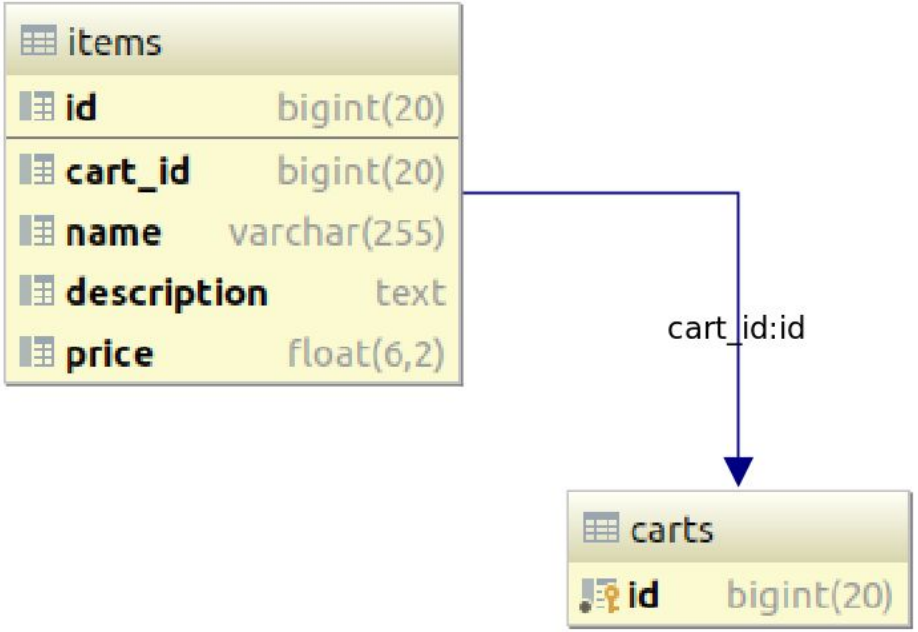
JAVA II

JPA & debug

Create databases with one to many relation by schema provided below



Create Cart, Item data models

- Look at you cart table and create relevant Cart entity object for that table. Use @OneToMany annotation.
- Look as your items table and create relevant Item entity object for that table. User @ManyToOne annotation.

Look at hints below :)

```
0 references
@Getter
0 references
@Setter
@OneToMany(mappedBy="cart")
private Set<Item> items;
```

```
@ManyToOne
@JoinColumn(name="cart_id", nullable=false)
private Cart cart;
```

```
0 references
@Getter
0 references
@Setter
@Column(columnDefinition = "TEXT")
private String description;
```

Insert some test data into your tables

```
insert into carts (id) values (default);

insert into items (name, description, price, cart_id)
  values ("test 1", "test description 1", 8.25, 1);
insert into items (name, description, price, cart_id)
  values ("test 2", "test description 2", 9.36, 1);
```

Write cart and item repositories

- Write CartRepository by extending CrudRepository
- Write ItemRepository by extending CrudRepository

Write CartRestController

- Write CartRestController that will have cartRepository and return all carts with items by using GetMapping('/api/carts');
  http://localhost:8080/api/carts should return

localhost:8080/api/carts


```
[
  - {
      id: 1,
    - items: [
        - {
            id: 2,
            name: "test 2",
            description: "test description 2",
            price: 9.36
          },
        - {
            id: 1,
            name: "test 1",
            description: "test description 1",
            price: 8.25
          }
      ]
  }
]
```


- Write CartRestController that will have cartRepository and return cart by id with items by using GetMapping('/api/carts/{id}');
  http://localhost:8080/api/carts/1 should return

localhost:8080/api/carts/1


```
{
    id: 1,
  - items: [
      - {
          id: 1,
          name: "test 1",
          description: "test description 1",
          price: 8.25
        },
      - {
          id: 2,
          name: "test 2",
          description: "test description 2",
          price: 9.36
        }
    ]
}
```

