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作业7

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- 1. 创建data2表
- 2. 将data3.csv的表格导入到mysql中，使用python编写SQL语句
 - 导入data3
 - a、列查询
 - b、行查询
 - c、在表中添加一行数据
 - d、条件查询：查询name等于“吴”和列名等于“grade”的数据
 - e、条件查询：查询2020级中class1的成绩大于95的学生的id和name
 - f、计算2020级class1~class8所有科目的平均值

1. 创建data2表

要求：

- 使用python连接SQL语句创建一个叫data2的表；
- 使用python连接SQL语句将数据插入到表data2中；

The screenshot shows the Navicat Premium interface. On the left, the 'Object Explorer' pane shows a tree view of the database 'data2' under the '作业' (Assignment) folder. The 'Table' folder is expanded, showing 'data1', 'data2', and 'data99'. The 'Table' folder is selected, and the 'Table' icon is highlighted. The main pane displays the 'Table' view for 'data2'. The table has 6 columns: id, name, sex, birth, department, and address. The data is as follows:

id	name	sex	birth	department	address
901	张老大	男	1985	计算机系	北京市海淀区
902	张老二	男	1986	中文系	北京市昌平区
903	张三	女	1990	中文系	湖南省永州市
904	李四	男	1990	英语系	辽宁省阜新市
905	王五	女	1991	英语系	福建省厦门市
906	王六	男	1988	计算机系	湖南省衡阳市

The right pane shows the 'Properties' for the 'id' column, which is a 'varchar(255)' type, 'not null', and has a 'default value (NULL)'. The bottom status bar shows the SQL query: 'SELECT * FROM `作业`.`data2` LIMIT 0,1000'.

```
sql = "select * from data2"
cur.execute(sql)
result2 = cur.fetchall()
print(result2)
```

[6] ✓ 0.1s

Python

```
... (('901', '张老大', '男', '1985', '计算机系', '北京市海淀区'), ('902', '张老二', '男', '1986', '中文系', '北京市昌平区'), ('903', '张三', '女', '1990', '中文系', '湖南省永州市'), ('904', '李四', '男', '1990', '英语系', '辽宁省阜新市'), ('905', '王五', '女', '1991', '英语系', '福建省厦门市'), ('906', '王六', '男', '1988', '计算机系', '湖南省衡阳市'))
```

利用pymysql模块连接，打开游标，利用create table...创建data2并运行sql查看；其次利用insert into ~ () values () 向data2里添加数据，然后运行提交，关闭游标退出连接。

```
import pymysql
conn = pymysql.connect(host = "localhost", user = "root", password = "1024",
                        db = "作业", charset='utf8') ##连接
cur = conn.cursor() # 游标
##手动创建一个表格
sql = '''CREATE TABLE `data2` (
  `id` varchar(255) DEFAULT NULL,
  `name` varchar(255) DEFAULT NULL,
  `sex` varchar(255) DEFAULT NULL,
  `birth` varchar(255) DEFAULT NULL,
  `department` varchar(255) DEFAULT NULL,
  `address` varchar(255) DEFAULT NULL
) ENGINE = InnoDB DEFAULT
CHARSET = utf8mb4
COLLATE = utf8mb4_0900_ai_ci;'''
cur.execute(sql)
result1 = cur.fetchall()
print(result1)

sql = '''INSERT INTO data2 (id,name,sex,birth,department,address) VALUES (901,'张老大','男',1985,'计算机系','北京市海淀区')
'''

sql1 = '''INSERT INTO data2(id, name, sex, birth, department, address) VALUES (902,
'张老二', '男', 1986, '中文系', '北京市昌平区)'''
sql2 = '''INSERT INTO data2(id, name, sex, birth, department, address) VALUES (903,
'张三', '女', 1990, '中文系', '湖南省永州市)'''
sql3 = '''INSERT INTO data2(id, name, sex, birth, department, address) VALUES (904,
'李四', '男', 1990, '英语系', '辽宁省阜新市)'''
sql4 = '''INSERT INTO data2(id, name, sex, birth, department, address) VALUES (905,
'王五', '女', 1991, '英语系', '福建省厦门市)'''
sql5 = '''INSERT INTO data2(id, name, sex, birth, department, address) VALUES (906,
'王六', '男', 1988, '计算机系', '湖南省衡阳市)'''
```

```
cur.execute(sql)
cur.execute(sql1)
cur.execute(sql2)
cur.execute(sql3)
cur.execute(sql4)
cur.execute(sql5)
conn.commit()
cur.close() # 关闭游标
conn.close()# 退出连接
```

