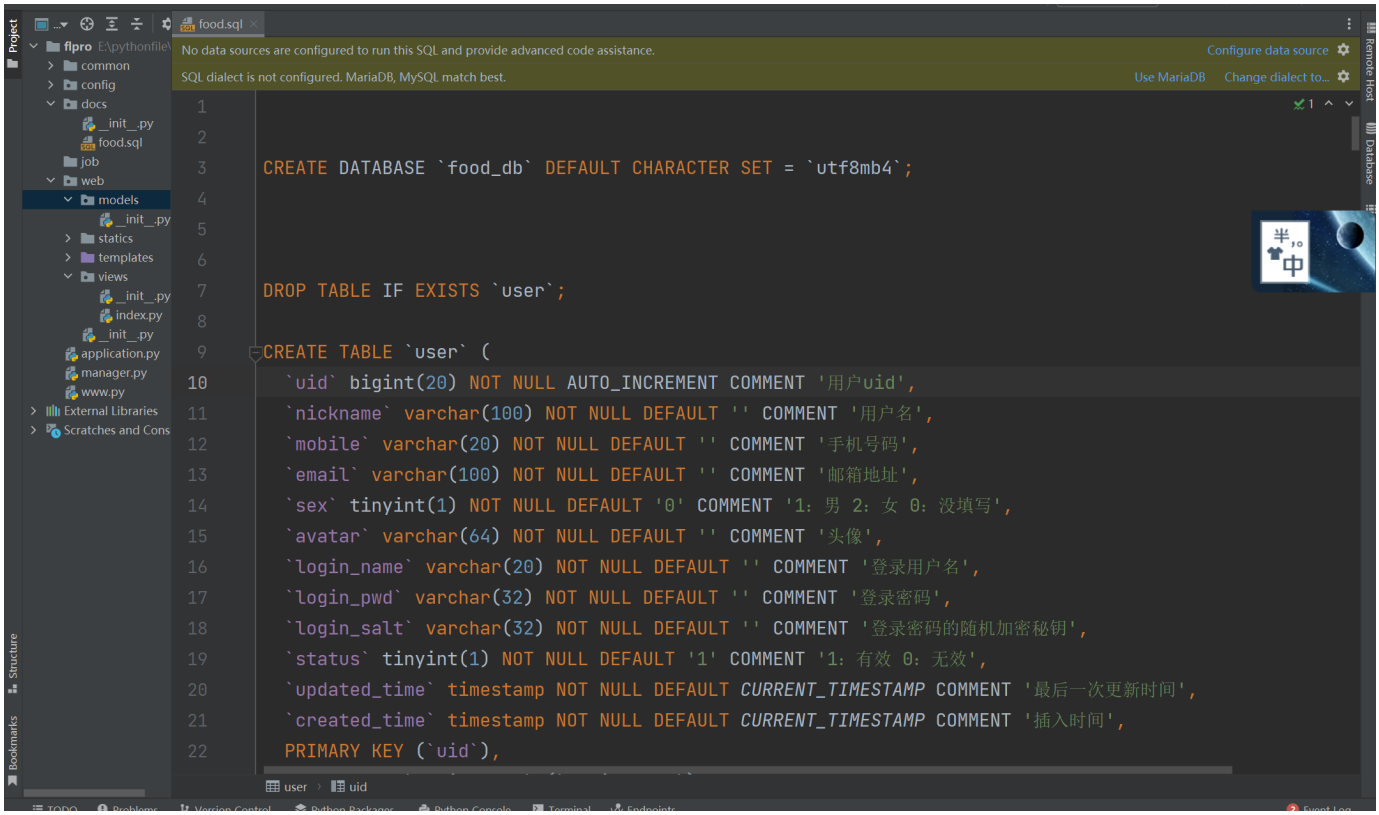
1.建立数据库表

这里我们根据测试数据库提供的food.sql包
使用pycharm打开



打开后复制如下部分

```
CREATE TABLE `user` (
  `uid` bigint(20) NOT NULL AUTO_INCREMENT COMMENT '用户uid',
  `nickname` varchar(100) NOT NULL DEFAULT '' COMMENT '用户名',
  `mobile` varchar(20) NOT NULL DEFAULT '' COMMENT '手机号码',
  `email` varchar(100) NOT NULL DEFAULT '' COMMENT '邮箱地址',
  `sex` tinyint(1) NOT NULL DEFAULT '0' COMMENT '1: 男 2: 女 0: 没填写',
  `avatar` varchar(64) NOT NULL DEFAULT '' COMMENT '头像',
  `login_name` varchar(20) NOT NULL DEFAULT '' COMMENT '登录用户名',
  `login_pwd` varchar(32) NOT NULL DEFAULT '' COMMENT '登录密码',
  `login_salt` varchar(32) NOT NULL DEFAULT '' COMMENT '登录密码的随机加密秘钥',
  `status` tinyint(1) NOT NULL DEFAULT '1' COMMENT '1: 有效 0: 无效',
  `updated_time` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP COMMENT '最后一次更新时间',
  `created_time` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP COMMENT '插入时间',
  PRIMARY KEY (`uid`),
  UNIQUE KEY `login_name` (`login_name`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COMMENT='用户表（管理员）';
```

进入数据库，建表

```
| Database           |
+--------------------+
| information_schema |
| anli               |
| anli2              |
| db_books           |
| demo_book          |
| fldemo             |
| food_db            |
| mysql              |
| performance_schema |
| py                 |
| test               |
| v2ex               |
| xiaodemo           |
| xiaoyu_demo        |
+--------------------+
14 rows in set (0.02 sec)

mysql> use food_db
Database changed
mysql> CREATE TABLE `user` ( `uid` bigint(20) NOT NULL AUTO_INCREMENT COMMENT '用户uid', `nickname` varchar(100) NOT NULL DEFAULT '' COMMENT '用户名', `mobile` varchar(20) NOT NULL DEFAULT '' COMMENT '手机号码', `email` varchar(100) NOT NULL DEFAULT '' COMMENT '邮箱地址', `sex` tinyint(1) NOT NULL DEFAULT '0' COMMENT '1：男 2：女 0：没填写', `avatar` varchar(64) NOT NULL DEFAULT '' COMMENT '头像', `login_name` varchar(20) NOT NULL DEFAULT '' COMMENT '登录用户名', `login_pwd` varchar(32) NOT NULL DEFAULT '' COMMENT '登录密码', `login_salt` varchar(32) NOT NULL DEFAULT '' COMMENT '登录密码的随机加密秘钥', `status` tinyint(1) NOT NULL DEFAULT '1' COMMENT '1：有效 0：无效', `updated_time` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP COMMENT '最后一次更新时间', `created_time` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP COMMENT '插入时间', PRIMARY KEY (`uid`), UNIQUE KEY `login_name` (`login_name`)) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COMMENT='用户表（管理员）';
Query OK, 0 rows affected (0.03 sec)

mysql>
```