Write ItemRestController

- Write ItemRestController that will have itemRepository and return all carts with items by using GetMapping('/api/items');
  http://localhost:8080/api/items should return

localhost:8080/api/items

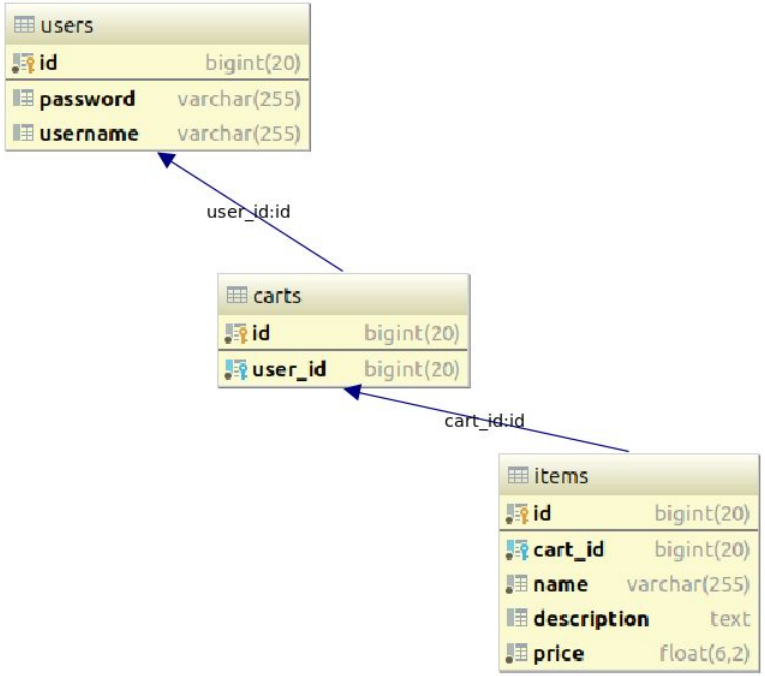

```
[
  - {
      id: 1,
      name: "test 1",
      description: "test description 1",
      price: 8.25
    },
  - {
      id: 2,
      name: "test 2",
      description: "test description 2",
      price: 9.36
    }
]
```


- Write ItemRestController that will have itemRepository and return cart by id with items by using GetMapping('/api/items/{id}');
  http://localhost:8080/api/items/1 should return

localhost:8080/api/items/2


```
{
    id: 2,
    name: "test 2",
    description: "test description 2",
    price: 9.36
}
```

Create one to many relation between users and carts tables in database



How migration can look with flyway :)

Create oneToMany relation between users and carts models

- Look at you users table and create relevant relation by using @OneToMany annotation.
- Look as your carts table and create relevant relation by using @ManyToOne annotation.

Look at hints below :)

```
@ManyToOne
@JoinColumn(name="user_id", nullable=false)
private User user;
```

```
@OneToMany(mappedBy="user")
private Set<Cart> cart;
```

Modify spring security config

Modify spring security class in such way that:

