Tutorial of Connection Pool

> Designed by ZHU Yueming in 2022 May. 8th

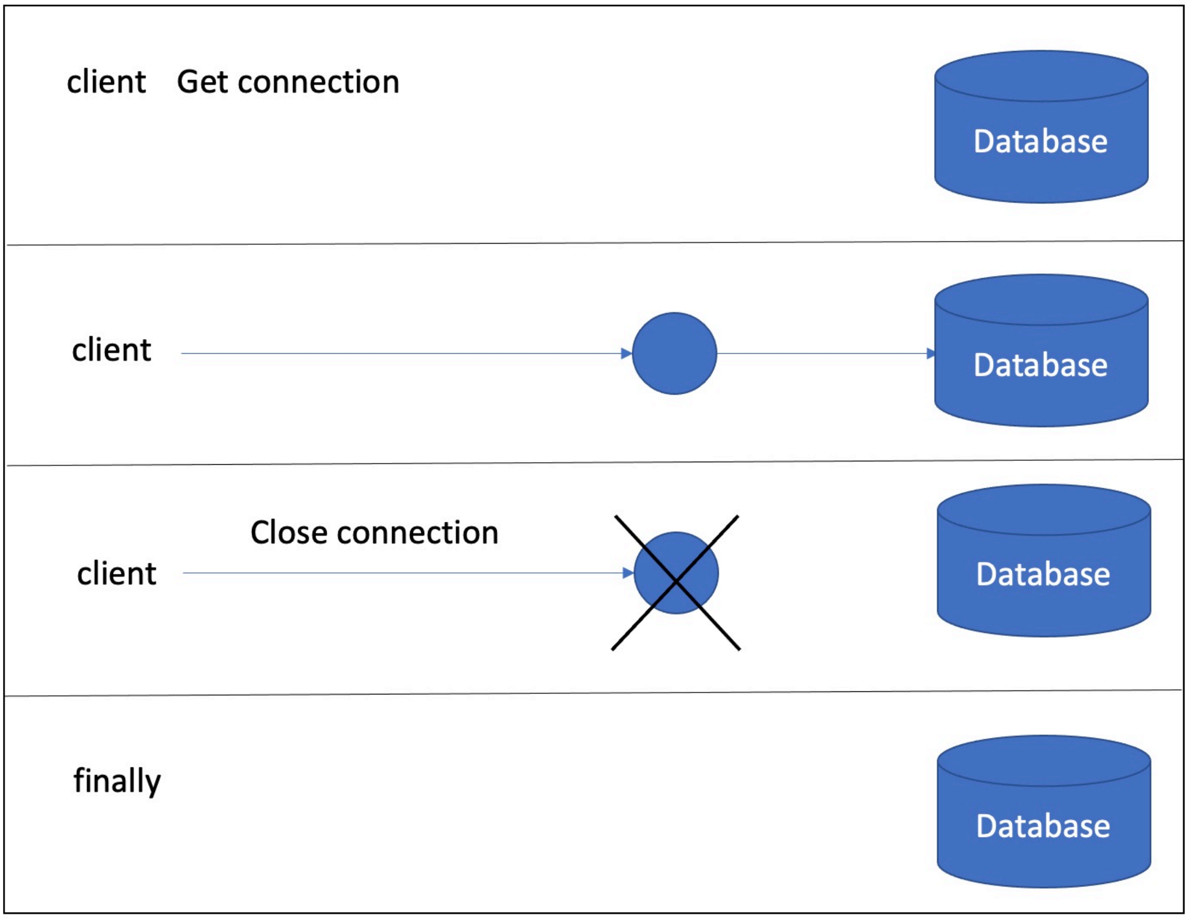
Experimental-Objective

1. Understand the principle of Connection pool
2. Can refactor your code by using connection pool to visit DBMS

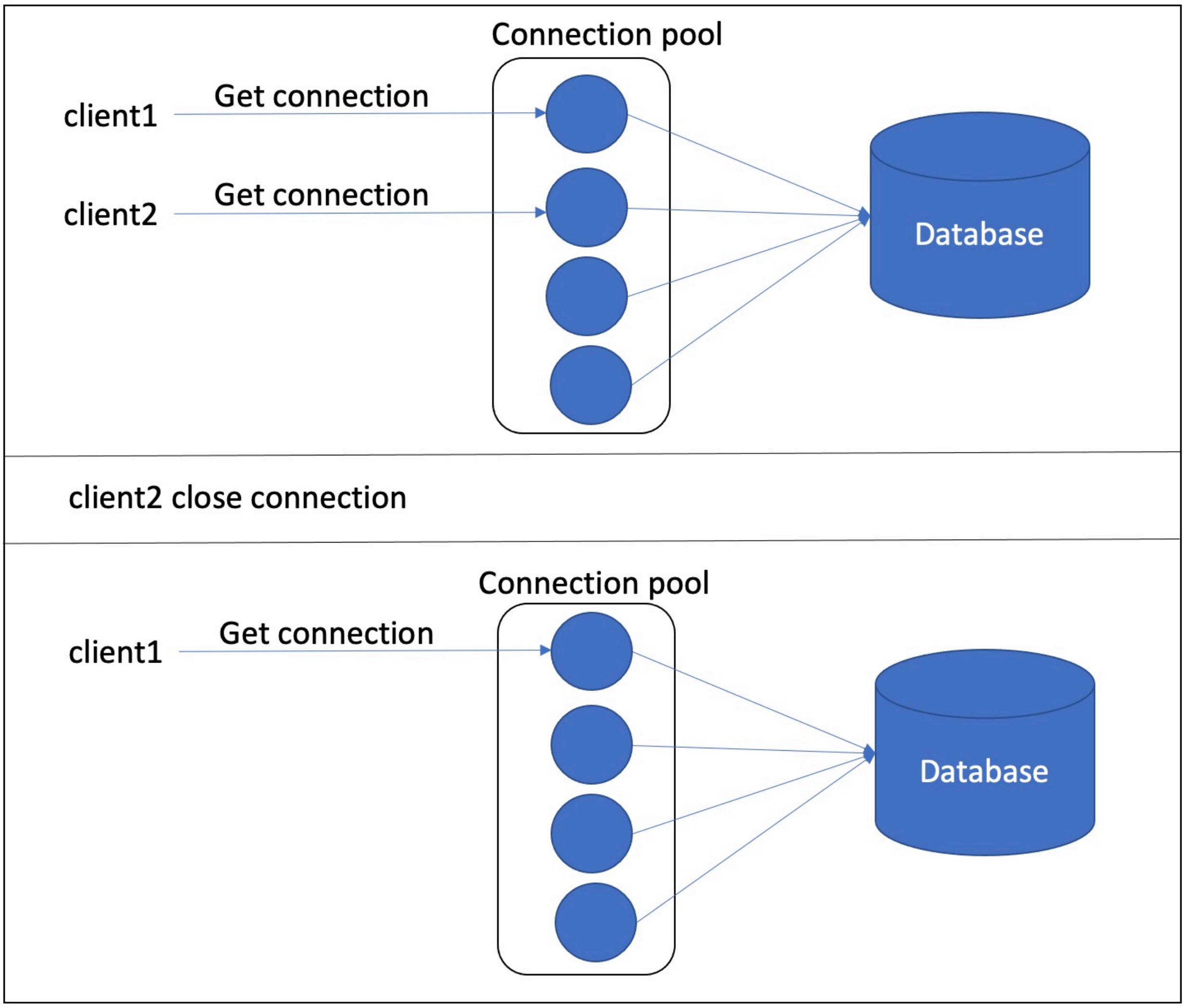
What the connection pool helps?

Connection pool serves as a collection which contains several opening database connections that can be reused by database requests. In fact, establishing a database connection is a time-consuming operation, and the process will include network link, user authentication and so on.

For ordinary process:



Using connection pool:



