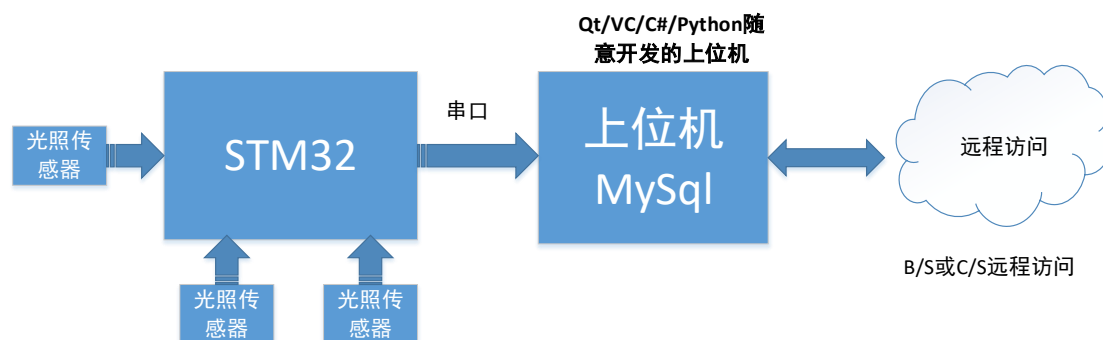


基础五、在线检测数据库设计

5.1 系统整体设计



5.2 数据库设计

1、数据库名称

chenriyuelakedb

2、用户数据表

序号	名称	类型	备注
1	id	int(11)	序号
2	username	varchar(20)	用户名
3	realname	varchar(20)	真实名
4	company	varchar(50)	公司
5	password	varchar(40)	密码
6	email	varchar(20)	邮箱
7	phonenum	varchar(15)	手机号

3、用户数据表设计如下

```
CREATE TABLE `user` (  
  `id` int(11) NOT NULL AUTO_INCREMENT COMMENT '序号'  
  `username` varchar(20) NOT NULL COMMENT '用户名',  
  `realname` varchar(20) NOT NULL COMMENT '真实名',  
  `company` varchar(50) NOT NULL COMMENT '公司',  
  `password` varchar(40) NOT NULL COMMENT '密码',  
  `email` varchar(20) NOT NULL COMMENT '邮箱',
```

```
`phonenum` varchar(15) NOT NULL COMMENT '手机号',  
PRIMARY KEY (`id`)  
) ENGINE=InnoDB AUTO_INCREMENT=9 DEFAULT CHARSET=utf8 COMMENT='用户表';
```

4、传感信息记录表 sensordata

序号	名称	类型	备注
1	id	int(11)	序号
2	recordtime	datetime	时间
3	light	varchar(10)	真实名
4	temperature	varchar(10)	温度
5	humidity	varchar(10)	湿度

5、传感信息表设计如下

```
CREATE TABLE `sensordata` (  
  `id` int(11) NOT NULL AUTO_INCREMENT COMMENT '序号'  
  `recordtime` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP COMMENT '时间',  
  `light` varchar(10) NOT NULL COMMENT '光照',  
  `temperature` varchar(10) NOT NULL COMMENT '温度',  
  `humidity` varchar(10) NOT NULL COMMENT '湿度',  
  PRIMARY KEY (`id`)  
) ENGINE=InnoDB AUTO_INCREMENT=9 DEFAULT CHARSET=utf8 COMMENT='传感信息表';
```

5.3 数据库创建

1、在开始菜单中输入 cmd，启动命令窗口镜像登录

2、在跳出的窗口中输入 `mysql -u root -p` 命令，回车后输入你的 mysql 数据库密码，如教程中的默认密码 111111

```
C:\> 命令提示符 - mysql -u root -p  
Microsoft Windows [版本 10.0.17134.648]  
(c) 2018 Microsoft Corporation。保留所有权利。  
C:\Users\LENOVO>mysql -u root -p  
Enter password: *****
```

3、查看已有的数据库

```
show databases;
```

```
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| chendb1 |
| chendbtest |
| mysql |
| performance_schema |
| sakila |
| sys |
| world |
+-----+
8 rows in set (0.00 sec)

mysql>
```

4、创建数据库

```
create database chenriyuelakedb;
```

```
mysql> create database chenriyuelakedb;
Query OK, 1 row affected (0.01 sec)

mysql>
```

5、查看已有的数据库

```
show databases;
```

```
+-----+
| Database |
+-----+
| information_schema |
| chendb1 |
| chendbtest |
| chenriyuelakedb |
| mysql |
| performance_schema |
| sakila |
| sys |
| world |
+-----+
9 rows in set (0.00 sec)

mysql>
```

