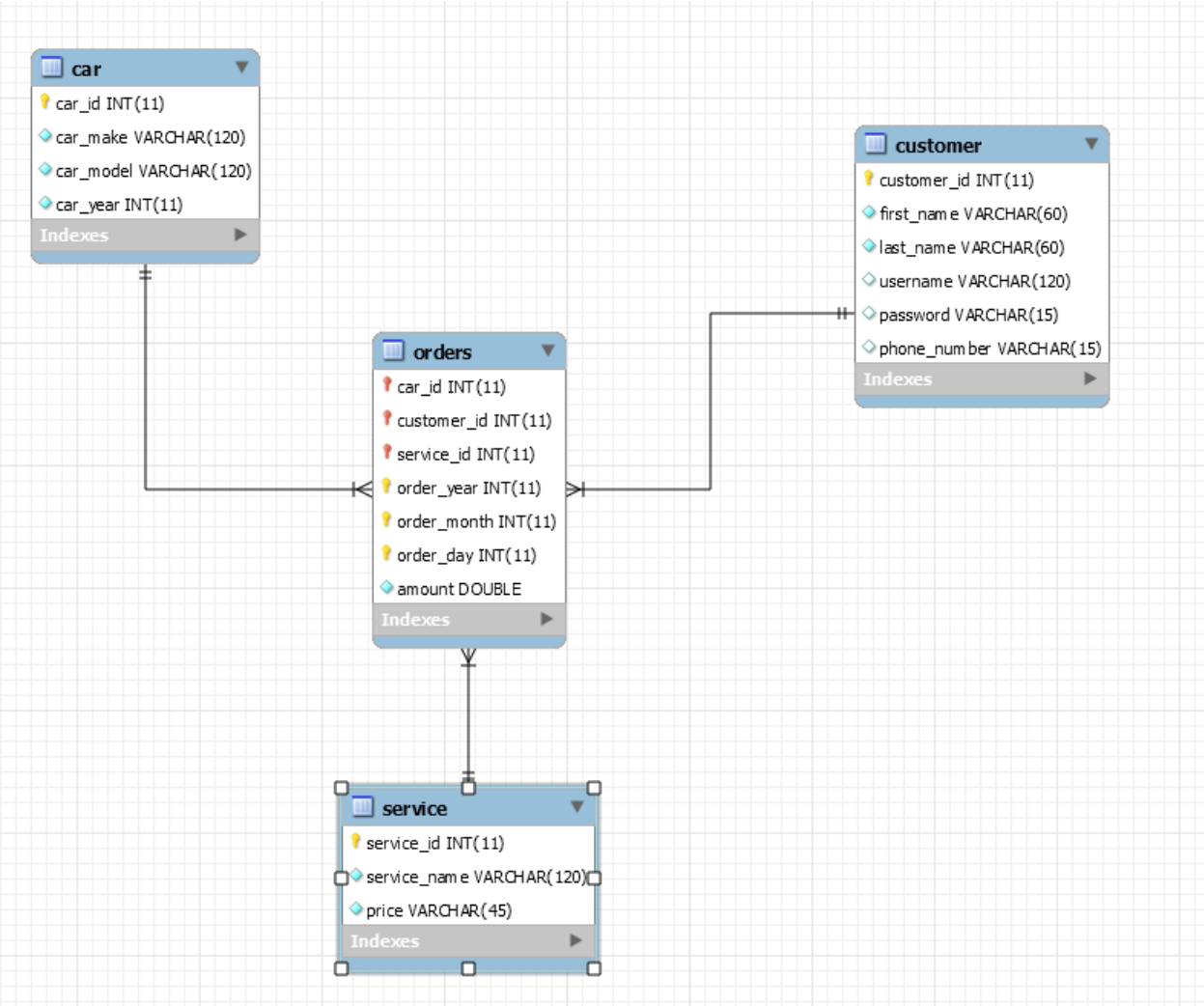
```
1 • SELECT * FROM jadautorepair.service;
```

