

应急管理与安全工程学院

安全信息大作业

课程名称： 安全工程信息技术

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应急管理与安全工程学院

一、删除操作

1. 删除库操作

```
air -- mysql -u calvin -p -- 123x41

mysql> show databases;
+-----+
| Database |
+-----+
| class    |
| company_hazard |
| exchange |
| experiment |
| hazard   |
| information_schema |
| mysql    |
| performance_schema |
| school   |
| sys      |
| 企业隐患统计 |
+-----+
11 rows in set (0.00 sec)

mysql> drop database exchange;
Query OK, 0 rows affected (0.03 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| class    |
| company_hazard |
| experiment |
| hazard   |
| information_schema |
| mysql    |
| performance_schema |
| school   |
| sys      |
| 企业隐患统计 |
+-----+
10 rows in set (0.00 sec)

mysql>
```

2. 删除表操作

```
air -- mysql -u calvin -p -- 123x41

mysql> show tables;
+-----+
| Tables_in_school |
+-----+
| classes          |
| courses         |
| grades          |
| score           |
| student         |
+-----+
5 rows in set (0.00 sec)

mysql> drop table classes;
Query OK, 0 rows affected (0.02 sec)

mysql> show tables;
+-----+
| Tables_in_school |
+-----+
| courses         |
| grades          |
| score           |
| student         |
+-----+
4 rows in set (0.00 sec)

mysql>
```

二、修改操作

1. 添加列操作:

```
mysql> alter table moto大王的表格 add(name varchar(100));
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from moto大王的表格;
```

姓名	性别	gender	name
胡树杰	NULL	NULL	NULL
胡江昱	NULL	NULL	NULL

```
2 rows in set (0.00 sec)
```

2. 修改列类型:

```
mysql> alter table moto大王的表格 change 性别 sex char(2);
Query OK, 2 rows affected (0.08 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql> select * from moto大王的表格;
```

姓名	sex	gender	name
胡树杰	NULL	NULL	NULL
胡江昱	NULL	NULL	NULL

```
2 rows in set (0.00 sec)
```

3. 修改字段名称:

```
mysql> desc moto大王;
```

Field	Type	Null	Key	Default	Extra
name	int	NO		NULL	

```
1 row in set (0.00 sec)

mysql> alter table moto大王 change name number int not null;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc moto大王;
```

Field	Type	Null	Key	Default	Extra
number	int	NO		NULL	

```
1 row in set (0.01 sec)
```

4. 删除列:

```
mysql> select * from moto大王的表格;
+----+-----+-----+-----+
| 姓名 | sex  | gender | name |
+----+-----+-----+-----+
| 胡树杰 | NULL | NULL  | NULL |
| 胡江昱 | NULL | NULL  | NULL |
+----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> alter table moto大王的表格 drop name;
Query OK, 0 rows affected (0.15 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from moto大王的表格;
+----+-----+-----+
| 姓名 | sex  | gender |
+----+-----+-----+
| 胡树杰 | NULL | NULL  |
| 胡江昱 | NULL | NULL  |
+----+-----+-----+
2 rows in set (0.00 sec)
```

5. 修改表名称:

```
mysql> select * from moto大王的表格;
+----+-----+-----+
| 姓名 | sex  | gender |
+----+-----+-----+
| 胡树杰 | NULL | NULL  |
| 胡江昱 | NULL | NULL  |
+----+-----+-----+
2 rows in set (0.00 sec)

mysql> alter table moto大王的表格 rename to moto;
Query OK, 0 rows affected (0.02 sec)

mysql> select * from moto;
+----+-----+-----+
| 姓名 | sex  | gender |
+----+-----+-----+
| 胡树杰 | NULL | NULL  |
| 胡江昱 | NULL | NULL  |
+----+-----+-----+
2 rows in set (0.01 sec)
```

6. 修改表内容:

```
mysql> update moto set sex= 1 where 姓名= 胡树杰 ;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select * from moto;
+----+-----+-----+
| 姓名 | sex  | gender |
+----+-----+-----+
| 胡树杰 | 1    | NULL  |
| 胡江昱 | NULL | NULL  |
+----+-----+-----+
2 rows in set (0.00 sec)
```