重新连接data2，运行游标、编写sql、运行ssql查看数据，最后退出

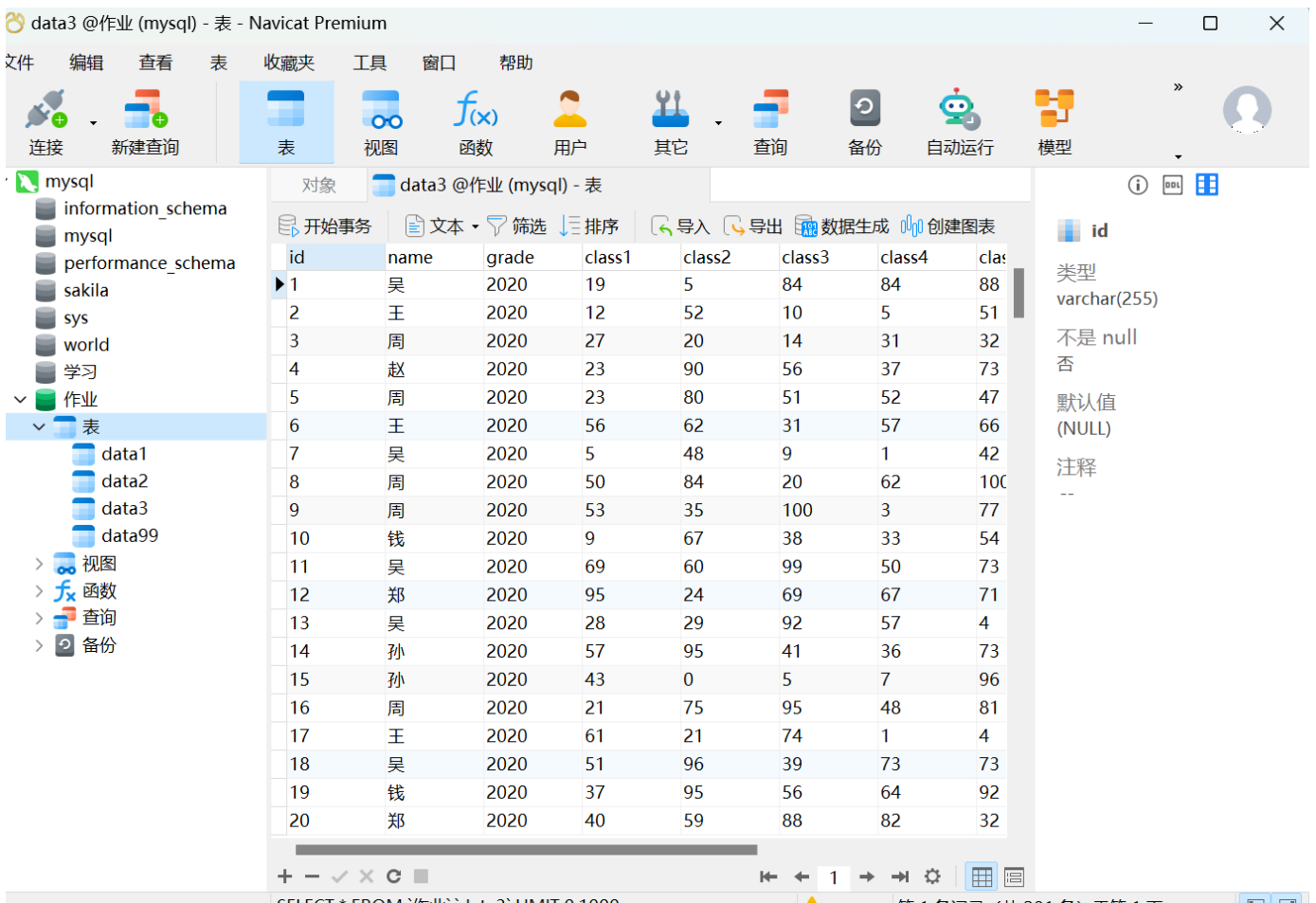
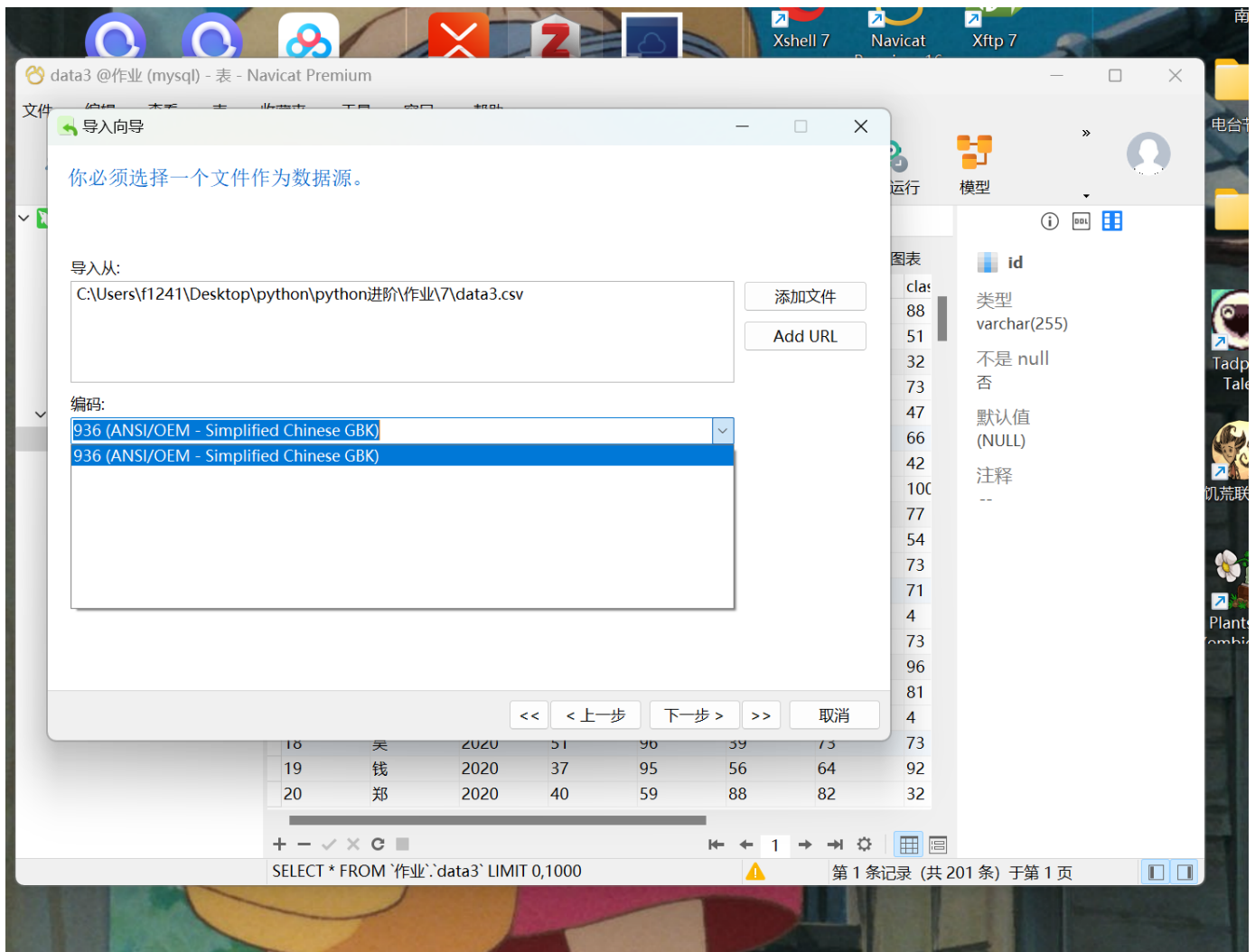
```
import pymysql
conn = pymysql.connect(host = "localhost", user = "root", password = "1024",
                        db = "作业", charset='utf8') ##连接
cur = conn.cursor() # 游标
sql = "select * from data2"
cur.execute(sql)
result2 = cur.fetchall()
print(result2)
cur.close() # 关闭游标
conn.close()# 退出连接
```