查看

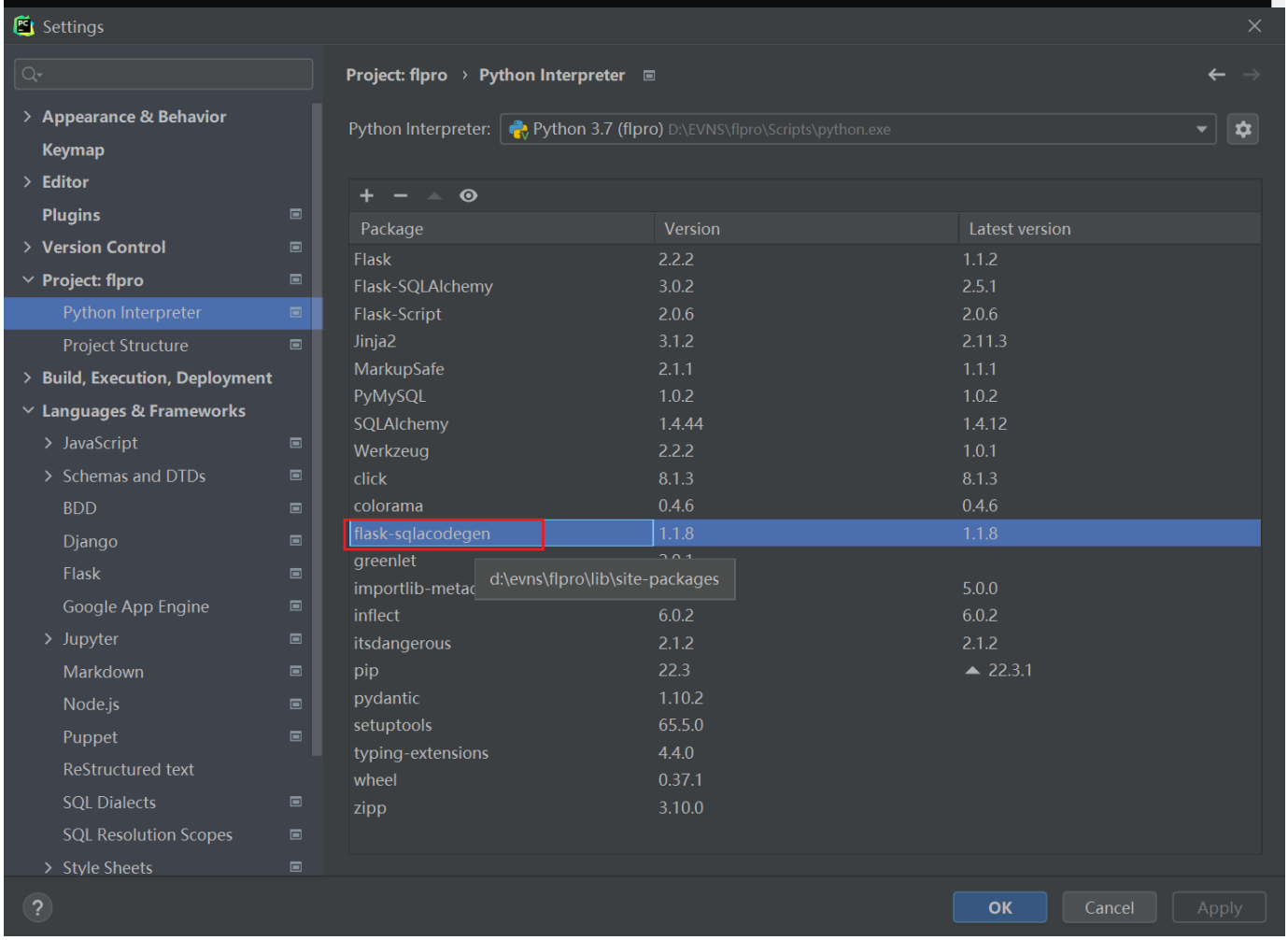
```
mysql> show tables;
+--------------------+
| Tables_in_food_db  |
+--------------------+
| user               |
+--------------------+
1 row in set (0.01 sec)
```

2.自动反推ORM类

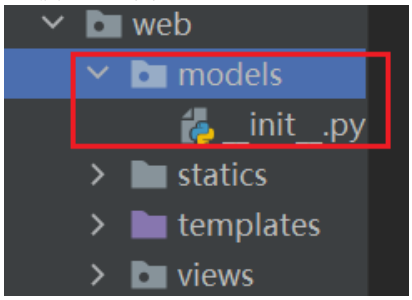
==**安装**==

```
flask-sqlacodegen --- 此模块根据表自动反推ORM类

pip install flask-sqlacodegen -i https://pypi.tuna.tsinghua.edu.cn/simple
```

```
(flpro) E:\pythonfile\pro_food>pip install flask-sqlacodegen -i https://pypi.tuna.tsinghua.edu.cn/simple
Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple
Collecting flask-sqlacodegen
  Downloading https://pypi.tuna.tsinghua.edu.cn/packages/1d/c6/8291762360b426ed46b6d90765a3037de48862320586e50d21c71bbaa51d/flask_sqlacodegen-1.1.8-py2.py3-none-any.whl (12 kB)
Requirement already satisfied: SQLAlchemy>=0.6.0 in d:\evns\flpro\lib\site-packages (from flask-sqlacodegen)
Collecting inflect>=0.2.0
  Downloading https://pypi.tuna.tsinghua.edu.cn/packages/67/e2/bcd7099b31d6a1f7be358f7ef7cf6fc97cc5a66353784f[illegible]243fb/inflect-6.0.2-py3-none-any.whl (34 kB)
Collecting pydantic>=1.9.1
  Downloading https://pypi.tuna.tsinghua.edu.cn/packages/dc/bf/5965230bf0547c5fa0005984564146dcc414e6e8b6349177eca413761013/pydantic-1.10.2-cp37-cp37m-win_amd64.whl (2.1 MB)
     ---------------------------------------- 2.1/2.1 MB 1.4 MB/s eta 0:00:00
Requirement already satisfied: importlib-metadata in d:\evns\flpro\lib\site-packages (from SQLAlchemy>=0.6.0->flask-sqlacodegen) (5.0.0)
Requirement already satisfied: greenlet!=0.4.17 in d:\evns\flpro\lib\site-packages (from SQLAlchemy>=0.6.0->flask-sqlacodegen) (2.0.1)
Requirement already satisfied: typing-extensions>=4.1.0 in d:\evns\flpro\lib\site-packages (from pydantic>=1.9.1->inflect>=0.2.0->flask-sqlacodegen) (4.4.0)
Requirement already satisfied: zipp>=0.5 in d:\evns\flpro\lib\site-packages (from importlib-metadata->SQLAlchemy>=0.6.0->flask-sqlacodegen) (3.10.0)
Installing collected packages: pydantic, inflect, flask-sqlacodegen
Successfully installed flask-sqlacodegen-1.1.8 inflect-6.0.2 pydantic-1.10.2

[notice] A new release of pip available: 22.3 -> 22.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip
```

