实验练习08 参考答案

```
import pymysql
import numpy as np

db = pymysql.connect(host = "cdb-r2g8flnu.bj.tencentcdb.com", port = 10209, user
= "dase2020", password = "dase2020", database = "dase_intro_2020")
cursor = db.cursor()

sql = "SELECT * FROM bicycle_train LIMIT 17,5;"
cursor.execute(sql)  # 执行SQL语句
result = cursor.fetchall()  # 获取单条数据
print('编号|城市|小时|工作日|大气温度|体感温度|天气|风速|单车租借量')
for record in result:
    for element in record:
        print("%3d" % element,end='|')
    print()
```

```
编号|城市|小时|工作日|大气温度|体感温度|天气|风速|单车租借量
 18|  1| 17|  1|  8|  4|  1|  2| 75|
 19|  1|  1|  1| 18| 19|  1|  3|  5|
 20|  1|  7|  0| 23| 25|  2|  1| 13|
 21|  0|  9|  0| 25| 27|  1|  0| 67|
 22|  0| 16|  1| 11| 11|  3|  2| 76|
```

```
sql = "SELECT DISTINCT wind FROM bicycle_train ORDER BY wind;"
cursor.execute(sql)
result = cursor.fetchall()
print('风速最小值为%d 最大值为%d' % (result[0][0],result[-1][0]))
```

```
风速最小值为0 最大值为7
```

```
sql = "SELECT AVG(temp_air) FROM bicycle_train WHERE city=0 AND hour=10 AND
weather=1 AND wind BETWEEN 0 AND 1 AND y>=100;"
cursor.execute(sql)
mean = cursor.fetchone()[0]
print('平均温度为 %.1f 摄氏度' % mean)
```

```
平均温度为 20.6 摄氏度
```

```
sql = "SELECT temp_air FROM bicycle_train WHERE city=0 AND hour=10 AND weather=1
AND wind BETWEEN 0 AND 1 AND y>=100;"
cursor.execute(sql)
result = cursor.fetchall()
temp_list = []
for record in result:
    temp_list.append(record[0])
temp_arr = np.array(temp_list)
temp_var = np.sum((temp_arr-mean)**2) / len(temp_arr)
print('平均温度的方差为 %.2f' % temp_var)
```

```
平均温度的方差为 37.64
```

```
city_dict = {0:'北京', 1:'上海'}
sql = "SELECT city,SUM(y) FROM bicycle_train WHERE is_workday=1 AND weather=3
GROUP BY city ORDER BY SUM(y) DESC;"
cursor.execute(sql)
result = cursor.fetchall()
for record in result:
    print('%s:%d'%(city_dict[record[0]],record[1]))
```

```
上海:9106
北京:8084
```

```
sql = "SELECT hour,AVG(y) FROM bicycle_train WHERE hour BETWEEN 17 AND 19 AND
city=1 AND is_workday=1 AND temp_body<=10 GROUP BY hour ORDER BY AVG(y);"
cursor.execute(sql)
result = cursor.fetchall()
for record in result:
    print('%d时：%d辆'%(record[0],round(record[1])))
```

```
19时：42辆
18时：63辆
17时：65辆
```