7. 添加外键操作

```
air — mysql -u calvin -p — 90x50
mysql> desc score;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| sno   | int  | NO   | MUL | NULL    |       |
| cno   | int  | YES  | MUL | NULL    |       |
| grade | int  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

mysql> alter table score
[ -> add constraint sno
[ -> foreign key(sno)
[ -> references student(sno);
Query OK, 12 rows affected (0.14 sec)
Records: 12 Duplicates: 0 Warnings: 0

mysql> desc score;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| sno   | int  | NO   | MUL | NULL    |       |
| cno   | int  | YES  | MUL | NULL    |       |
| grade | int  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

8. 删除外键操作

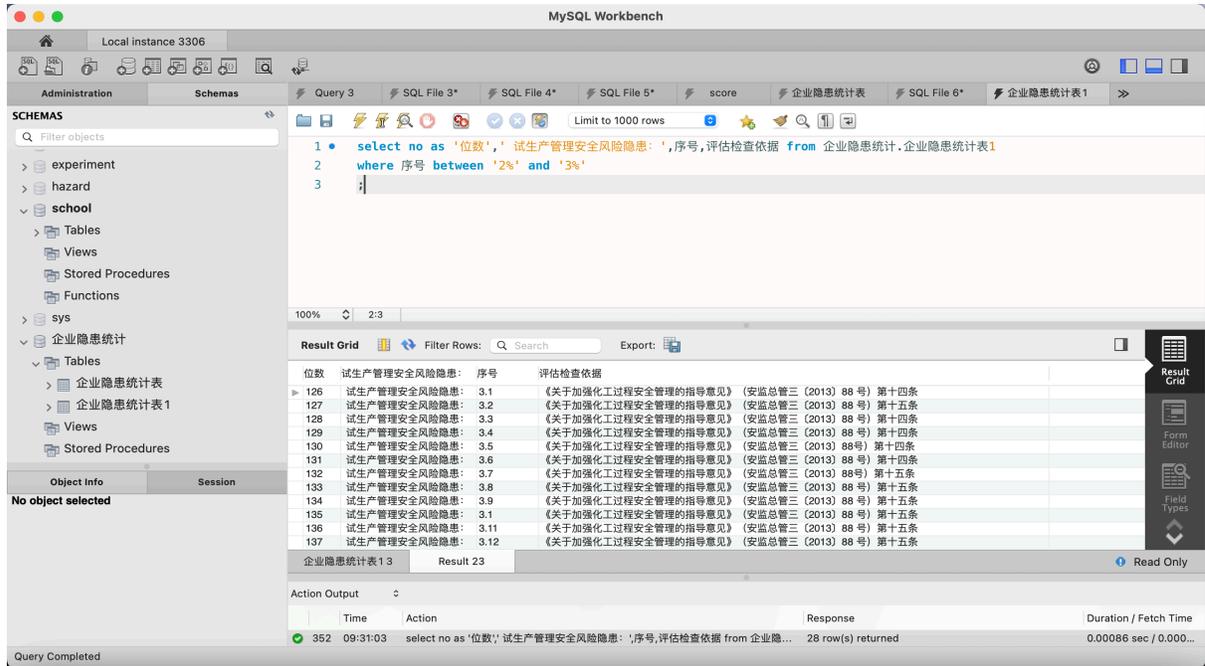
```
air — mysql -u calvin -p — 123x41
mysql> desc score;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| sno   | int  | NO   | MUL | NULL    |       |
| cno   | int  | YES  | MUL | NULL    |       |
| grade | int  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> alter table score drop foreign key sno;
Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

