12310401 王子恒 Lab2 Create table

Experiment 1

```
Run | New Tab | Copy
create table emp(
    id int PRIMARY KEY,
    name varchar(30),
    salary NUMERIC(9,2)
);
Run | New Tab
insert into emp values(1,'张三',3000);
Run | New Tab
insert into emp values(2,'李四',3000);
Run | New Tab
insert into emp values(1,'王五',3000);  13ms  duplicate key value violates unique constraint "emp_pkey"
```

主键唯一性冲突，不能再创建id=1的项

Experiment 2

```
create table emp2(
id int,
name varchar(30),
salary numeric(9,2),
constraint pk_emp2 primary key(id)
);
Run | New Tab
insert into emp2 values(1,'张三',3000);
Run | New Tab
insert into emp2 values(2,'李四',3000);
Run | New Tab
insert into emp2 values(1,'李四',3000);  15ms  duplicate key value violates unique constraint "pk_emp2"
```

主键唯一性冲突，不能再创建id=1的项

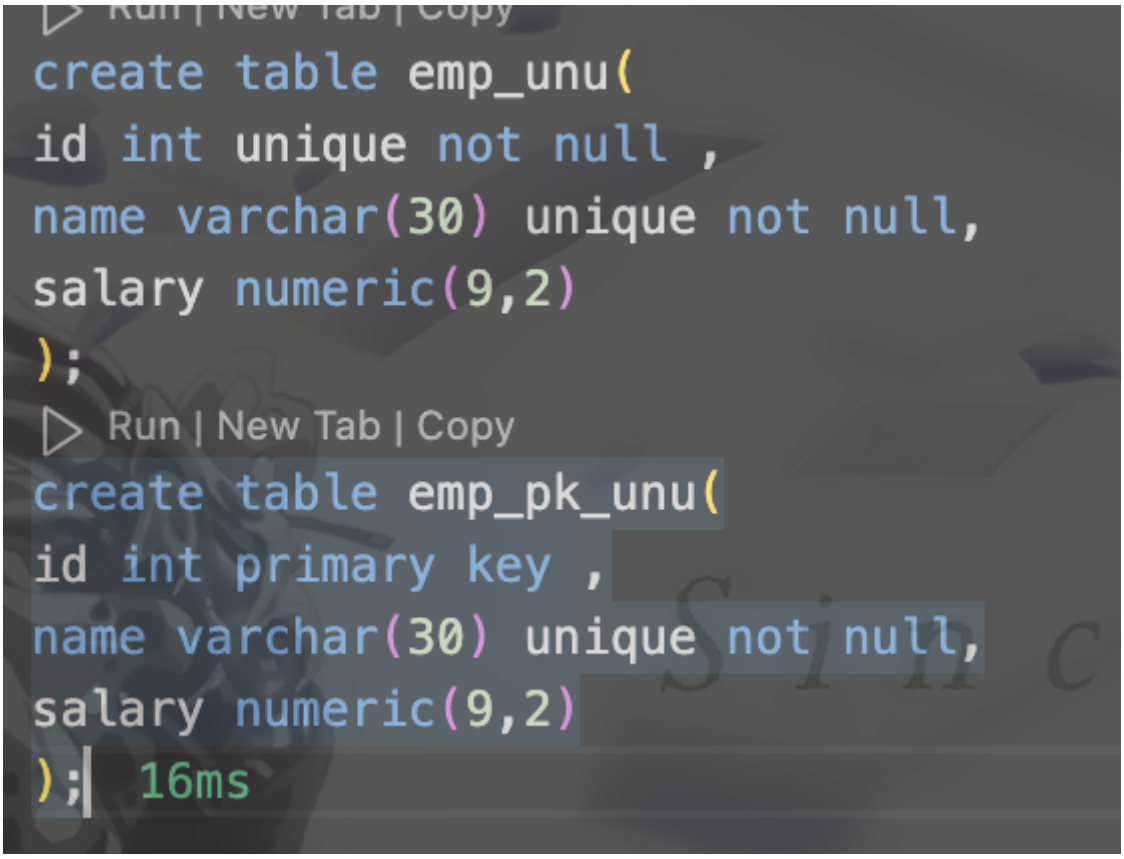
Experiment 3

```
create table emp_union(
name varchar(30),
dep varchar(20),
salary numeric(9,2),
primary key(name, dep)
);
Run | New Tab
insert into emp_union values ('张三','研发',5000),
('李四','人事',3000);
Run | New Tab
insert into emp_union values ('张三','财务',3000);
Run | New Tab
insert into emp_union values ('张三','研发',3000);  19ms  duplicate key value violates unique constraint "emp_union_pkey"
```

