



BEST. CARPOOLING. WEBSITE. EVER.

Prepared by the Amazing Group 31



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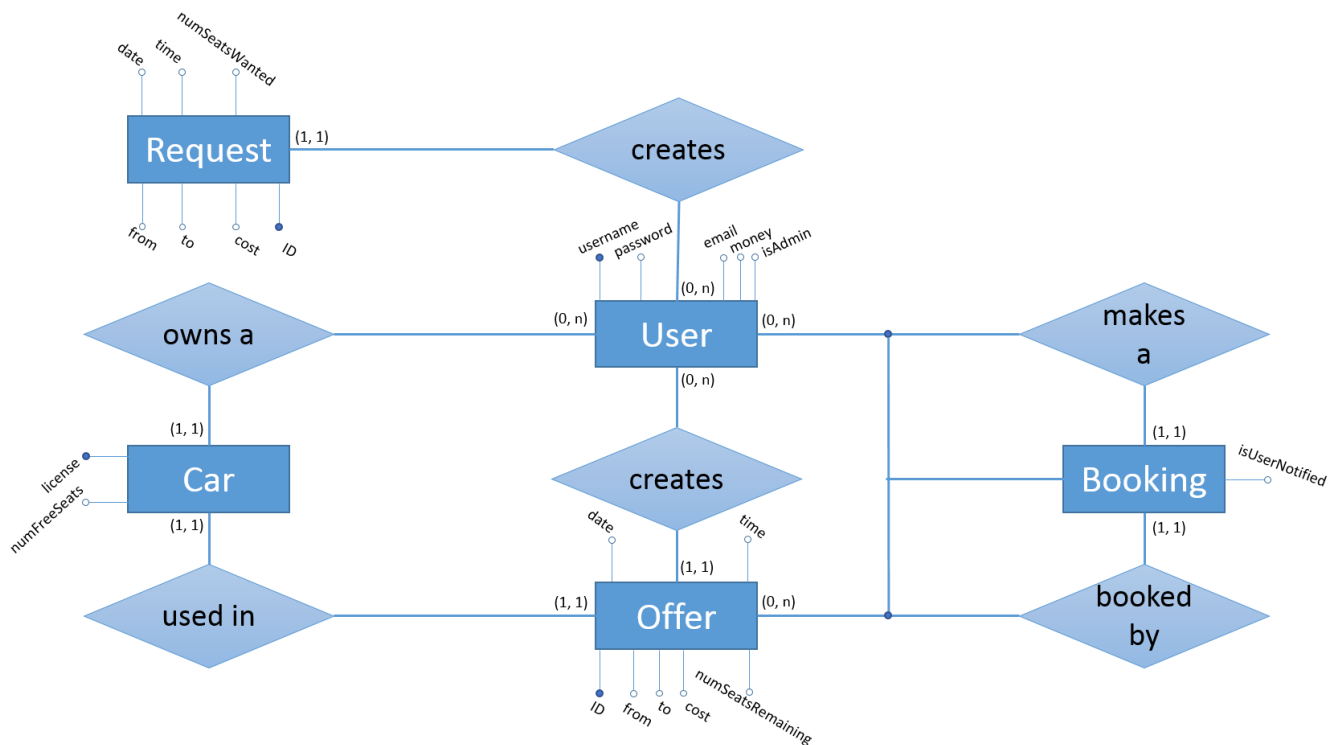
AMAZING ARCHITECTURE