Result Grid | Filter Rows: | Edit: | Ex

service_id	service_name	price
1	Oil change	36.62
2	Brake repair	69.99
3	Transmission repair	32.77
4	Radiator repair	26.99
5	Water Pumps	36.99
6	Timing Belts	34.99
7	Anti-Lock Brakes (ABS)	95.99
8	Power Windows & Doors	26.50
9	Wheel Alignments	31.25
10	Steering	56.25
11	Fix Rattles, Squeaks ...	53.29
NULL	NULL	NULL

Part 2

ERD



OLAP Questions Our App Will Answer:

1) customers have more than 1 car in the shop

2) services (and cost) each vehicle has received by year, month, day

3) Which services are used most in year

4) What time (year, month, day) are the services are used

5) The average number of customers each year, month

6) How much they spend on average per year

Sample Query Results

1) customers have more than 1 car in the shop

```
select customer.customer_id, customer.first_name, customer.last_name
from customer, orders
where customer.customer_id = orders.customer_id
group by customer.customer_id, customer.first_name, customer.last_name
having count(distinct orders.car_id) > 1;
```

esult Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_id	first_name	last_name
1	Jeremy	Lawrence
2	Santiago	Genovese

2) services (and cost) each vehicle has received by year, month, day

Don't Limit

```
select service.service_id, service_name, order_year, order_month, order_day, sum(amount) as total
from service, orders
where service.service_id = orders.service_id
group by service.service_id, service_name, order_year, order_month, order_day with rollup;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

service_id	service_name	order_year	order_month	order_day	total
1	Oil change	2018	12	1	36.62
1	Oil change	2018	12	15	109.85999999999999
1	Oil change	2018	12	NULL	146.48
1	Oil change	2018	NULL	NULL	146.48
1	Oil change	2019	1	1	146.48
1	Oil change	2019	1	NULL	146.48
1	Oil change	2019	NULL	NULL	146.48
1	Oil change	NULL	NULL	NULL	292.96
1	NULL	NULL	NULL	NULL	292.96
2	Brake repair	2018	12	1	69.99
2	Brake repair	2018	12	15	69.99
2	Brake repair	2018	12	16	69.99
2	Brake repair	2018	12	NULL	209.96999999999997
2	Brake repair	2018	NULL	NULL	209.96999999999997
2	Brake repair	2019	1	1	69.99
2	Brake repair	2019	1	NULL	69.99
2	Brake repair	2019	NULL	NULL	69.99
2	Brake repair	NULL	NULL	NULL	279.96
2	NULL	NULL	NULL	NULL	279.96

3) Which services are used most in year

```
select service.service_id, service_name, order_year as 'year', count(*) as times
from service, orders
where service.service_id = orders.service_id
group by service.service_id, service_name, order_year
order by times desc
limit 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

service_id	service_name	year	times
1	Oil change	2019	4

4) What time (year, month, day) are the services are used

```
select service.service_id, service_name, order_year as 'year', order_month as 'month', order_day as 'day', count(*) as 'number of times used'
from service, orders
where service.service_id = orders.service_id
group by service.service_id, service_name, order_year, order_month, order_day
order by count(*) desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

service_id	service_name	year	month	day	number of times used
1	Oil change	2019	1	1	4
1	Oil change	2018	12	15	3
3	Transmission repair	2018	12	16	2
5	Water Pumps	2019	1	1	1
6	Timing Belts	2018	12	14	1
8	Power Windows & Doors	2018	12	15	1
2	Brake repair	2018	12	16	1
2	Brake repair	2018	12	1	1
3	Transmission repair	2018	12	12	1
4	Radiator repair	2018	12	16	1
4	Radiator repair	2018	12	13	1
5	Water Pumps	2018	12	14	1
1	Oil change	2018	12	1	1
7	Anti-Lock Brakes (ABS)	2018	12	15	1
2	Brake repair	2019	1	1	1
2	Brake repair	2018	12	15	1
3	Transmission repair	2019	1	1	1
3	Transmission repair	2018	12	15	1

5) The average number of customers each year, month

```
select order_year as 'year', order_month as 'month', avg(customer_id) as 'average number of customers'
from orders
group by order_year, order_month;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

year	month	average number of customers
2018	12	2.0000
2019	1	1.7500

6) How much they spend on average per year

```
select order_year as 'year', avg(amount) as 'average spending'
from orders
group by order_year;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

year	average spending
2018	43.292941176470585
2019	39.1525