主键唯一性冲突，不能再创建(name='张三',dep='研发')的项

Experiment 4

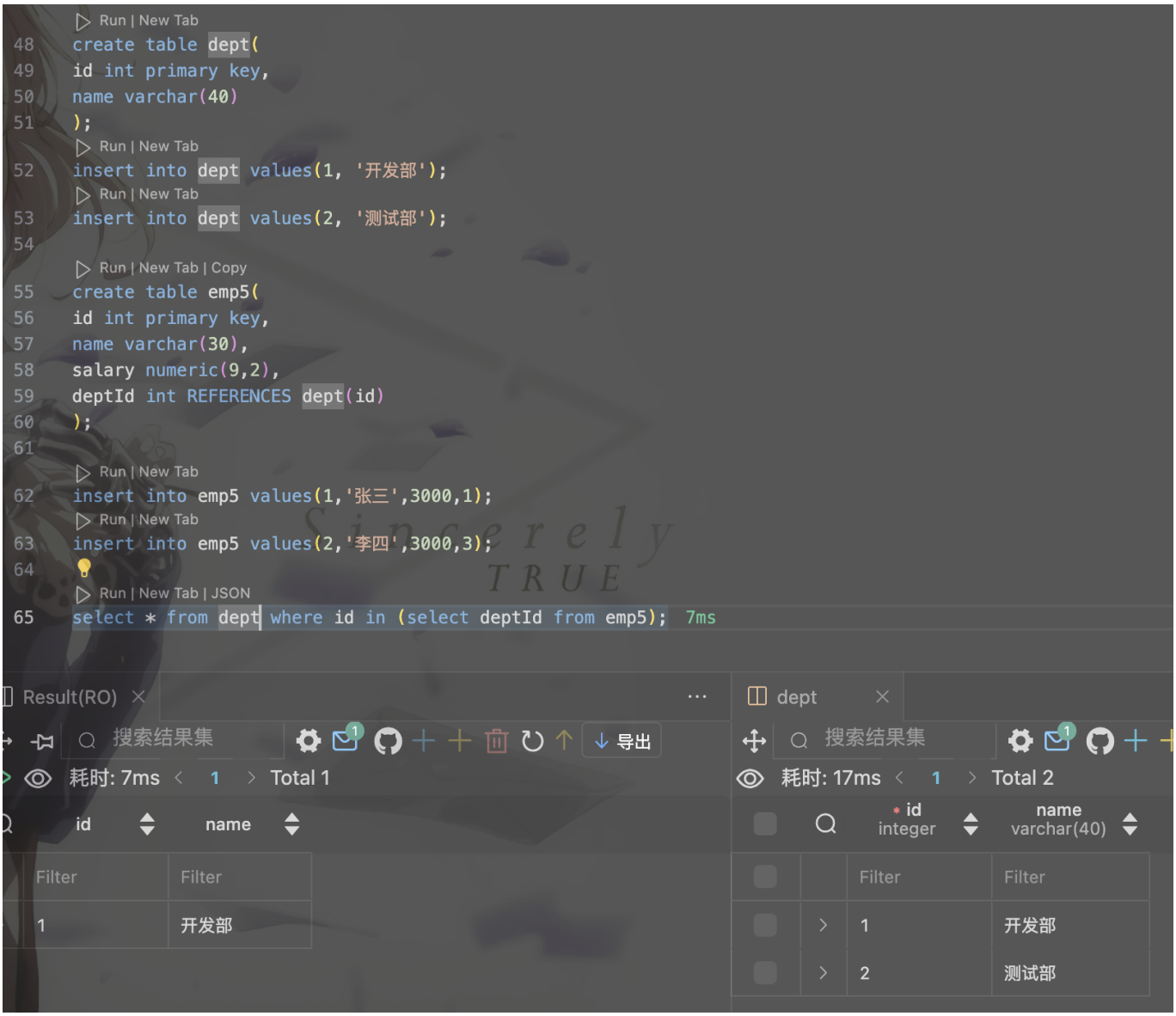
一个表不能创建多个主键



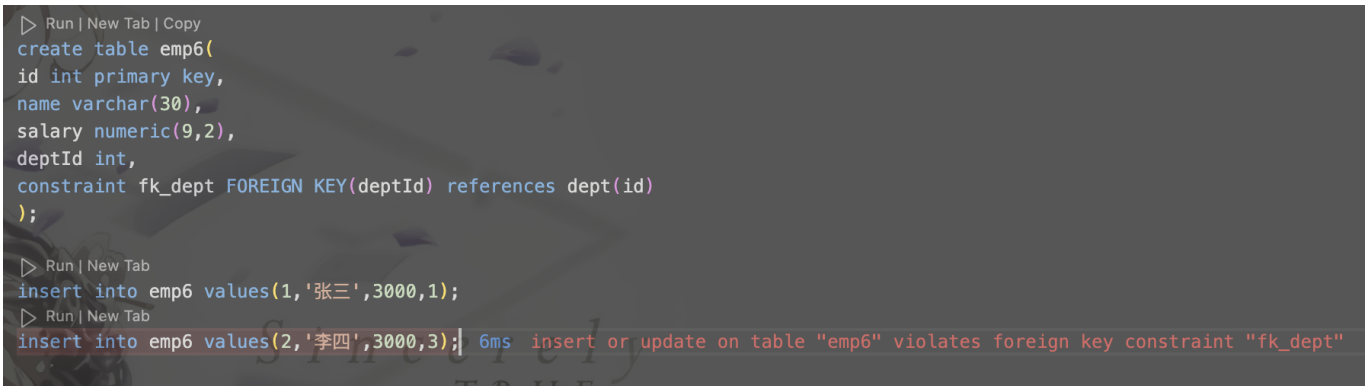
primary key 和 unique not null 的区别:

1. primary约束自动包含唯一且非空，同时一个表只能有一个primary key
2. unique 可以有多个，但是不能有重复的值
3. not null 不能是空值
4. unique not null 指唯一的且不为空，但可以有多个unique not null 约束