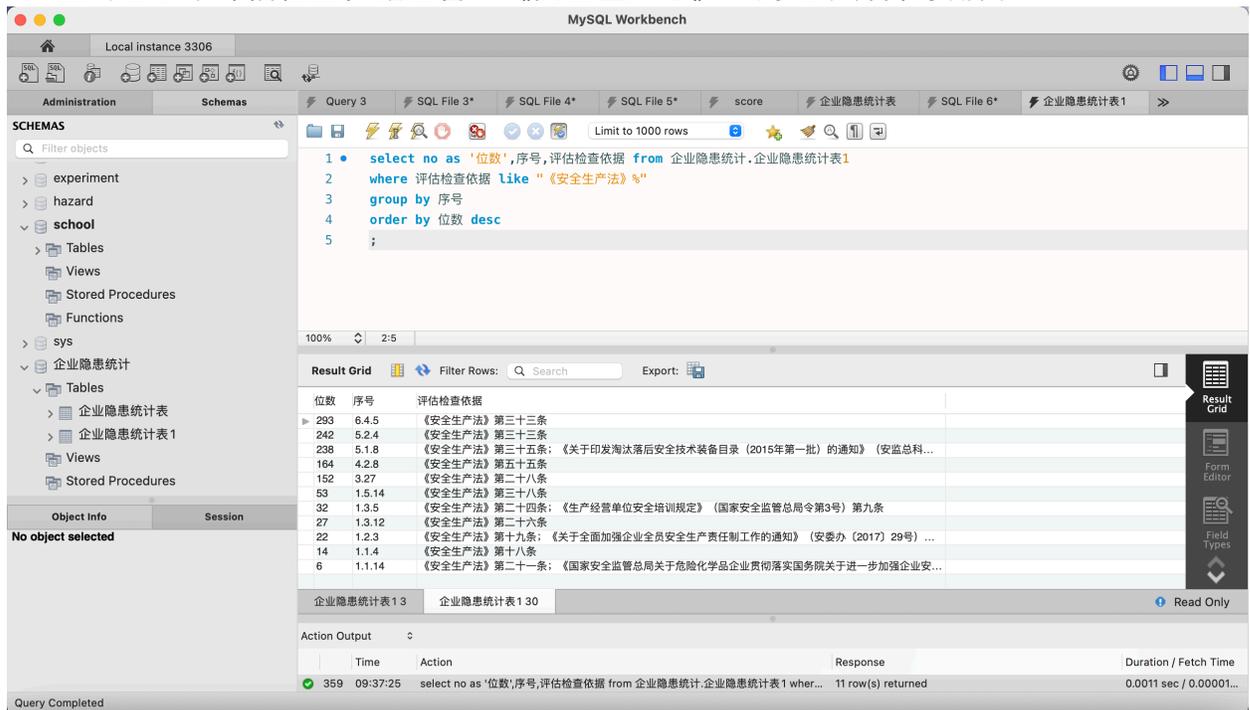
mysql> █
```

三、数据库查询与统计

1. 试生产管理安全风险隐患查询其序号、评价依据



2. 查询总表中评估检查依据包含“《安全生产法》”的记录并降序排列



3. 查询总表中隐患类型为“安全承诺及责任制落实”的记录数

The screenshot shows MySQL Workbench with a query window containing the following SQL code:

```
1 • select count(序号),group_concat(评估检查依据) from 企业隐患排查,企业隐患排查表1
2 • where 隐患类型="安全承诺及责任制落实"
3 • ;
```

The result grid shows the following data:

count(序号)	group_concat(评估检查依据)
7	《企业安全生产费用提取和使用管理办法》（财企〔2012〕16号）、《中共中央 国务院关于推进安全生产领域改革发展的意见》（中发〔2016〕32号）第二十九条...《应急管理

The Action Output window shows the query completed successfully, returning 1 row(s) in 0.0010 seconds.

4. 利用集函数查询统计不同排查对象的记录数

The screenshot shows MySQL Workbench with a query window containing the following SQL code:

```
1 • SELECT 排查对象,count(排查对象) FROM 企业隐患排查,企业隐患排查表1
2 • group by 排查对象
3 • ;
```

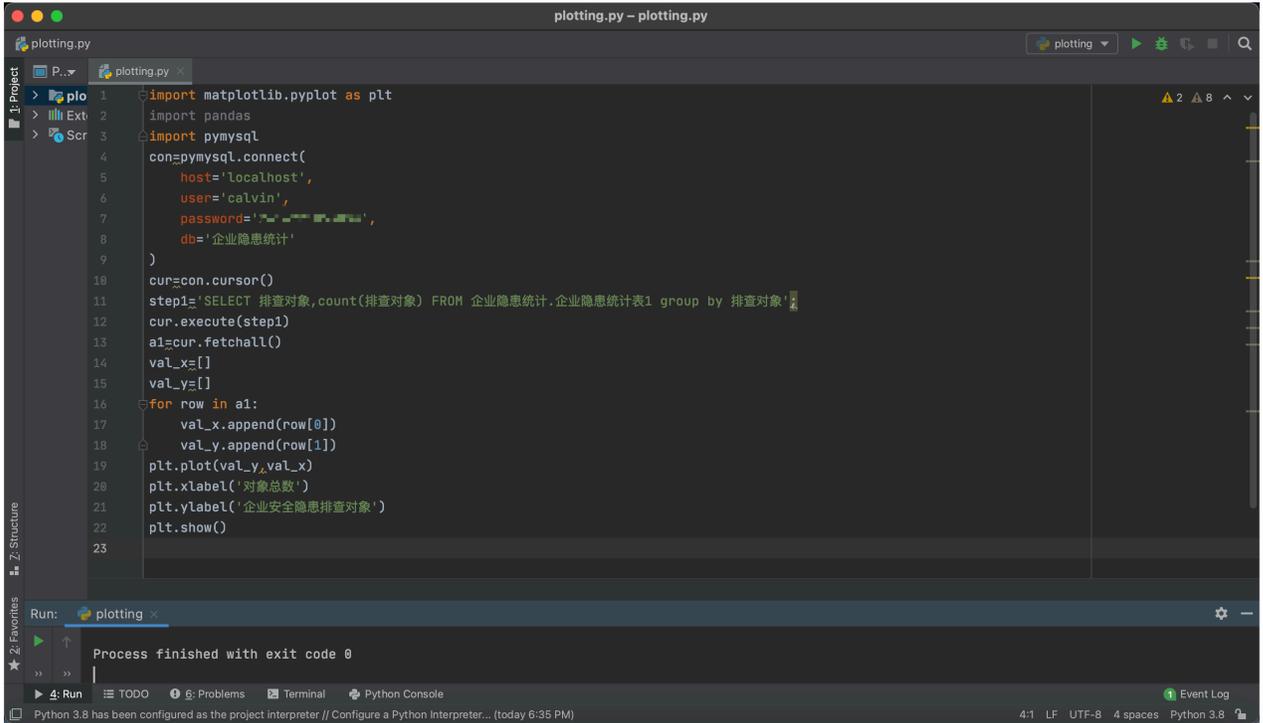
The result grid shows the following data:

排查对象	count(排查对象)
安全基础管理安全	92
设计与总图安全	27
试生产管理安全	28
装置运行安全风险	77
设备安全	40
仪表安全	24
电气安全	19
应急与消防安全	31
重点危险化学品特殊管控安全	102
危险化学品安全专项整治三年行动实施方案	15

The Action Output window shows the query completed successfully, returning 10 row(s) in 0.0010 seconds.

三、Python 绘图

1. 在 python 中连接本地数据库

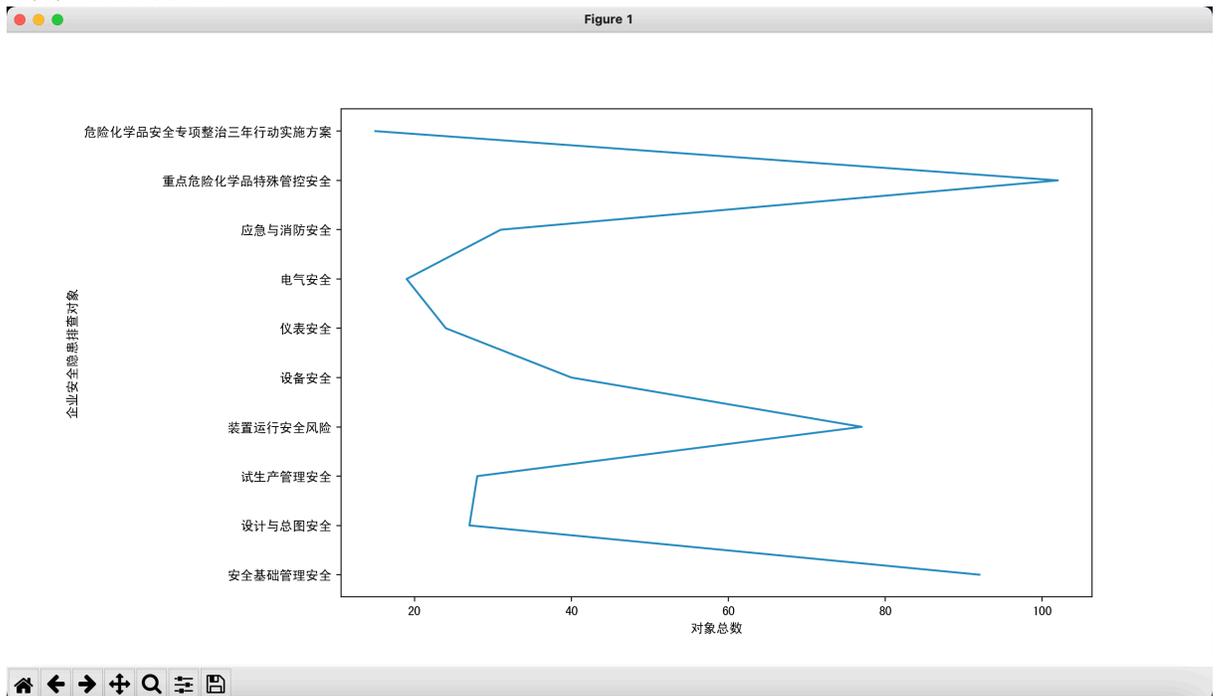