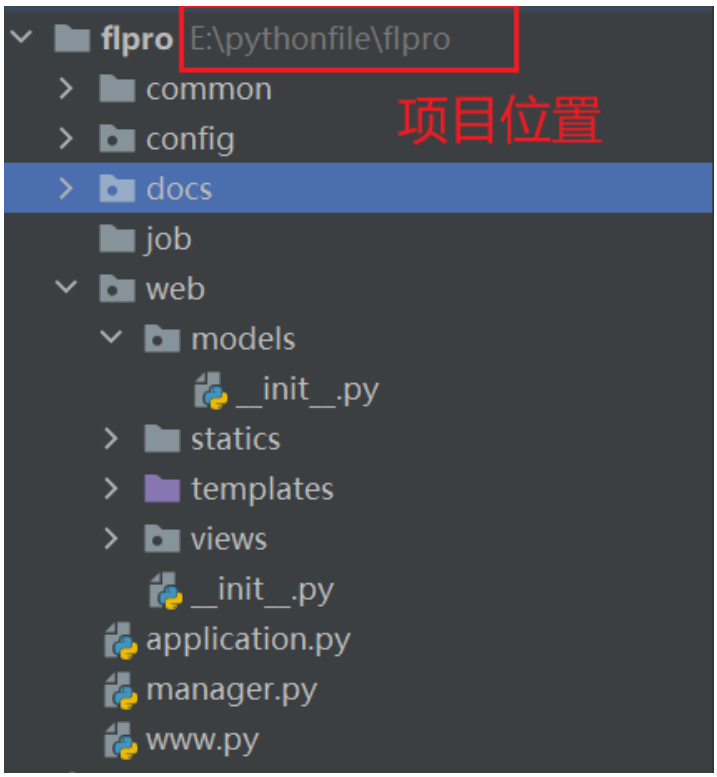


==反推orm类==

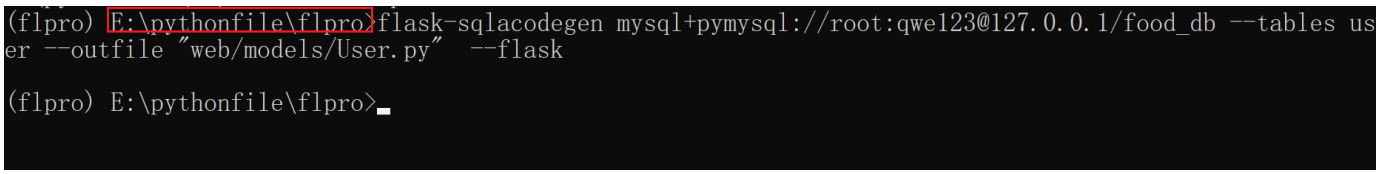


```
flask-sqlacodegen mysql+pymysql://root:qwe123@127.0.0.1/food_db --tables user --outfile "web/models/User.py"  --flask

# 因为使用pymysql连接，因此mysql+pymysql
# flask-sqlacodegen mysql+pymysql://mysql用户名:用户密码@127.0.0.1/food_db --tables 目标表名 --outfile "指定存放文件位置"  --flask
```

