

Phones, Users, Admins and Customers

Phone is represented by a unique phone number. The **phone_number** is the most important piece of data which is used as the primary key or foreign key for many db tables. Another important piece of information is the **package_code** that determines a phone's **package plan**. If we know the phone number, we can determine what package plan the phone uses.

Admin (administrator) and **Customer** are physical persons defined by unique data - personal number and e-mail; they can access the application via the **User** roles.

As mentioned before, User has two distinct roles:

- **ADMIN role User**, controls the entire application; allowed access to all REST controllers except the Client Controller,
- **CUSTOMER role User**, gets information related to his phone number and general info; can only access the Client Controller.

The authorized URLs for both the **ADMIN role** and the **CUSTOMER role** are defined in **SecurityFilterChain**, a sequence of filters that **Spring Security** applies to each incoming HTTP request.

ADMIN role User:

- creates and manages admin, customer, user and phone data
- associates the package plan to specific phone
- gives the phone (phone number) to the customer
- associates specific phone to the user
- grants add-on frame to the CUSTOMER role user on demand
- creates an SDR for each service performed by the phone during the month
- can monitor the current info about consumption for a specific phone during the month
- can monitor the monthly bills of a specific phone
- takes care of connection order:

for ADMIN role User

1. creates a Phone object
2. then creates an Admin object which contains that Phone object (phone number)
3. finally, creates (ADMIN role) User object and attaches it to that Phone

for CUSTOMER role User

1. creates a Customer object
2. then creates a Phone object
3. adds this Phone object to the Customer (through the JOIN table **customer_phone**)
4. finally, creates (CUSTOMER role) User object and attaches it to that Phone

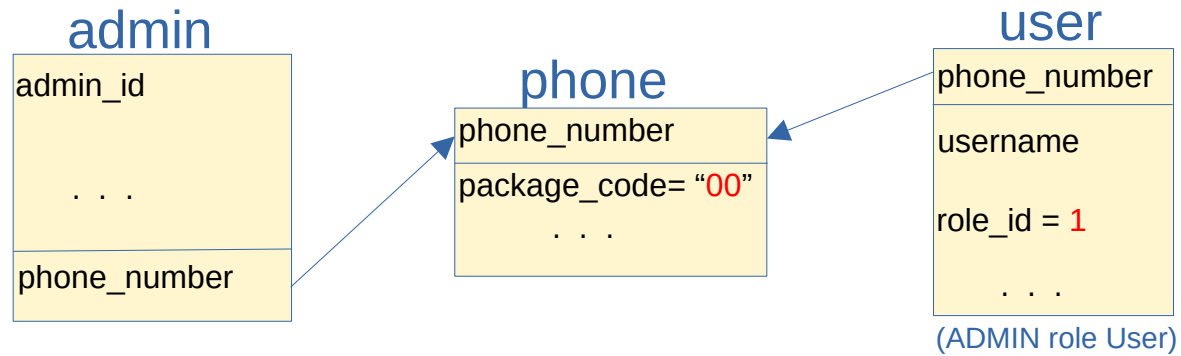
The Customer can have more than one phone. In that case the above procedure is the same, excluding the 1st step (no need for creation, because the Customer object already exists)

- **CUSTOMER role User (for a specific phone):**
- can be informed about the current service consumption - current info
- can be informed about the details of the monthly bills from previous months
- can change user password
- can be informed about the package plans and add-ons