Web Server: Apache

Server Page Language: PHP

Database Management System: Postgres

EXCELLENT ER DIAGRAM



REMARKABLE RELATIONAL SCHEMA

```
CREATE TABLE users(  
    username VARCHAR(64) PRIMARY KEY,  
    password VARCHAR(64) NOT NULL,  
    email VARCHAR(128) UNIQUE,  
    money numeric NOT NULL,  
    isAdmin BOOLEAN DEFAULT FALSE  
);
```

```
CREATE TABLE creates_request(  
    rid numeric PRIMARY KEY,  
    fromWhere VARCHAR(128) NOT NULL,  
    toWhere VARCHAR(128) NOT NULL,  
    numSeatsWanted numeric CHECK(numSeatsWanted >= 1),  
    rDate DATE NOT NULL,  
    rTime VARCHAR(4) NOT NULL,  
    requestor VARCHAR(64),  
    FOREIGN KEY (requestor) REFERENCES users(username)  
);
```

```
CREATE TABLE owns_car(  
    license VARCHAR(16) PRIMARY KEY,  
    numFreeSeats numeric CHECK(numFreeSeats >= 1),  
    cOwner VARCHAR(64) REFERENCES users(username)  
);
```

```
CREATE TABLE creates_offer(  
    offerid numeric PRIMARY KEY,  
    fromWhere VARCHAR(128) NOT NULL,  
    toWhere VARCHAR(128) NOT NULL,  
    tripCost numeric NOT NULL,  
    numSeatsRemaining numeric NOT NULL CHECK (numSeatsRemaining >= 0),  
    offerDate DATE NOT NULL,  
    offerTime VARCHAR(4) NOT NULL,  
    usedCar VARCHAR(16) REFERENCES owns_car(license)  
);
```

```
CREATE TABLE booking(  
    isUserNotified BOOLEAN DEFAULT FALSE,  
    username VARCHAR(64) REFERENCES users(username),  
    offerid numeric REFERENCES creates_offer(offerid),  
    PRIMARY KEY (username, offerid)  
);
```

SUPERB SQL CODE SAMPLES

```
SELECT *
FROM creates_offer o
WHERE o.numseatsremaining > 0
AND o.offerdate >= '$date'
AND o.usedcar NOT IN
    (SELECT c.license
     FROM owns_car c
     WHERE c.cowner = '$username')
AND NOT EXISTS
    (SELECT * FROM booking b
     WHERE b.username = '$username'
     AND b.offerid = o.offerid)
```

The above code fragment is used when the user wishes to look for currently available offer. The first NOT IN clause prevents users from getting offers which he himself has offered, and the NOT EXIST clause prevents the user from getting offers in which he has already booked.

```
SELECT COUNT(*)
    FROM booking b
    WHERE b.username = '$login_session'
    AND b.isUserNotified = 'f';
```

Counts number of unread notification user has with an aggregate query.

WOW! WEB INTERFACE SCREENSHOTS

The screenshot shows the main page of the CarPooling ROCKS application. The navigation bar at the top includes links for CarPooling, Home, Offer Ride, Book a Ride, Request Ride, Search, and Search Users. The user is logged in as Kenneth, with a notification badge showing 0. The main heading is "CarPooling ROCKS". Below the heading, a welcome message says "Welcome, Kenneth" and shows the current amount as 31.00. The page is divided into two sections: "Your Offers" and "Your Bookings".

Date	From	To
3 March 2016 15:00	Yew Tee MRT	HarbourFront MRT
3 March 2016, 16:00	HarbourFront MRT	Yew Tee MRT
7 March 2016, 10:00	NUS LT17	School of Computing

Date	From	To
4 May 2016, 23:59	Somerset MRT	Changi Airport
-	-	-
-	-	-

Main Page shows the user his current cash as well as his next three upcoming offers and bookings. If the user has any new notifications (such as a new person booking one of his/her offers), the number next to his name is updated accordingly. He is also able to navigate to other pages using the navigation bar on top. This is done with SQL queries.

The screenshot shows the "Create a new Offer" page. The navigation bar is the same as the main page, but the "Offer Ride" link is highlighted. The main heading is "Create a new Offer". The form contains the following fields:

- Select a car:
- Start Point:
- End Point:
- Number of Passengers:
- Asking Price:
- Date:
- Time: :

At the bottom of the form are two buttons: "Submit" (blue) and "Back" (red).

The user is able to create a new offer here. Through SQL integrity constraints, we prevent malicious users from entering nonsense values.

CarPooling

Home

Offer Ride

Book a Ride

Request Ride

Search

Search Users

Kenneth

Logout

Kenneth's Profile

Your Cars

License	Seats Available
SJN8888C	4

Your Funds

Current Amount
31.00

Register Car

License Number:

Seats Available:

Register

Add Funds

Add amount:

Add

Change new password

New password:

Old password:

Change password

Set Email

New Email:

Change Email

Profile page. User is able to change his personal details here, as well as register his car and top up his funds.