2. 将data3.csv的表格导入到mysql中，使用python编写SQL语句

要求：

- a) 列查询：单独挑选出列名为“grade”的数据；
- b) 行查询：查询name等于“吴”的所有数据；
- c) 在表中添加一行数据，数据为(999,吴,2022,19,5,84,84,88,3,99,18)
- d) 条件查询：查询name等于“吴”和列名等于“grade”的数据；
- e) 条件查询：查询2020级中class1的成绩大于95的学生的id和name；
- f) 计算2020级class1~class8所有科目的平均值；
- g) 计算所有年级class1~class8所有科目的平均值；

导入data3



a、列查询

Python

0.9s

```
cur = conn.cursor() # 游标
sql = "select grade from data3"
cur.execute(sql)
result = cur.fetchall()
print(result)
```

Python

0.9s

```
import pymysql
conn = pymysql.connect(host = "localhost" , user = "root" , password = "1024"
                        db = "作业" , charset='utf8') ##连接
cur = conn.cursor() # 游标
sql = "select grade from data3"
cur.execute(sql)
result = cur.fetchall()
print(result)
cur.close()
conn.close()
```

b、行查询

```
cur = conn.cursor() # 游标
sql = "select * from data3 where name='吴'"
cur.execute(sql)
result = cur.fetchall()
print(result)
```

[5] ✓ 0.5s Python

```
... (('1', '吴', '2020', '19', '5', '84', '84', '88', '3', '99', '18'), ('7', '吴', '2020', '5', '48', '9', '1', '42', '99', '5', '34'), ('11', '吴', '2020', '69', '60', '99', '50', '73', '35', '76', '4'), ('13', '吴', '2020', '28', '29', '92', '57', '4', '33', '22', '4'), ('18', '吴', '2020', '51', '96', '39', '73', '73', '33', '44', '68'), ('30', '吴', '2020', '59', '97', '29', '28', '62', '61', '0', '10'), ('35', '吴', '2020', '79', '33', '24', '79', '54', '28', '49', '46'), ('40', '吴', '2020', '36', '40', '62', '75', '12', '4', '20', '62'), ('54', '吴', '2019', '79', '73', '32', '93', '63', '89', '64', '97'), ('59', '吴', '2019', '13', '95', '52', '40', '75', '51', '27', '16'), ('61', '吴', '2019', '33', '33', '48', '81', '57', '49', '28', '33'), ('86', '吴', '2019', '99', '31', '44', '53', '19', '60', '96', '29'), ('93', '吴', '2019', '11', '84', '30', '100', '27', '53', '5', '98'), ('106', '吴', '2018', '23', '0', '95', '32', '76', '66', '85', '36'), ('107', '吴', '2018', '92', '90', '50', '25', '44', '8', '24', '69'), ('108', '吴', '2018', '0', '82', '10', '61', '88', '81', '17', '24'), ('113', '吴', '2018', '78', '48', '63', '15', '7', '60', '22', '0'), ('122', '吴', '2018', '14', '67', '53', '20', '26', '9', '49', '35'), ('123', '吴', '2018', '62', '81', '18', '36', '10', '83', '80', '18'), ('126', '吴', '2018', '92', '39', '50', '78', '4', '48', '78', '96'), ('137', '吴', '2018', '84', '33', '71', '30', '8', '31', '48', '21'), ('143', '吴', '2018', '28', '82', '50', '71', '54', '26', '8', '67'), ('150', '吴', '2018', '18', '99', '22', '95', '26', '11', '35', '67'), ('155', '吴', '2017', '87', '95', '78', '8', '83', '85', '50', '88'), ('167', '吴', '2017', '6', '4', '96', '95', '32', '6', '83', '60'), ('183', '吴', '2017', '54', '64', '93', '52', '99', '64', '29', '48'), ('187', '吴', '2017', '28', '61', '80', '13', '44', '6', '59', '81'), ('190', '吴', '2017', '5', '76', '11', '58', '60', '69', '87', '80'), ('191', '吴', '2017', '20', '79', '32', '69', '9', '69', '80', '49'), ('192', '吴', '2017', '65', '41', '77', '28', '67', '52', '94', '89'), ('197', '吴', '2017', '25', '68', '89', '70', '41', '26', '16', '99'), ('198', '吴', '2017', '24', '38', '16', '41', '55', '72', '71', '62'))
```

```
import pymysql
conn = pymysql.connect(host = "localhost" , user = "root" , password = "1024" ,
                        db = "作业" , charset='utf8') ##连接
cur = conn.cursor()  # 游标
sql = "select * from data3 where name='吴'"
```

```

cur.execute(sql)
result = cur.fetchall()
print(result)
cur.close()
conn.close()