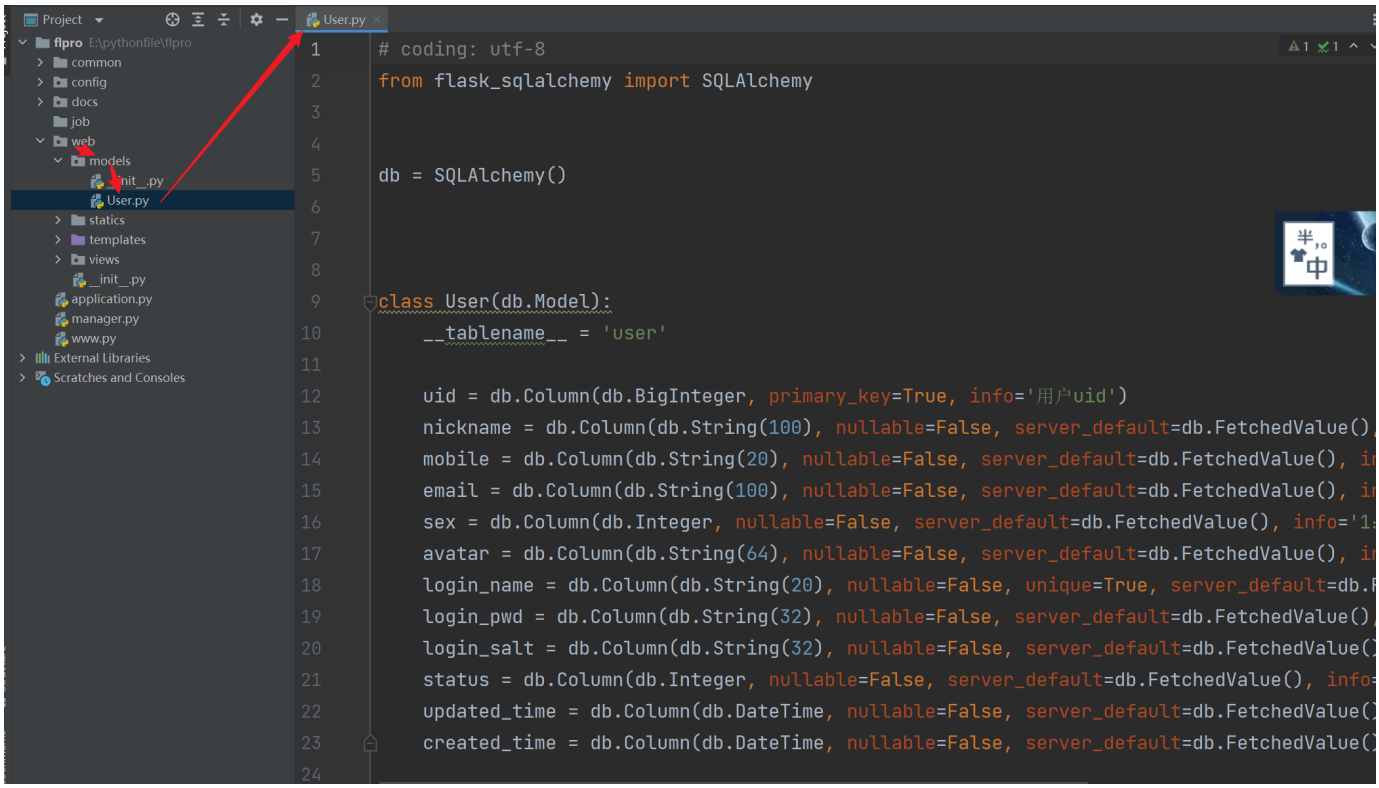
找到项目位置



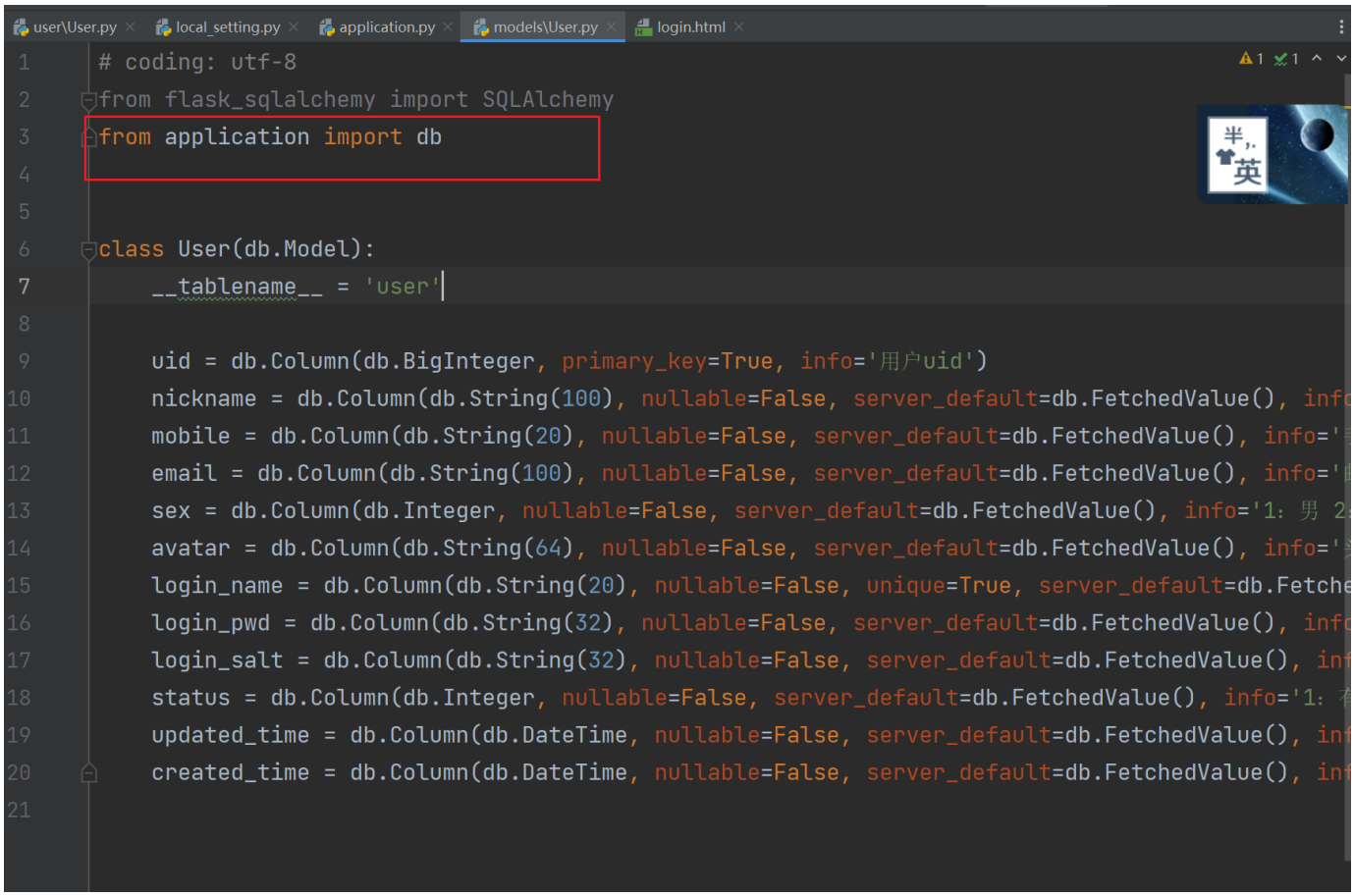
找到相应位置，执行推导命令
使用虚拟环境，注意虚拟环境切换



执行完毕无异常后 回到项目中查看



此时db对象时独立实例的，这与项目毫无关系，因此我们需要使用我们项目中的db实例对象



3.用户数据导入

```
INSERT INTO `user` (`uid`, `nickname`, `mobile`, `email`, `sex`, `avatar`, `login_name`, `login_pwd`, `login_salt`,
`status`, `updated_time`, `created_time`)
VALUES (1, '风勋帅
```

```
帅', '11012345679', '111111@163.com', 1, '', 'fengxun', '816440c40b7a9d55ff9eb7b20760862c', 'cF3JfH5FJfQ8B2Ba', 1, '2021-03-15 14:08:48', '2021-03-15 14:08:48');
```

```
mysql> use food_db
Database changed
mysql> INSERT INTO `user` (`uid`, `nickname`, `mobile`, `email`, `sex`, `avatar`, `login_name`, `login_pwd`, `login_salt`, `status`, `updated_time`, `created_time`)VALUES (1, '风勋帅帅', '11012345679', '111111@163.com', 1, '', 'fengxun', '816440c40b7a9d55ff9eb7b20760862c', 'cF3JfH5FJfQ8B2Ba', 1, '2021-03-15 14:08:48', '2021-03-15 14:08:48');
Query OK, 1 row affected (0.00 sec)

mysql>
```

```
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use food_db
Database changed
mysql> INSERT INTO `user` (`uid`, `nickname`, `mobile`, `email`, `sex`, `avatar`, `login_name`, `login_pwd`, `login_salt`, `status`, `updated_time`, `created_time`)VALUES (1, '风勋帅帅', '11012345679', '111111@163.com', 1, '', 'fengxun', '816440c40b7a9d55ff9eb7b20760862c', 'cF3JfH5FJfQ8B2Ba', 1, '2021-03-15 14:08:48', '2021-03-15 14:08:48');
Query OK, 1 row affected (0.00 sec)

mysql> select * from user;
+-----+----------+-------------+----------------+-----+--------+------------+--------------------------------+--------------+--------+---------------------+---------------------+
| uid | nickname | mobile      | email          | sex | avatar | login_name | login_pwd                      | login_salt   | status | updated_time        | created_time        |
+-----+----------+-------------+----------------+-----+--------+------------+--------------------------------+--------------+--------+---------------------+---------------------+
|   1 | 风勋帅帅 | 11012345679 | 111111@163.com |   1 |        | fengxun    | 816440c40b7a9d55ff9eb7b20760862c | cF3JfH5FJfQ8B2Ba |      1 | 2021-03-15 14:08:48 | 2021-03-15 14:08:48 |
+-----+----------+-------------+----------------+-----+--------+------------+--------------------------------+--------------+--------+---------------------+---------------------+
1 row in set (0.00 sec)

mysql>
```

