Summer 2021 CS213 Project Part 3

> contributors:
>
> Zhu Yueming , Yu Tiancheng, Lu Hongyi, Wang Ziqin, Wang Weiyu, He Yirui, Yang Xiaosu

Overview

It is a one-person group project. Each student should finish the project by himself/herself and submit your **source code** and **sql file**. The presentation(no need PPT) online will be hosted on 27th July 2021, more detail will in the Announcement given later.

You should submit a report before the deadline, the **Topscore will be 100**; for the report submitted after the deadline and before the resubmission date, the **Topscore will be 80**; for the report submitted after the resubmission date, the **score will be 0**.

Please be honest. DO NOT copy ANY words, figures and others from the Internet and others.

DBMS can help us to manage data conveniently, and improve the efficiency of data.

Your work of project Part 3 is mainly divided into the following parts below:

- Implement the service and factory interfaces to pass the base testcases.
- Design your (PostgreSQL) database to satisfy the requirements of interfaces.
- Profile your implementation and find ways to speed it up.
- (Optional) Find other ways to implement similar functionalities as our interfaces and compare (some of) them, are they better, worse or have different use cases.
- Make sure your result of code will be **Correct(Most important)** and **Effective** .

Scource Given:

There are two version for you to choose:

- **The original version**

  java: https://github.com/Annette0127/SUSTech-SQL-Project2-Public

  python: https://github.com/Annette0127/SUSTech-CS307-Project2-Python

This version will offer you big chanllege, read the **README.md** first.

- **The simple version**

Limited by time of summer semester, we rewrite another simple version based on the original version. In this version, we have do some implementation(you also can improve them) yet to help you to familiar with the whole procedure, the classes exactly should be implemented will be reduced to **CourseServiceImplementation** and **StudentServiceImplementation** . We also give you a **partial database(PostgreSQL)** for you to complete to satisfy the requirements of interfaces.

You can choose either of two above, the judge criteria will be the same:

1. **Correctness(Most important)**;
2. **Effectiveness**

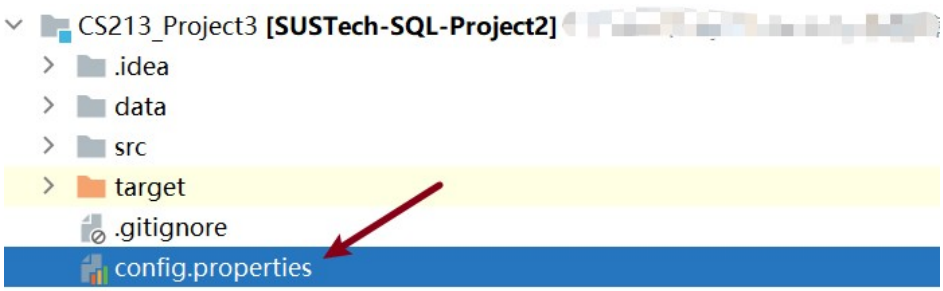
Brief User Manual:

Step1 : Import the source code to your project ;

Step2: Import or create database(PostgreSQL) ;

Step3: Complete the connection informations(**your connection information**) of database in config.properties or config.ini;

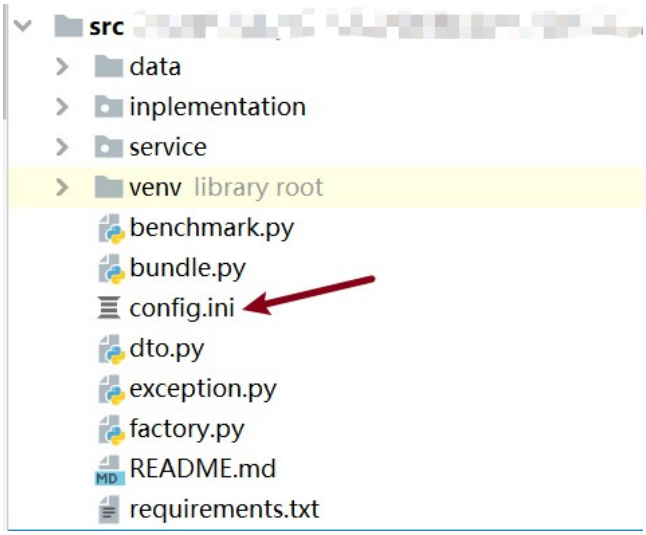
- java



config.properties

```
serviceFactory=Implementation.ServiceFactoryImplementation
jdbcUrl=jdbc:postgresql://localhost:5432/db_test
username=postgres
password=000000
```