```

c、在表中添加一行数据

```

2017, '85', '41', '77', '20', '87', '32', '34', '85'), ('19', '吴', '2017', '23', '88', '85', '70', '41', '20', '10', '99'), ('19', '吴', '2017', '24', '30',
'41', '55', '72', '71', '62'))

cur = conn.cursor() # 游标
sql = '''INSERT INTO data3 (id,name,grade,class1,class2,class3,class4,class5,class6,class7,class8) VALUES (999,'吴',2022,19,5,84,84,88,3,99,18)
'''
cur.execute(sql)
conn.commit()
sql1 = "select * from data3 where id = 999"
cur.execute(sql1)
result = cur.fetchall()
print(result)

```

```

import pymysql
conn = pymysql.connect(host = "localhost" , user = "root" , password = "1024" ,
                        db = "作业" , charset='utf8') ##连接
cur = conn.cursor() # 游标
sql = '''INSERT INTO data3
(id,name,grade,class1,class2,class3,class4,class5,class6,class7,class8) VALUES
(999,'吴',2022,19,5,84,84,88,3,99,18)
'''
cur.execute(sql)
conn.commit()
sql1 = "select * from data3 where id = 999"
cur.execute(sql1)
result = cur.fetchall()
print(result)
cur.close()
conn.close()

```

d、条件查询：查询name等于“吴”和列名等于“grade”的数据

```

cur = conn.cursor() # 游标
sql = "select grade,name from data3 where name='吴'"
cur.execute(sql)
result = cur.fetchall()
print(result)

```

```

import pymysql
conn = pymysql.connect(host = "localhost" , user = "root" , password = "1024" ,

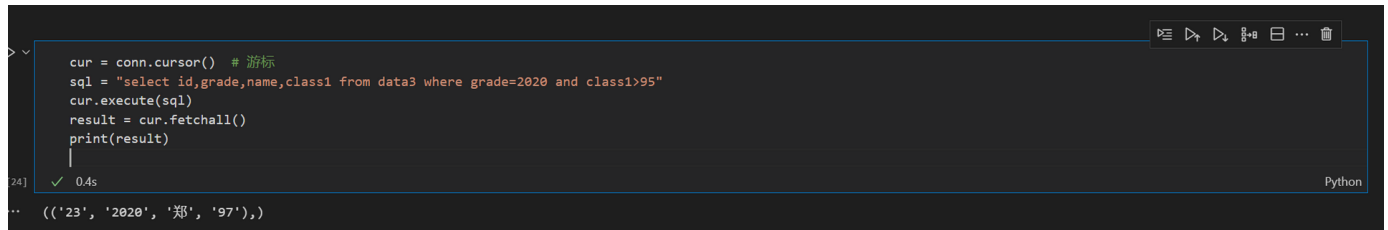
```

```

        db = "作业" , charset='utf8') ##连接
cur = conn.cursor() # 游标
sql = "select grade,name from data3 where name='吴'"
cur.execute(sql)
result = cur.fetchall()
print(result)
cur.close()
conn.close()