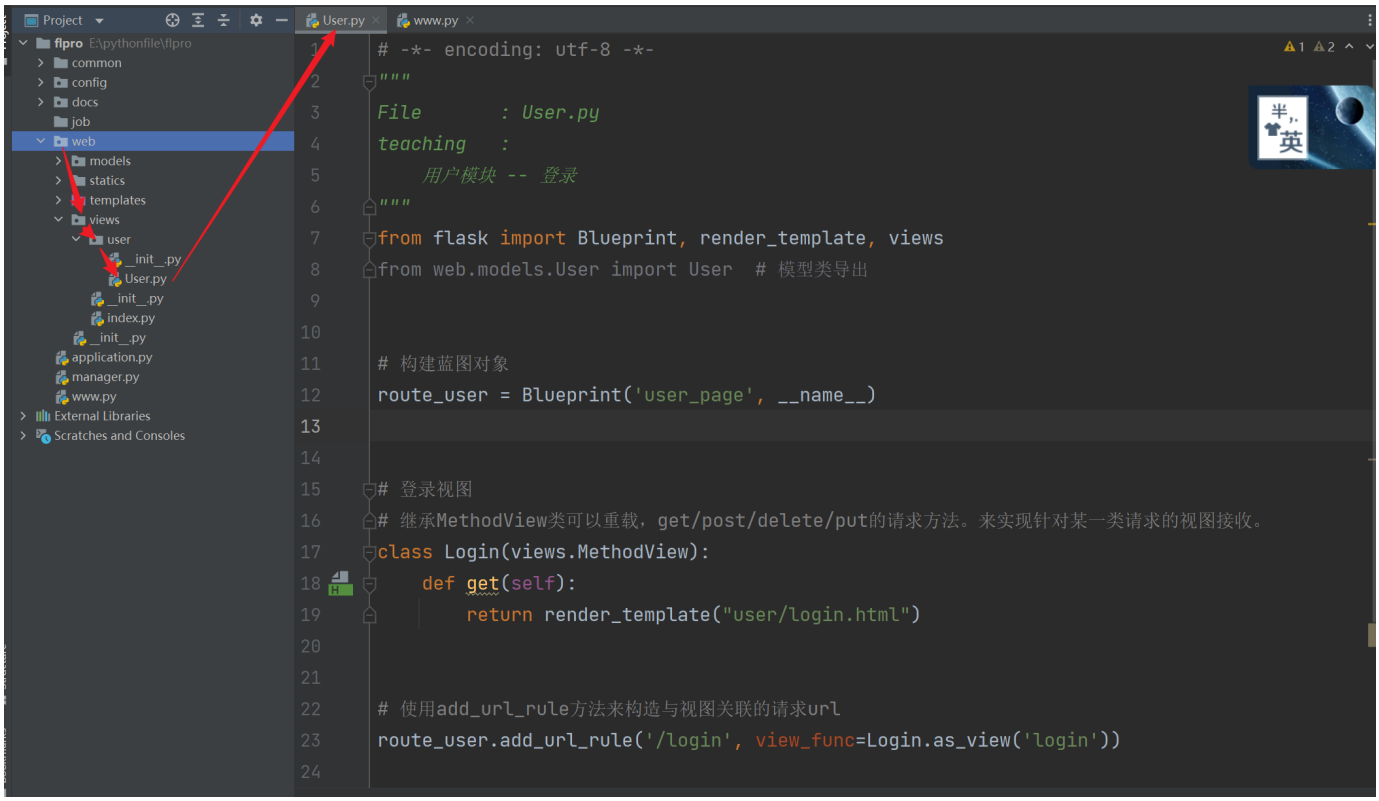
用户名为 fengxun
密码为 123456

4.登录视图建立

函数视图在目前开发中便捷的确好，但是其维护性不太好

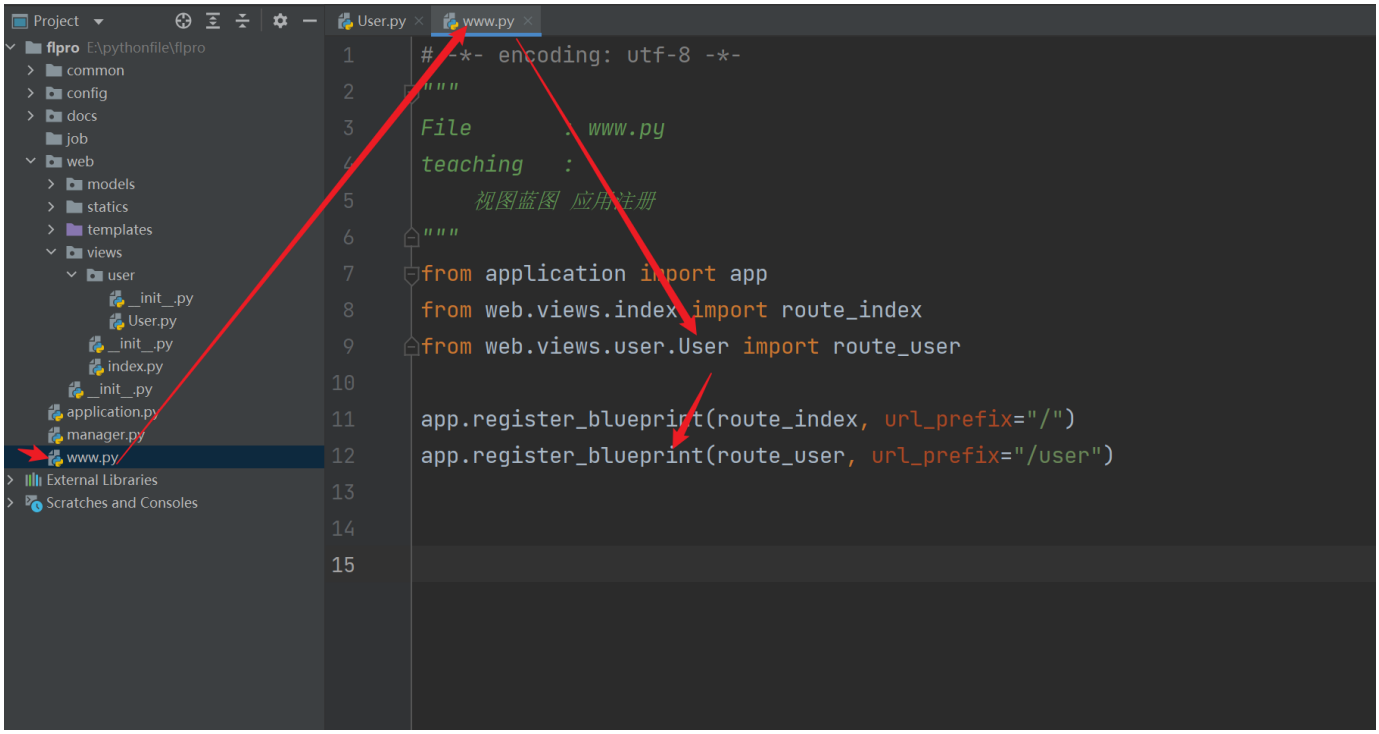
因此 类视图 优先选择

那么同学们注意类视图结合蓝图的操作



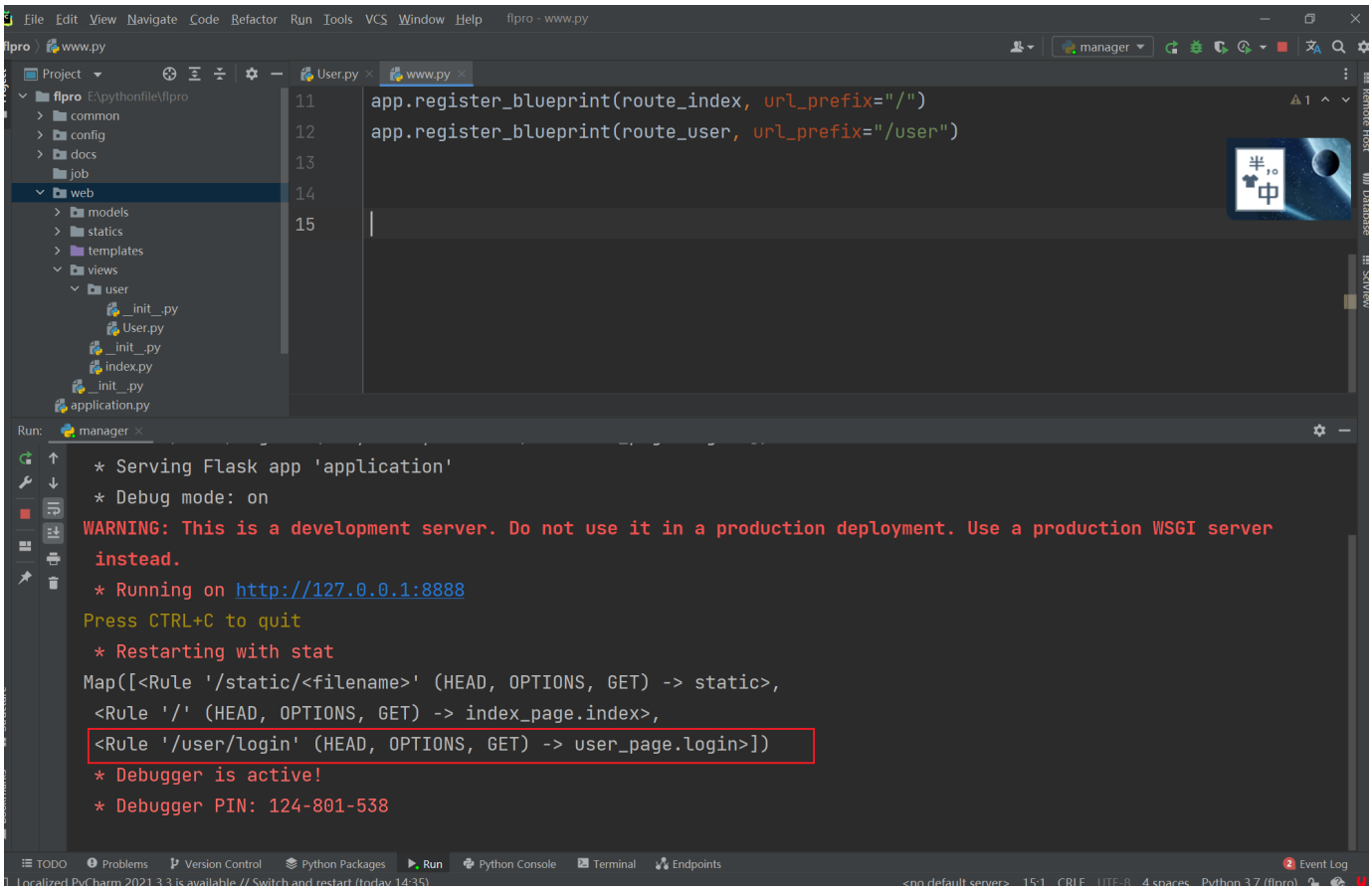

```
# -*- encoding: utf-8 -*-
"""
File       : User.py
teaching   :
    用户模块 -- 登录
"""
from flask import Blueprint, render_template, views
from web.models.User import User  # 模型类导出


# 构建蓝图对象
route_user = Blueprint('user_page', __name__)


# 登录视图
# 继承MethodView类可以重载，get/post/delete/put的请求方法。来实现针对某一类请求的视图接收。
class Login(views.MethodView):
    def get(self):
        return render_template("user/login.html")


# 使用add_url_rule方法来构造与视图关联的请求url
# 继承自模板的as_view方法可以将类转换为可以为路由注册的视图函数
# as_view('login') --- 传入的是站点名（标准操作是视图名小写 Login -- login）
#       <Rule '/user/login' (GET, HEAD, OPTIONS) -> user_page.login>] user_page.login中的login就是as_view指明的站点名
route_user.add_url_rule('/login', view_func=Login.as_view('login'))
```

==注册蓝图对象==




```
# -*- encoding: utf-8 -*-
"""
File       : www.py
teaching   :
    视图蓝图 应用注册
"""
from application import app
from web.views.index import route_index
from web.views.user.User import route_user

app.register_blueprint(route_index, url_prefix="/")
app.register_blueprint(route_user, url_prefix="/user")
```