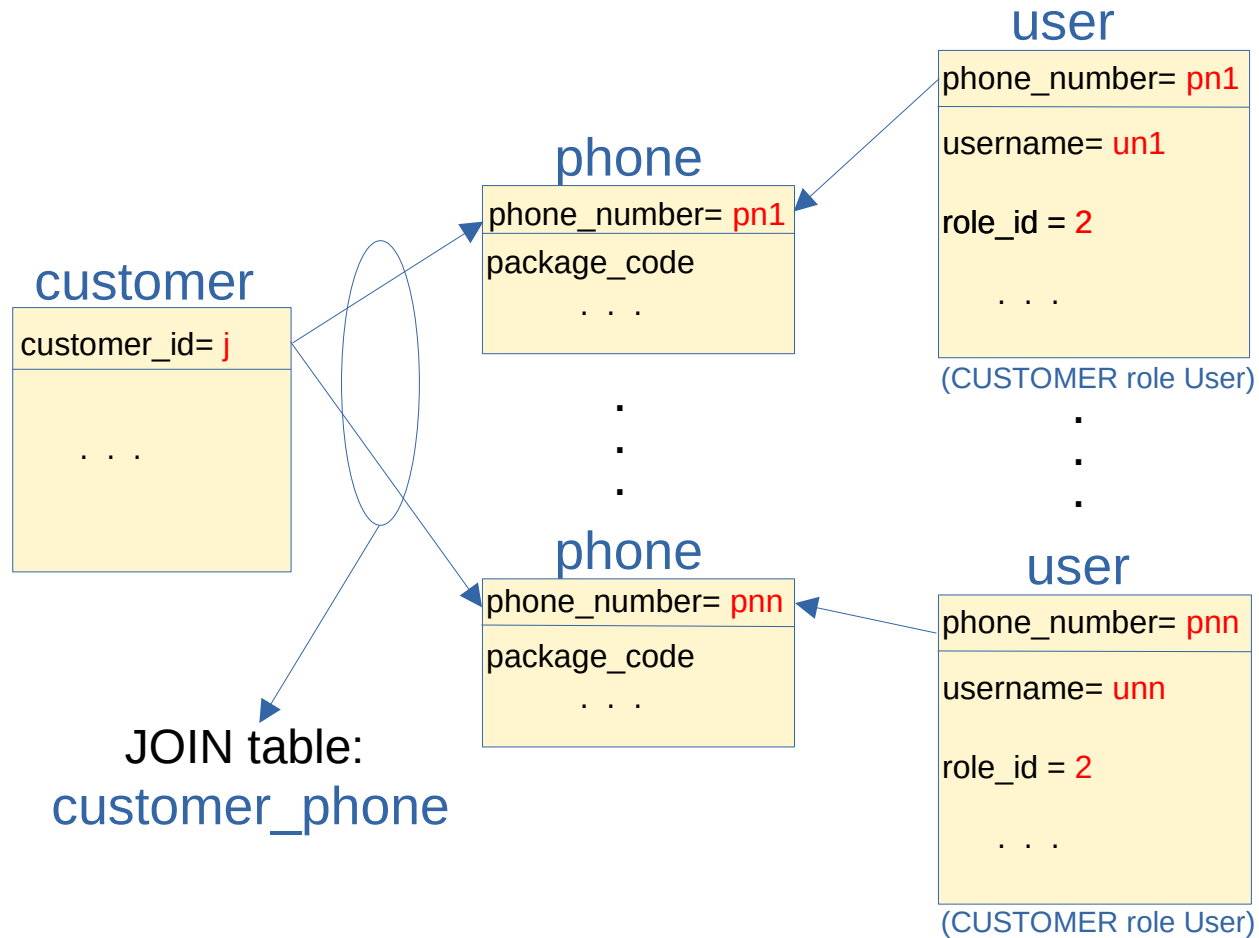
Administrator can only have one phone, the same phone assigned to the **ADMIN role User**. This phone is for admin support.

Customer can have more than one phone, but each of these phones is assigned to only one **User (CUSTOMER role User)**.

The next image shows relations between Phones, Users, Admins and Customers.



role	
role_id	role_type
1	ADMIN
2	CUSTOMER



customer_phone	
customer_id	phone_number
.	.
.	.
.	.
i	pni
j	pn1
.	.
.	.
.	.
j	pnn
k	pnk
.	.
.	.
.	.