```

e、条件查询：查询2020级中class1的成绩大于95的学生的id和name



```

cur = conn.cursor() # 游标
sql = "select id,grade,name,class1 from data3 where grade=2020 and class1>95"
cur.execute(sql)
result = cur.fetchall()
print(result)

```

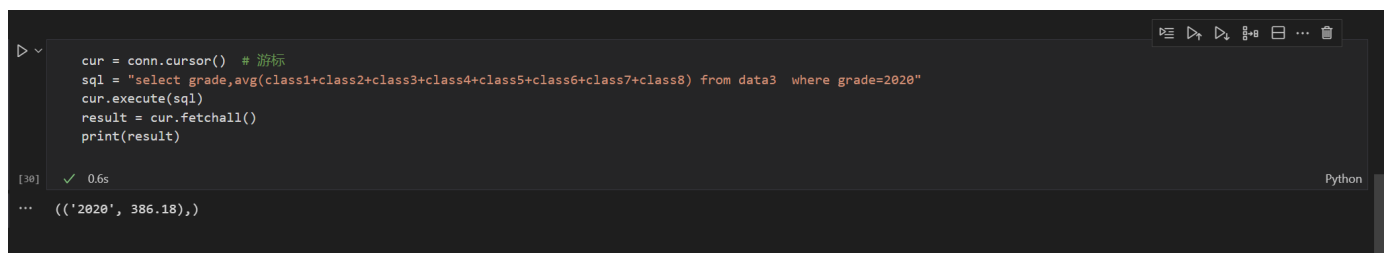
Output: (('23', '2020', '郑', '97'),)

```

import pymysql
conn = pymysql.connect(host = "localhost" , user = "root" , password = "1024" ,
                        db = "作业" , charset='utf8') ##连接
cur = conn.cursor() # 游标
sql = "select id,grade,name,class1 from data3 where grade=2020 and class1>95"
cur.execute(sql)
result = cur.fetchall()
print(result)
cur.close()
conn.close()

```

f、计算2020级class1~class8所有科目的平均值



```

cur = conn.cursor() # 游标
sql = "select grade,avg(class1+class2+class3+class4+class5+class6+class7+class8) from data3 where grade=2020"
cur.execute(sql)
result = cur.fetchall()
print(result)

```

Output: (('2020', 386.18),)

```

import random
user = int(input("次数"))
u = 0
r = 0
def robot_choice():
    return random.choice( ["剪刀", "石头", "布"])
while user > 0:
    user_1 = input("请出(石头/剪刀/布):")
    robot = robot_choice()

```

```

    if (user_1 == "石头" and robot == "剪刀") or (user_1 == "剪刀" and robot == "布")
or (user_1 == "布" and robot == "石头"):
        print("你出: ", user_1)
        print("电脑:" + robot)
        print("你赢了 ")
        u += 1
    elif (user_1 == "石头" and robot == "石头") or (user_1 == "剪刀" and robot == "剪刀") or (user_1 == "布" and robot == "布"):
        print("你出: ", user_1)
        print("电脑:" + robot)
        print("平局")
    else:
        print("你出: ", user_1)
        print("电脑:" + robot)
        print("你输了")
        r += 1
    user -= 1
print(u, ":", r)
if u > r :
    print("you win")
elif u==r:
    print("draw")
else:
    print("you loss")

```

[6]

✓ 4.2s

```

... 你出: 石头
      电脑:石头
      平局
      0 : 0
      draw

```