启动

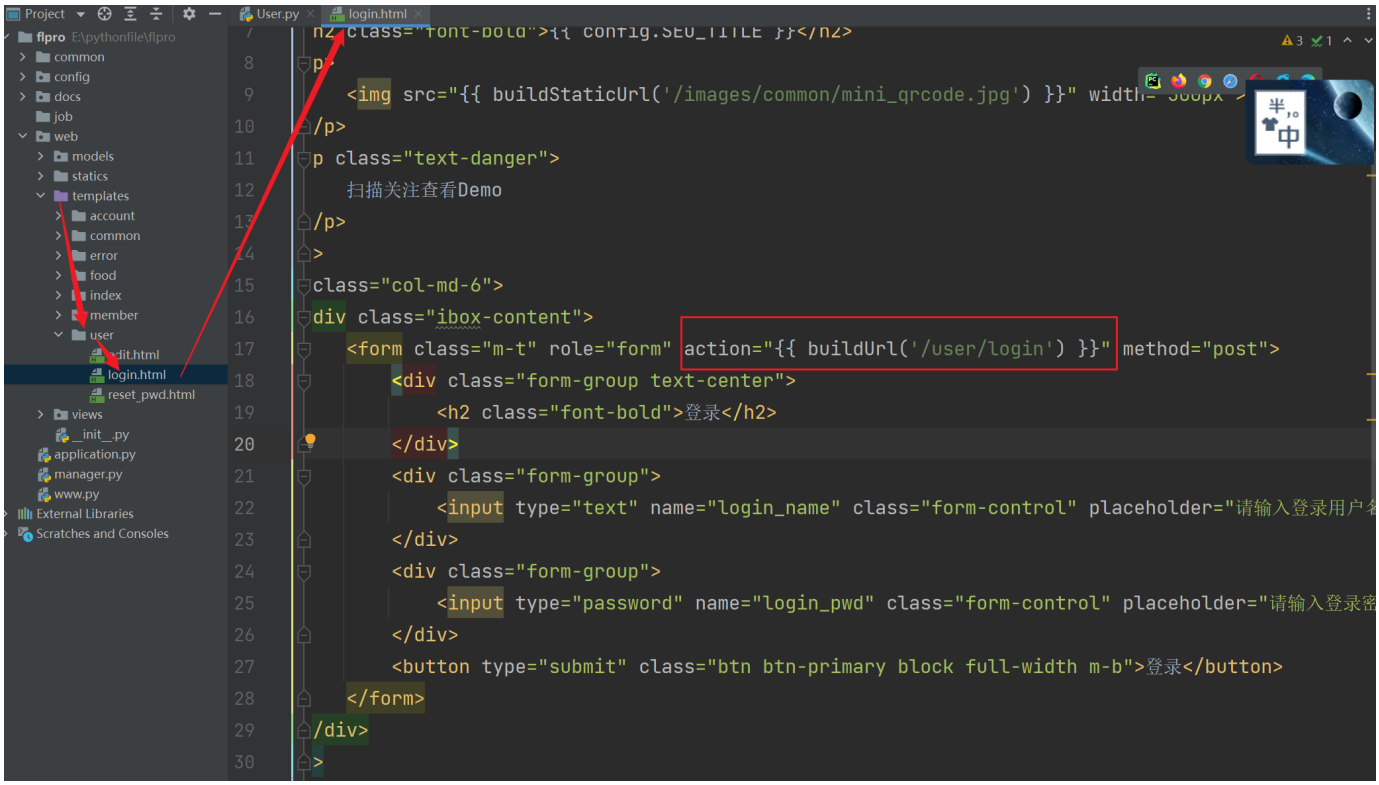


访问 http://127.0.0.1:8888/user/login

5.登录表单分析

==分析提交方式==

根据login.html分析我们可以知道 --- 此处采用的表单数据提交方式为默认方式并未通过ajax进行处理



这里有个buildUrl方法：这是我们注册的全局模板函数 --- 参考《1.项目搭建布局》第5点 全局模板函数

==分析数据键==

```
<div class="ibox-content">
    <form class="m-t" role="form" action="{{ buildUrl('/user/login') }}" method="post">
        <div class="form-group text-center">
            <h2 class="font-bold">登录</h2>
        </div>
        <div class="form-group">
            <input type="text" name="login_name" class="form-control" placeholder="请输入登录用户名
        </div>
        <div class="form-group">
            <input type="password" name="login_pwd" class="form-control" placeholder="请输入登录密
        </div>
        <button type="submit" class="btn btn-primary block full-width m-b">登录</button>
    </form>
</div>
```