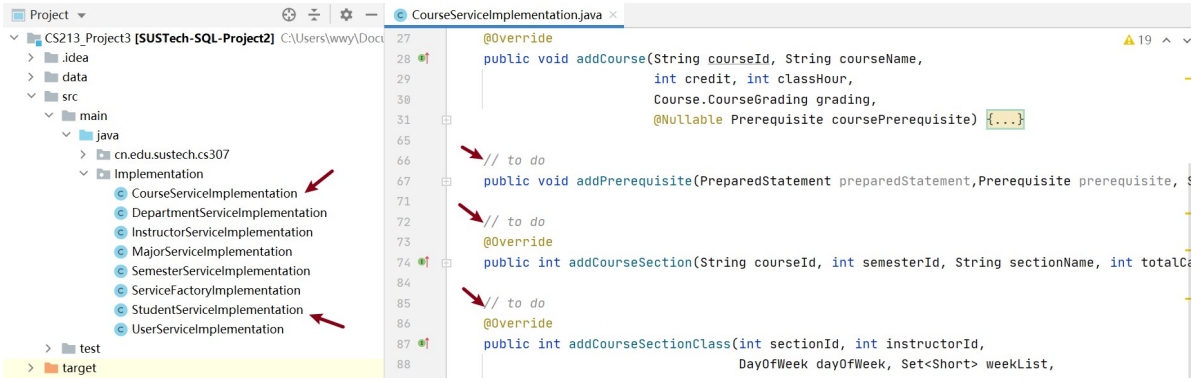
- python

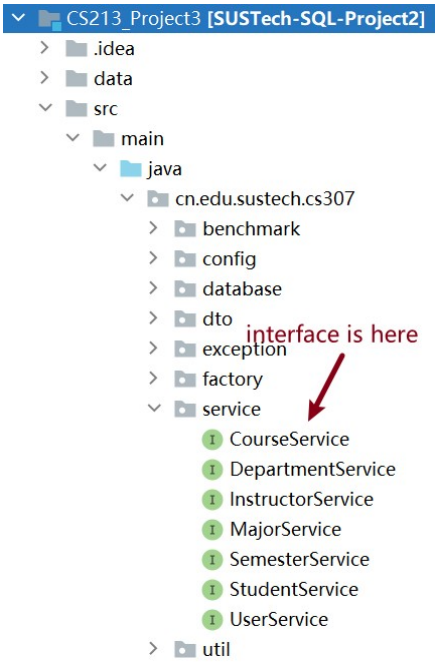


config.ini

```
[database]
host = localhost
port = 5432
database = postgres
username = postgres
password = 000000
```

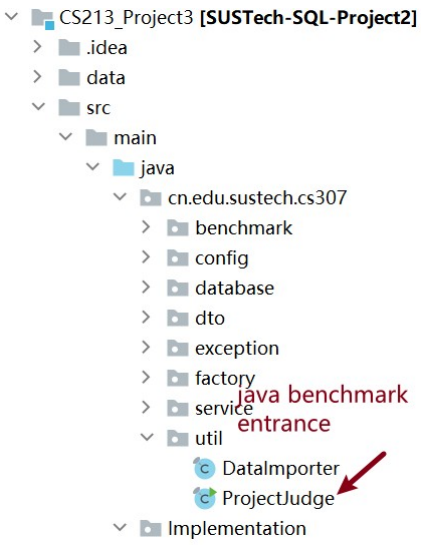
Step4: Complete the implementation class to satisfy the requirements of interfaces. Notice, the database should be completed accordingly;