Experiment 5

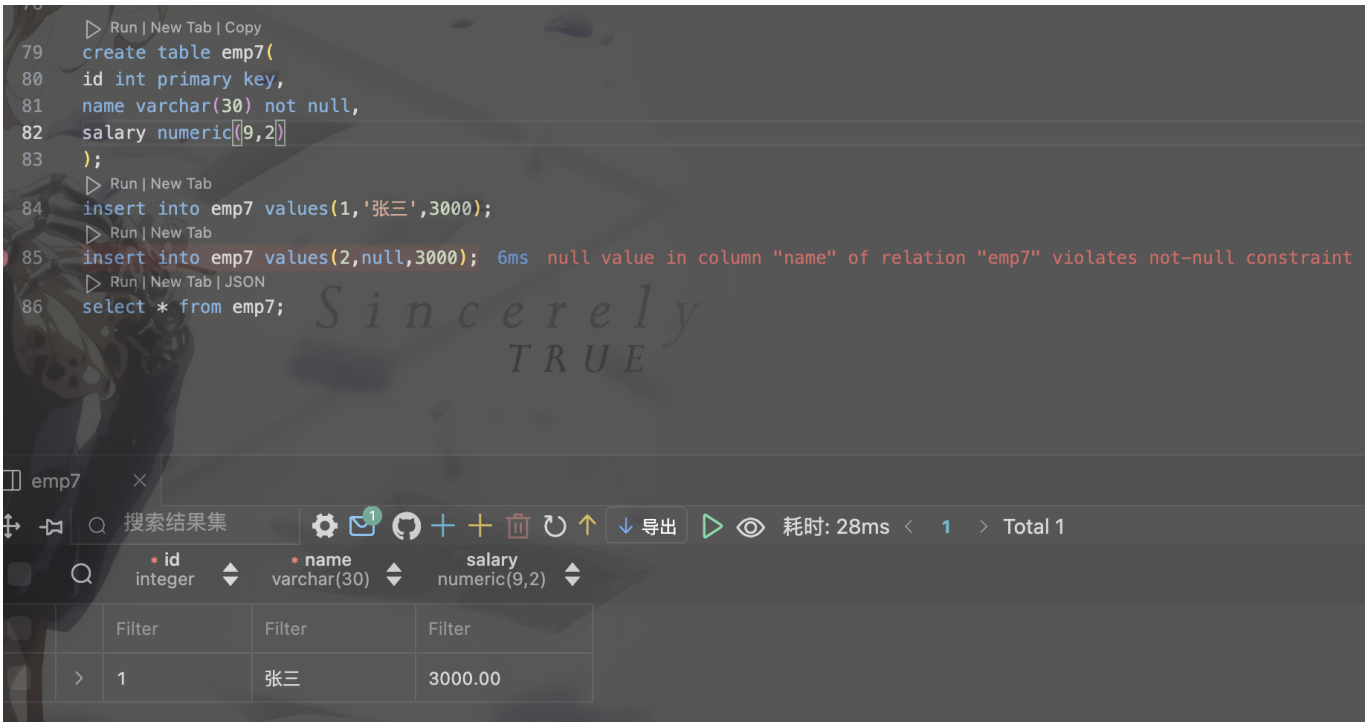


Experiment 6



dept中没有id=3的项，所以插入emp6时，由于外键约束，插入失败

Experiment 7

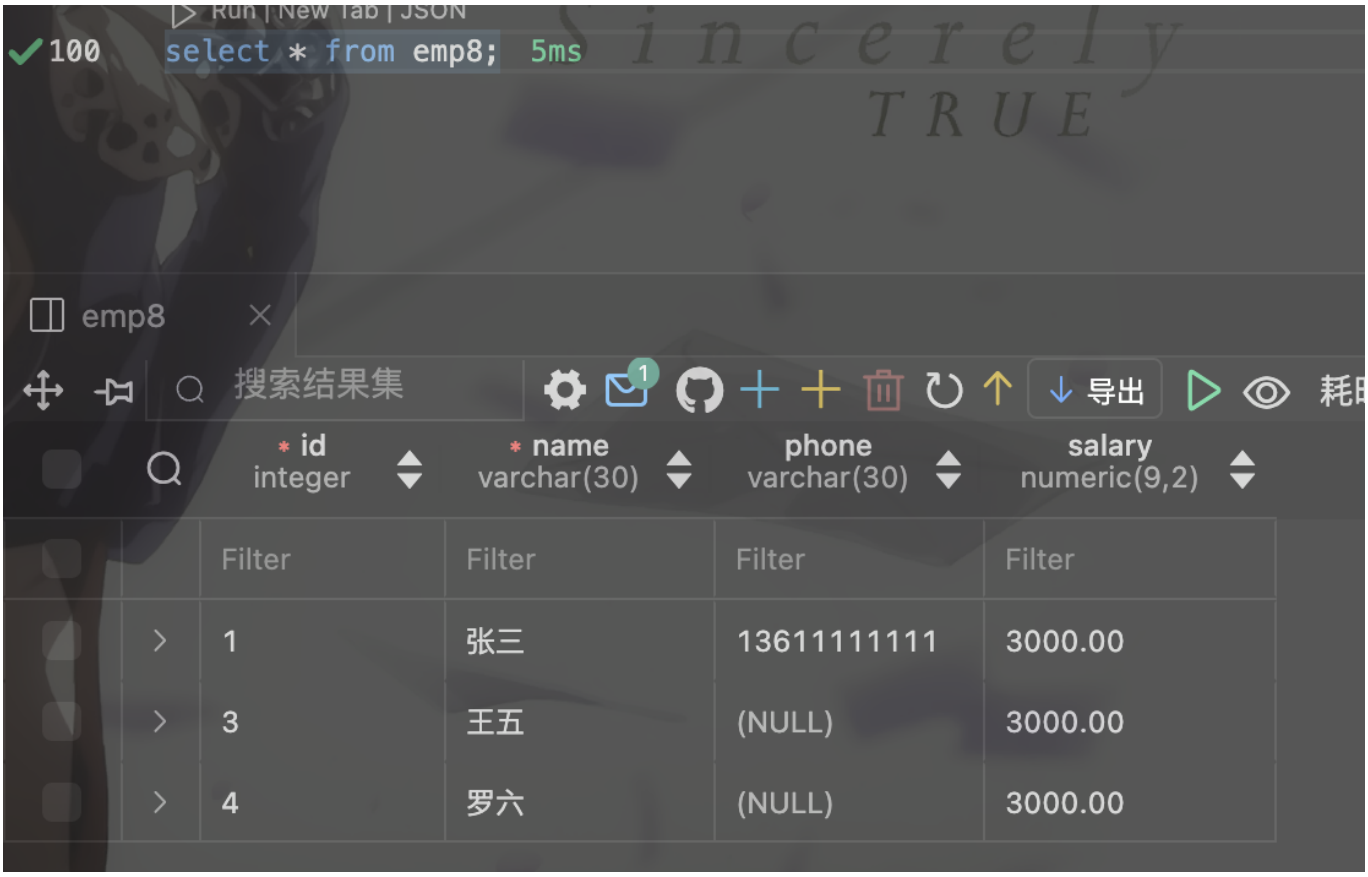


name有非空约束，不能插入空值

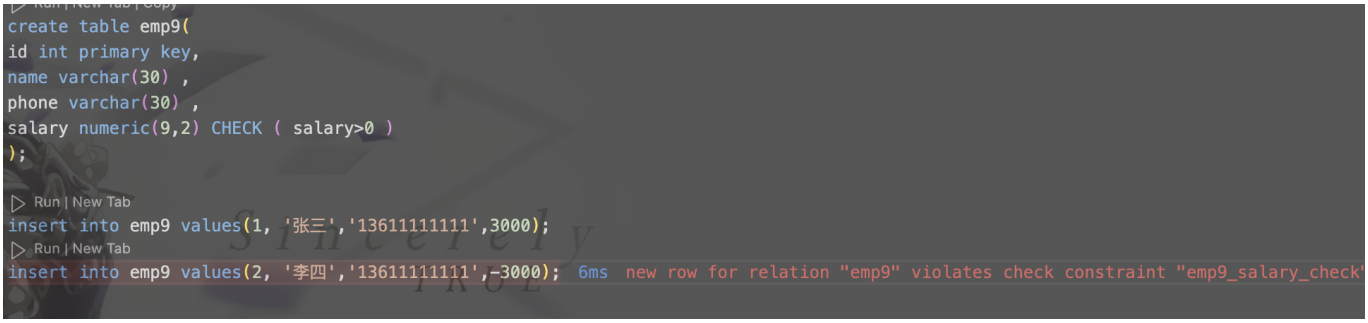
Experiment 8

违反了phone的唯一约束

违反了主键的非空约束

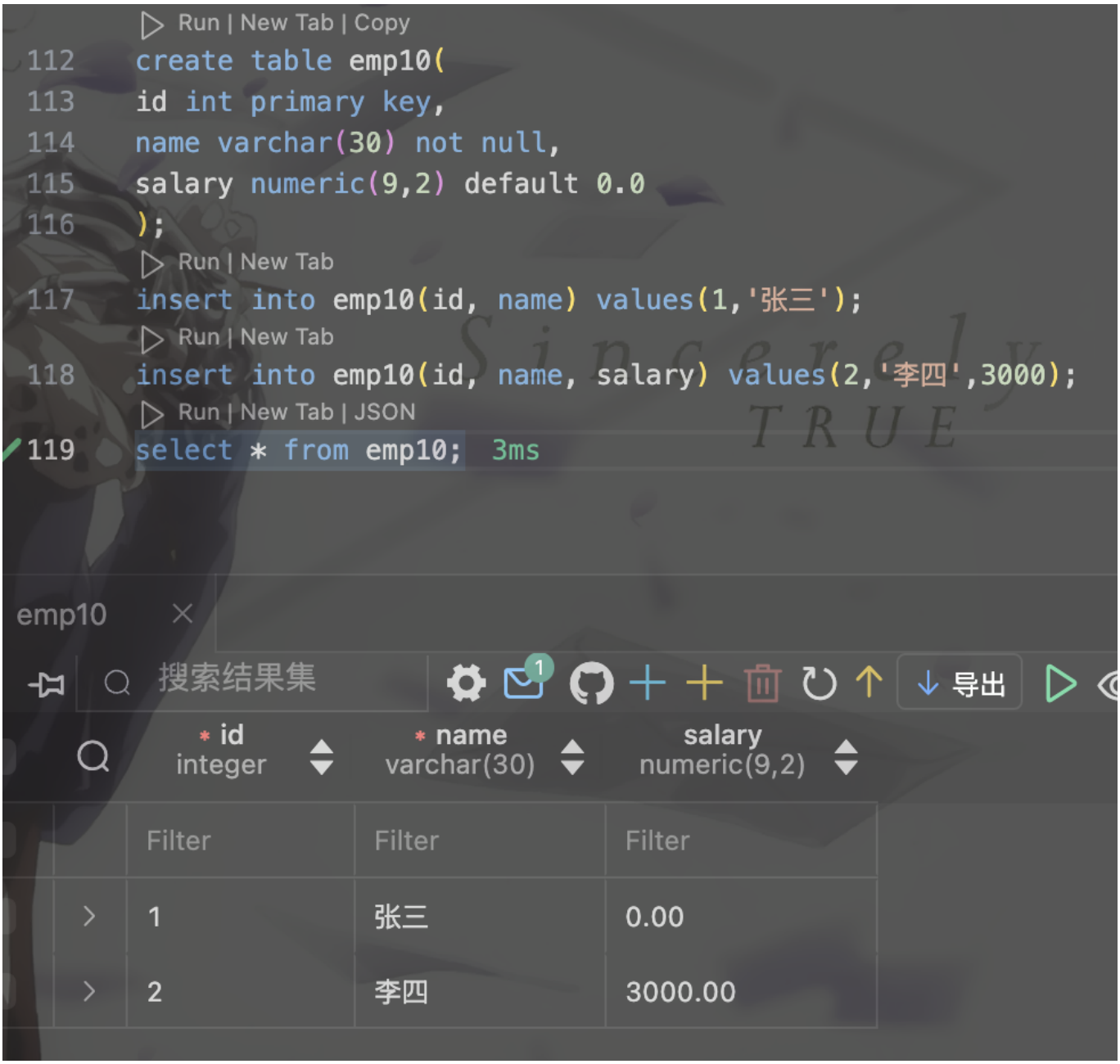


Experiment 9



违反check要求的salary>0

Experiment 10



由于插入`(1,'张三')`时没有指定`salary`,所以`salary`为default值`0.00`

SQL

```
create table emp(
    id int PRIMARY KEY,
    name varchar(30),
    salary NUMERIC(9,2)
);
insert into emp values(1,'张三',3000);
insert into emp values(2,'李四',3000);
insert into emp values(1,'王五',3000);

create table emp2(
id int,
name varchar(30),
salary numeric(9,2),
```

```
constraint pk_emp2 primary key(id)
);
insert into emp2 values(1,'张三',3000);