```
1 import matplotlib.pyplot as plt
2 import pandas
3 import pymysql
4 con=pymysql.connect(
5     host='localhost',
6     user='calvin',
7     password='123456',
8     db='企业隐患排查'
9 )
10 cur=con.cursor()
11 step1='SELECT 排查对象,count(排查对象) FROM 企业隐患排查.企业隐患排查表1 group by 排查对象'
12 cur.execute(step1)
13 a1=cur.fetchall()
14 val_x=[]
15 val_y=[]
16 for row in a1:
17     val_x.append(row[0])
18     val_y.append(row[1])
19 plt.plot(val_y,val_x)
20 plt.xlabel('对象总数')
21 plt.ylabel('企业安全隐患排查对象')
22 plt.show()
23
```

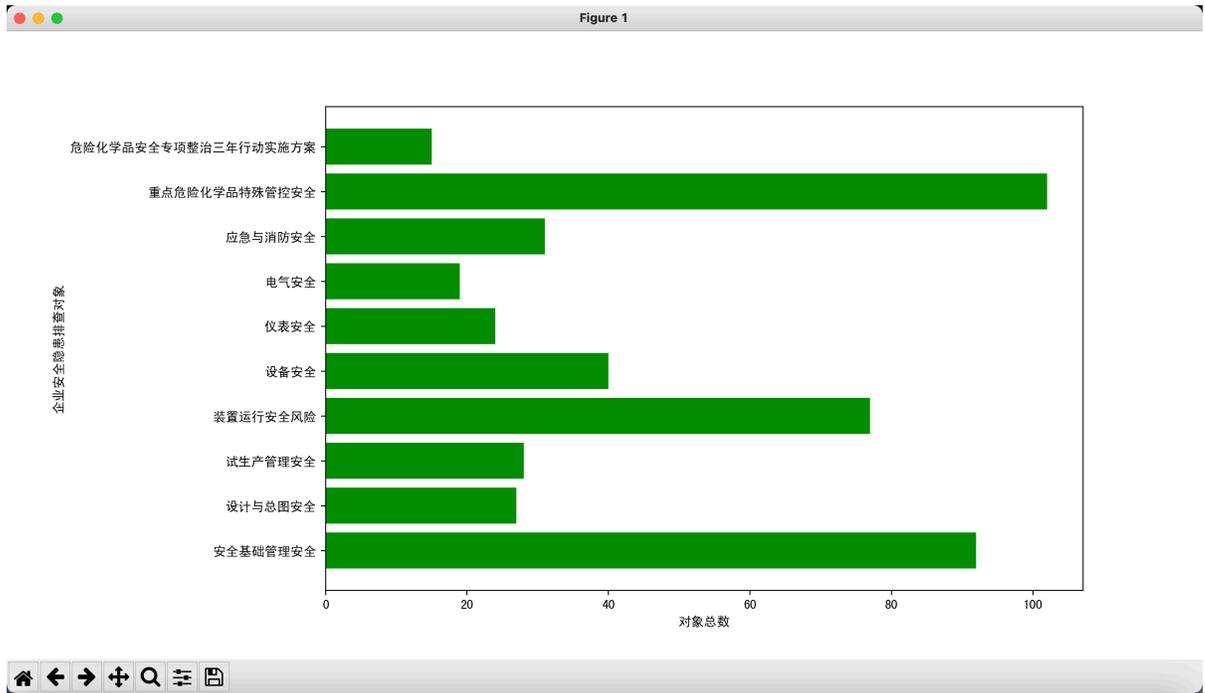
Run: plotting x
Process finished with exit code 0

2. 用 matplotlib 进行绘图

(1) 横向折线图



(2) 横向柱状图



(3) 饼状图