/api/carts

/api/users

/api/items

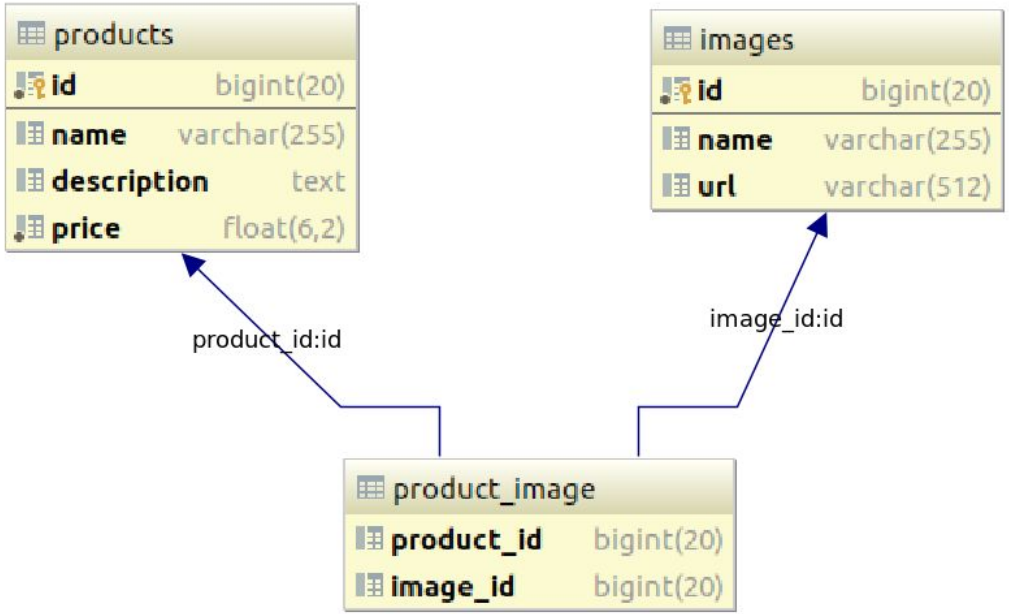
could be accessed by user with `USER` role / authority

Debugging

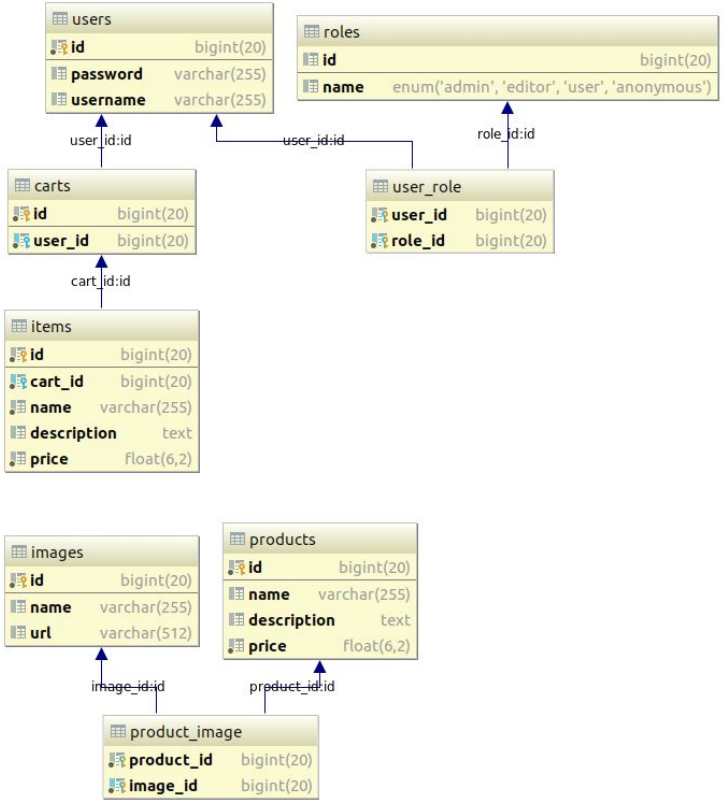
Debugging is the process of finding and resolving defects or problems within a computer program that prevent correct operation of computer software or a system.

Debugging tactics can involve interactive debugging, control flow analysis, unit testing, integration testing, log file analysis, monitoring at the application or system level, memory dumps, and profiling.

Create products and images tables, models and repositories. Create many to many relations between them. Use schema below.



More or less final database with relations



How to debug spring boot application?

1. Add configuration for spring boot plugin (maven example below):

```
<configuration>
  <jvmArguments>
    -Xdebug -Xrunjdwp:transport=dt_socket,server=y,suspend=y,address=5005
  </jvmArguments>
</configuration>
```

2. Run application: mvn spring-boot:run
3. Press F5 (in visual studio code)

Spring boot debug example