insert into emp2 values(2,'李四',3000);
insert into emp2 values(1,'李四',3000);

create table emp_union(
name varchar(30),
dep varchar(20),
salary numeric(9,2),
primary key(name, dep)
);
insert into emp_union values ('张三','研发',5000),
('李四','人事',3000);
insert into emp_union values ('张三','财务',3000);
insert into emp_union values ('张三','研发',3000);

create table emp_pk(
id int primary key ,
name varchar(30) primary key ,
salary numeric(9,2)
);
create table emp_unu(
id int unique not null ,
name varchar(30) unique not null,
salary numeric(9,2)
);
create table emp_pk_unu(
id int primary key ,
name varchar(30) unique not null,
salary numeric(9,2)
);

create table dept(
id int primary key,
name varchar(40)
);
insert into dept values(1, '开发部');
insert into dept values(2, '测试部');

create table emp5(
id int primary key,
name varchar(30),
salary numeric(9,2),
deptId int REFERENCES dept(id)
);

insert into emp5 values(1,'张三',3000,1);
insert into emp5 values(2,'李四',3000,3);
```

```
select * from dept where id in (select deptId from emp5);

create table emp6(
id int primary key,
name varchar(30),
salary numeric(9,2),
deptId int,
constraint fk_dept FOREIGN KEY(deptId) references dept(id)
);

insert into emp6 values(1,'张三',3000,1);
insert into emp6 values(2,'李四',3000,3);

create table emp7(
id int primary key,
name varchar(30) not null,
salary numeric(9,2)
);
insert into emp7 values(1,'张三',3000);
insert into emp7 values(2,null,3000);
select * from emp7;

create table emp8(
id int primary key,
name varchar(30) not null,
phone varchar(30) unique,
salary numeric(9, 2)
);

insert into emp8 values(1, '张三','13611111111',3000);
insert into emp8 values(2, '李四','13611111111',3000);
insert into emp8 values(3, '王五',null,3000);
insert into emp8 values(4, '罗六',null,3000);
insert into emp8 values(null, '庄七','13622222222',3000);
select * from emp8;

create table emp9(
id int primary key,
name varchar(30) ,
phone varchar(30) ,
salary numeric(9,2) CHECK ( salary>0 )
);

insert into emp9 values(1, '张三','13611111111',3000);
insert into emp9 values(2, '李四','13611111111',-3000);

create table emp10(
id int primary key,
name varchar(30) not null,
salary numeric(9,2) default 0.0
);
```

```
insert into emp10(id, name) values(1,'张三');
insert into emp10(id, name, salary) values(2,'李四',3000);
select * from emp10;
```