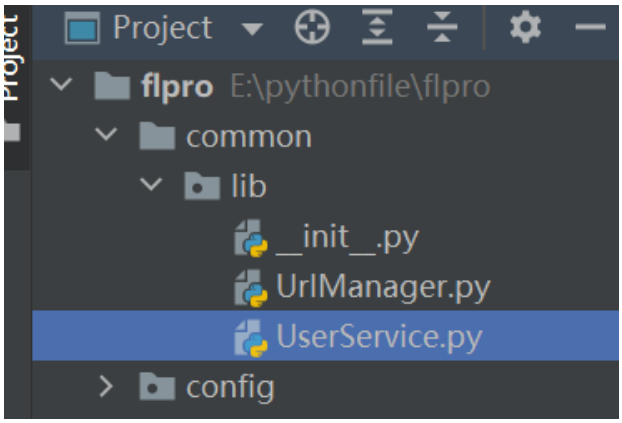
6.数据库密码加密

正式开始之前我们需要 还原用户密码 加密过程

因为密码数据加密是不可逆的

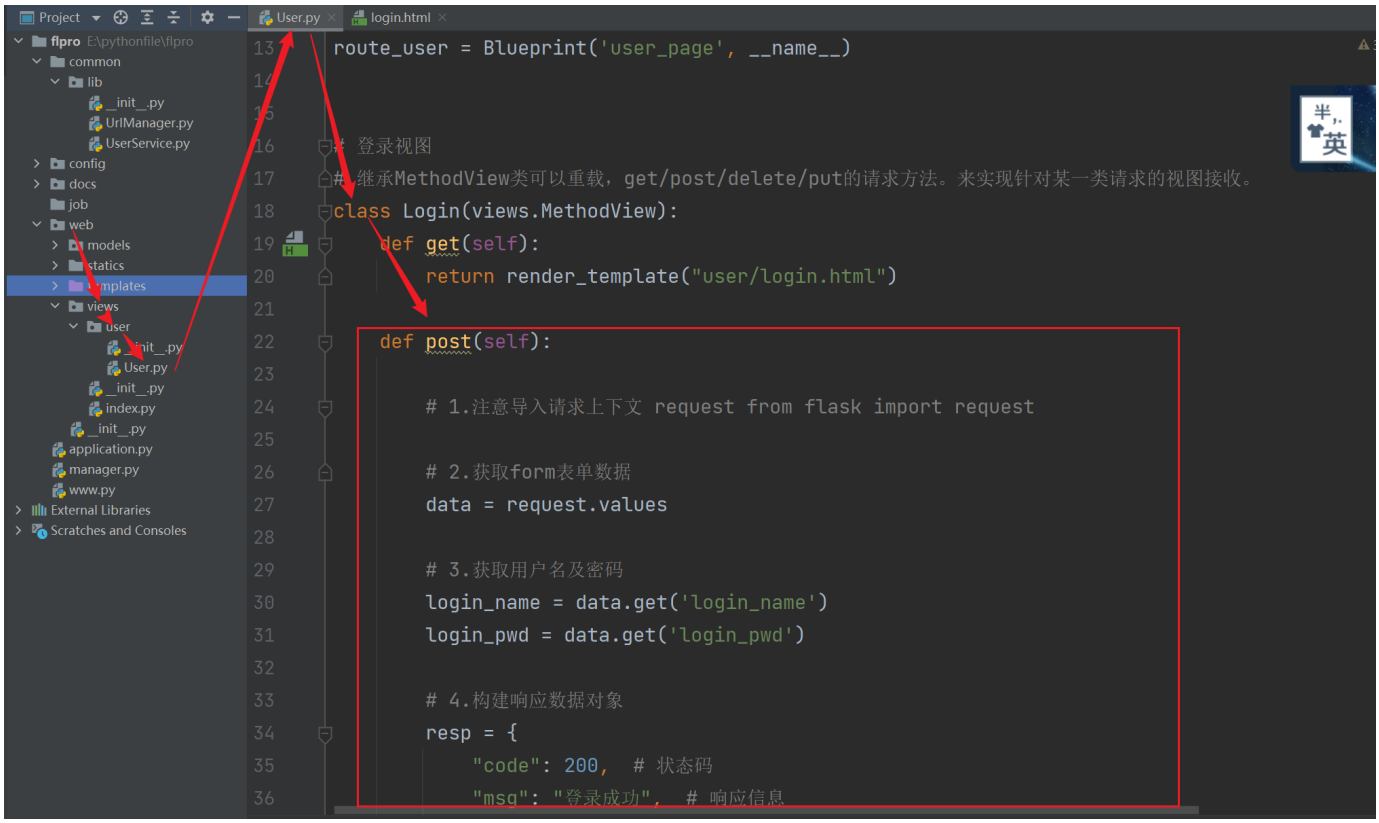
本次项目的数据由于是提前定好的，所以我们就直接还原过程

common/lib目录下建立UserService.py文件




```
# -*-coding:utf-8-*-
# common/lib/UserService.py
import hashlib, base64


class UserService():

    @staticmethod
    def genPwd(pwd, salt):
        """
        密码加密
        :param pwd: 密码
        :param salt: 加密盐
        :return: 加密
        """

        # base64加密
        pwd_base64 = base64.encodebytes(pwd.encode("utf-8"))  # 将 密码 bs64加密
        data_str = f"{pwd_base64}-{salt}"  # 拼接 加密密码数据 与盐拼接

        # md5加密
        m = hashlib.md5()  # 实例md5加密对象
        m.update(data_str.encode("utf-8"))  # 加密
        return m.hexdigest()  # 获取加密数据


if __name__ == '__main__':
    # 加密后数据: 816440c40b7a9d55ff9eb7b20760862c
    # 加密盐: cF3JfH5FJfQ8B2Ba
    # 原数据: 123456
    print(UserService.genPwd('123456', 'cF3JfH5FJfQ8B2Ba'))  # 816440c40b7a9d55ff9eb7b20760862c
```

8.登录实现




```
# -*- encoding: utf-8 -*-
"""
File       : User.py
teaching   :
    用户模块 -- 登录
"""
from flask import Blueprint, render_template, views, request, jsonify, url_for, redirect
from web.models.User import User  # 模型类导出
from common.lib.UserService import UserService


# 构建蓝图对象
route_user = Blueprint('user_page', __name__)


# 登录视图
# 继承MethodView类可以重载，get/post/delete/put的请求方法。来实现针对某一类请求的视图接收。
class Login(views.MethodView):
    def get(self):
        return render_template("user/login.html")

    def post(self):

        # 1.注意导入请求上下文 request from flask import request

        # 2.获取form表单数据
        data = request.values

        # 3.获取用户名及密码
        login_name = data.get('login_name')
        login_pwd = data.get('login_pwd')

        # 4.构建响应数据对象
        resp = {
            "code": 200,  # 状态码
            "msg": "登录成功",  # 响应信息
            "data": {}  # 响应数据
        }

        # 5.判断数据是否获取及其是否满足要求
        if (not login_name) or len(login_name) < 1:
```

```
            # 用户名没有数据 或者 用户名长度小于1
            resp["code"] = -1
            resp["msg"] = "请输入正确的登录用户名"
            # 导入 jsonify --- from flask import jsonify
            return jsonify(resp)

        if (not login_pwd) or len(login_pwd) < 1:
            # 密码没有数据 或者 密码长度小于1
            resp["code"] = -1
            resp["msg"] = "请输入正确的密码"
            return jsonify(resp)  # 响应json数据

        # 6.根据用户名查询用户是否存在于数据库
        user_info = User.query.filter_by(login_name=login_name).first()
        if not user_info:  # 数据库查不到 -- 即不存在
            resp["code"] = -1
            resp["msg"] = "请输入正确的用户名或密码"
            return jsonify(resp)  # 响应json数据

        # 7.用户存在 -- 加密密码
        salt = user_info.login_salt  # 根据user_info对象数据 获取数据库中的用户密码 加密盐
        # 加密方法 from common.lib.UserService import UserService
        gen_pwd = UserService.genPwd(login_pwd, salt)  # 跟注册时相同的加密机制 -- 获得加密数据

        # 8.将秘密加密数据 与 数据库密码数据进行比对

        if user_info.login_pwd != gen_pwd:
            # 不相同，说明密码或者用户名不对
            resp["code"] = -1
            resp["msg"] = "请输入正确的用户名或密码"
            return jsonify(resp)

        # 9.登录成功 重定向首页 from flask import url_for, redirect
        return redirect(url_for('index_page.index'))


# 使用add_url_rule方法来构造与视图关联的请求url
# 继承自模板的as_view方法可以将类转换为可以为路由注册的视图函数
# as_view('login') --- 传入的是站点名（标准操作是视图名小写 Login -- login）
#       <Rule '/user/login' (GET, HEAD, OPTIONS) -> user_page.login>] user_page.login中的login就是as_view指明的站点名
route_user.add_url_rule('/login', view_func=Login.as_view('login'))
```

完成后记得-启动登录测试

数据库中的用户： fengxun 密码：123456