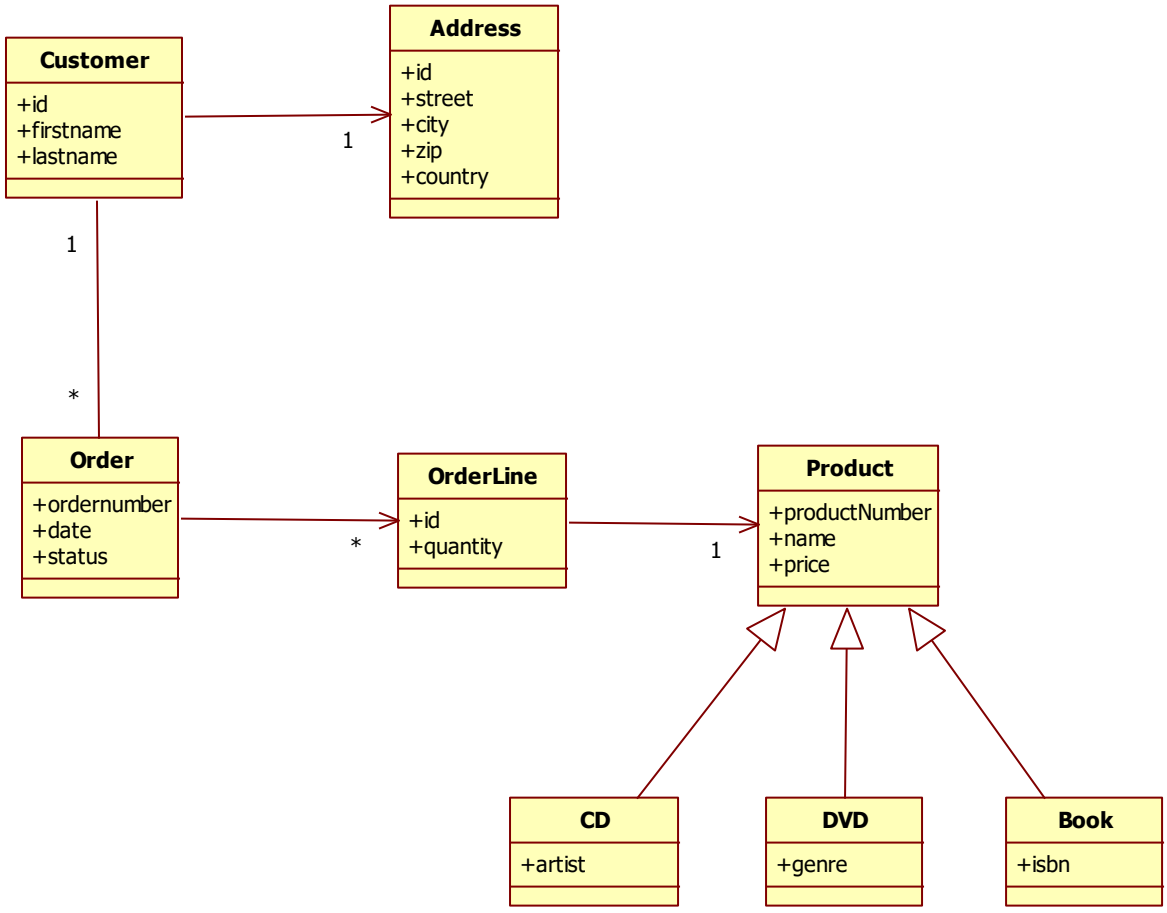
Lab 6

Part A:



In the solution of lab 5 part A, write the following queries and see if they work correctly:

Write queries using method names for the following queries.

- Give all customers.
- Give all CD's from U2 with a price smaller than 10 euro
- Give all customers with zip code 2389HJ
- Give all customers who ordered a DVD with the name Rocky3

Write a named query for the following queries:

- Give all customers from the USA.
- Give all CD's from a certain artist

Write a JPQL query with @Query for the following queries:

- Give the ordernumbers of all orders with status 'closed'
- Give the first and lastnames of all customers who live in Amsterdam.
- Give the ordernumbers of all orders from customers who live in a certain city (city is a parameter).
- Give all CD's from a certain artist with a price bigger than a certain amount (artist and amount are parameter2).

Write a native query for the following queries:

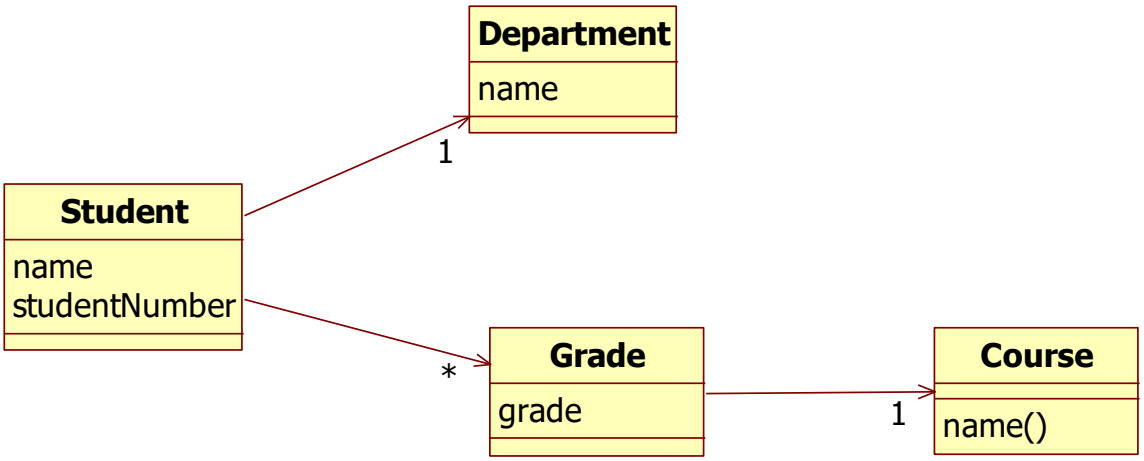
- Give all addresses in Amsterdam.
- Give all CD's from U2.

Implement the following queries using specifications:

- Give the ordernumbers of all orders with status 'closed'
- Give all customers who live in Amsterdam.
- Give all CD's from a certain artist with a price bigger than a certain amount (artist and amount are parameter2).

Part B

Create the following entities and store them with JPA in the database:



Then perform the following queries using method names:

- Get all students from a certain department
- Get all students who took a course with a certain name.

Then perform the following queries using @Query:

- Get all students from a certain department
- Get all students who took a course with a certain name.

Make sure that you optimize the mapping and the queries so that we get minimal database access

Part C

Given is the **JPAOptimization** project.

The Application will insert 5000 Customers and every Customer has an Account.
Then it retrieves all Customers from the database
Then it changes the name of all Customers in the database.
When you run the application you see that both the retrieval of customers and changing the customer name is very slow.

Retrieving all customers
To retrieve all Customers took 9923 ms
Change the name of all customers
To change the name of all customers took 41583 ms

Make it faster.

Now create a School entity class with a name. Then create a Student entity class with a firstname, lastname and emailaddress. A school has a list of Students.
Write the logic to add a large number of Schools (where each school contains a large number of students) to the database

Then retrieve all Schools (only schools, no students) and print the school name in the console. Check how much time this took. See if you can make this faster.

Then retrieve all Schools including the students and print the school name and all student names in the console. Check how much time this took. See if you can make this faster.

What to hand in:

1. A separate zip file with the solution of part A
2. A separate zip file with the solution of part B
3. A separate zip file with the solution of part C