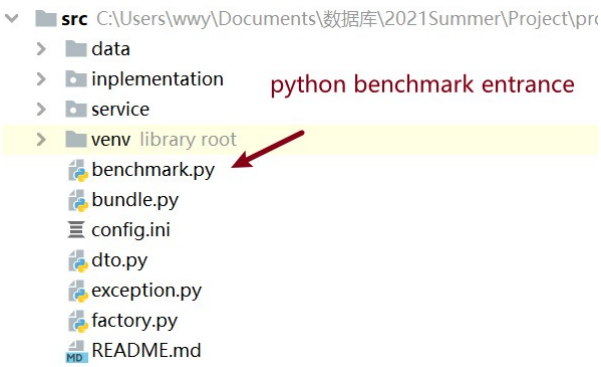


Step5: Run the benchmark, and debug by yourself.

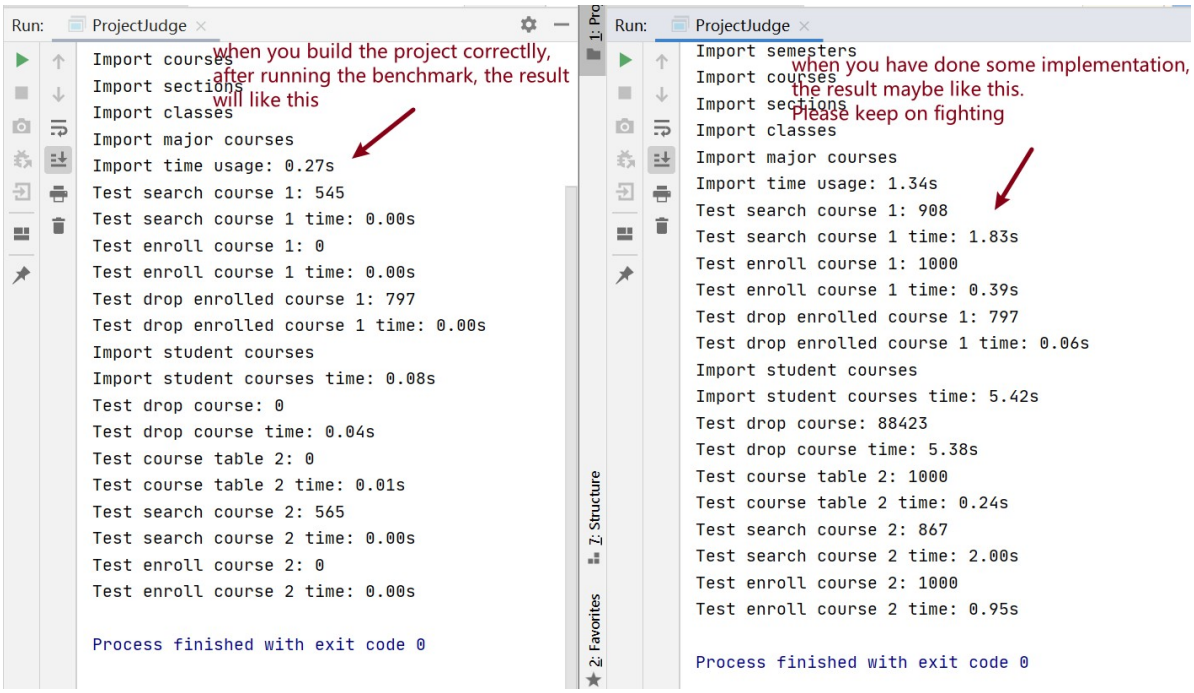
- java



- python



Step6: If you are lucky enough, you will see the following picture soon.



Tips: The result of refer benchmark following as a reference

Group#	查课1	耗时	选课1	耗时	退课1(=)	耗时	导入选课	导入选课	尝试退课(=)	耗时	课表2	耗时	查课2	耗时	选课2	耗时
ref-java	1000	0.33	1000	0.34	797	0.03	2.23	1	88423	0.81	1000	0.07	1000	0.27	1000	0.16