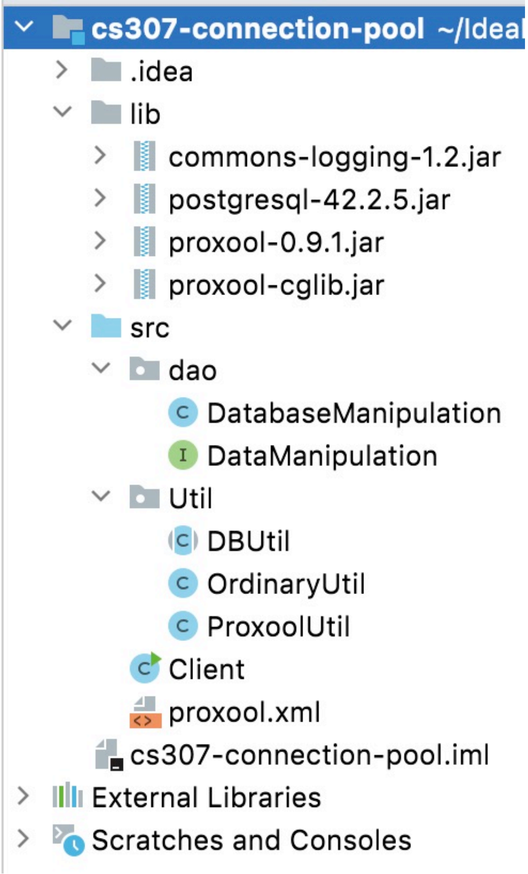
Build Your Project

1. Import data into database

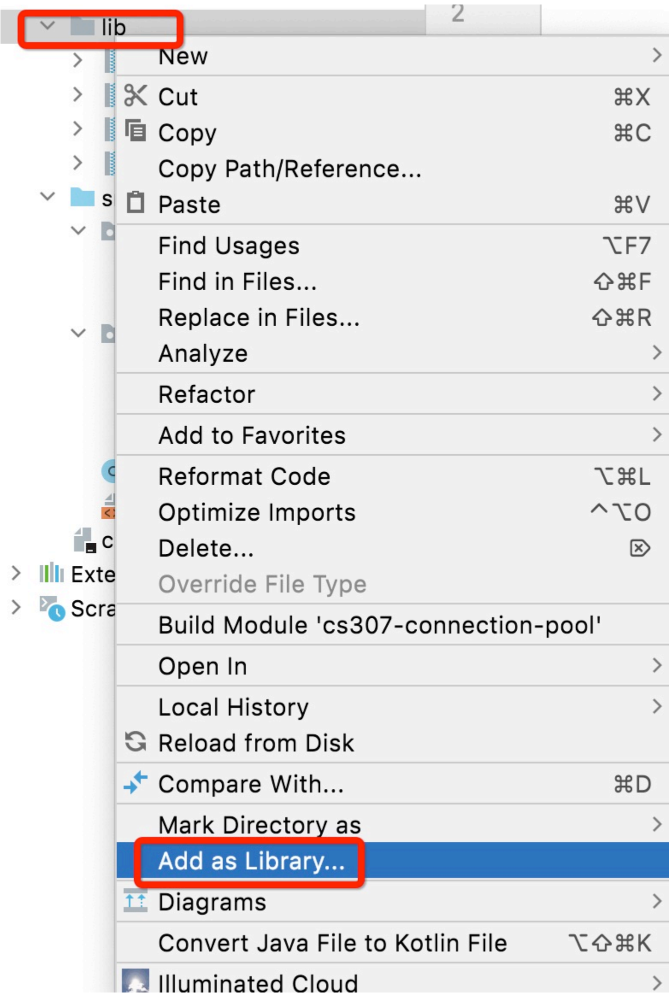
load all data from `shenzhen_metro.sql` into database

2. In IntelliJ IDEA

- The structure of your project should be:



- Add lib folder to project library



- Configure your `protocol.xml`

```
   <proxool>
        <alias>postgres</alias>
        <driver-url>jdbc:postgresql://127.0.0.1:5432/cs307</driver-url>
        <driver-class>org.postgresql.Driver</driver-class>
        <driver-properties>
            <property name="user" value="checker"/>
            <property name="password" value="123456"/>
        </driver-properties>
        <minimum-connection-count>5</minimum-connection-count>
        <maximum-connection-count>10</maximum-connection-count>

    </proxool>
```

Minimum connection count: Opening five database connections at the original time.

Maximum connection count: The max count of opening database connections.

How to Run it?

- Using Ordinary way:

  In `Client.java`

  In `dbRequestArrived(int count)` method

  Change statement:

  ```
  DataManipulation dm = new DatabaseManipulation(OrdinaryUtil.getInstance());
  ```

- Using ProxoolUtil Connection Pool:

  In `Client.java`

  In `dbRequestArrived(int count)` method

  Change statement:

  ```
  DataManipulation dm = new DatabaseManipulation(ProxoolUtil.getInstance());
  ```