6、使用该数据库 chenriyuelakedb;

```
use chenriyuelakedb;
```

```
mysql> use chenriyuelakedb
Database changed
mysql>
```

7、创建表格 user

```
CREATE TABLE `user` (
  `id` int(11) NOT NULL AUTO_INCREMENT COMMENT '序号',
  `username` varchar(20) NOT NULL COMMENT '用户名',
```

```
`realname` varchar(20) NOT NULL COMMENT '真实名',
`company` varchar(50) NOT NULL COMMENT '公司',
`password` varchar(40) NOT NULL COMMENT '密码',
`email` varchar(20) NOT NULL COMMENT '邮箱',
`phonenum` varchar(15) NOT NULL COMMENT '手机号',
PRIMARY KEY (`id`)
) ENGINE=InnoDB AUTO_INCREMENT=9 DEFAULT CHARSET=utf8 COMMENT='用户表';
mysql> CREATE TABLE `user` (
  -> `id` int(11) NOT NULL AUTO_INCREMENT COMMENT '序号',
  -> `username` varchar(20) NOT NULL COMMENT '用户名',
  -> `realname` varchar(20) NOT NULL COMMENT '真实名',
  -> `company` varchar(50) NOT NULL COMMENT '公司',
  -> `password` varchar(40) NOT NULL COMMENT '密码',
  -> `email` varchar(20) NOT NULL COMMENT '邮箱',
  -> `phonenum` varchar(15) NOT NULL COMMENT '手机号',
  -> PRIMARY KEY (`id`)
  -> ) ENGINE=InnoDB AUTO_INCREMENT=9 DEFAULT CHARSET=utf8 COMMENT='用户表';
Query OK, 0 rows affected (0.05 sec)
mysql>
```

8、查看表格

```
show tables;
```

```
mysql> show tables;
+-----+
| Tables_in_chenriyuelakedb |
+-----+
| user                       |
+-----+
1 row in set (0.00 sec)
mysql>
```

9、查看表格结构

```
desc user;
```

```
mysql> desc user;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra           |
+-----+-----+-----+-----+-----+-----+
| id         | int(11)       | NO   | PRI | NULL    | auto_increment |
| username   | varchar(20)   | NO   |     | NULL    |                 |
| realname   | varchar(20)   | NO   |     | NULL    |                 |
| company    | varchar(50)   | NO   |     | NULL    |                 |
| password   | varchar(40)   | NO   |     | NULL    |                 |
| email      | varchar(20)   | NO   |     | NULL    |                 |
| phonenum   | varchar(15)   | NO   |     | NULL    |                 |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
mysql>
```

10、创建表格 sensordata

```
CREATE TABLE `sensordata` (
`id` int(11) NOT NULL AUTO_INCREMENT COMMENT '序号',
```

```
`recordtime` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP COMMENT '时间',  
`light` varchar(10) NOT NULL COMMENT '光照',  
`temperature` varchar(10) NOT NULL COMMENT '温度',  
`humidity` varchar(10) NOT NULL COMMENT '湿度',  
PRIMARY KEY (`id`)  
) ENGINE=InnoDB AUTO_INCREMENT=9 DEFAULT CHARSET=utf8 COMMENT='传感信息表';
```

```
mysql> CREATE TABLE `sensordata` (  
  -> `id` int(11) NOT NULL AUTO_INCREMENT COMMENT '序号',  
  -> `recordtime` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP COMMENT '时间',  
  -> `light` varchar(10) NOT NULL COMMENT '光照',  
  -> `temperature` varchar(10) NOT NULL COMMENT '温度',  
  -> `humidity` varchar(10) NOT NULL COMMENT '湿度',  
  -> PRIMARY KEY (`id`)  
  -> ) ENGINE=InnoDB AUTO_INCREMENT=9 DEFAULT CHARSET=utf8 COMMENT='传感信息表';  
Query OK, 0 rows affected (0.03 sec)  
mysql>
```

11、查看表格

```
show tables;
```

```
mysql> show tables;  
+-----+  
| Tables_in_chenriyuelakedb |  
+-----+  
| sensordata                 |  
| user                       |  
+-----+  
2 rows in set (0.00 sec)  
mysql>
```

12、查看表格结构

```
desc sensordata;
```

```
mysql> desc sensordata;  
+-----+-----+-----+-----+-----+-----+  
| Field      | Type          | Null | Key | Default        | Extra      |  
+-----+-----+-----+-----+-----+-----+  
| id         | int(11)       | NO   | PRI | NULL           | auto_increment |  
| recordtime | datetime      | NO   |     | CURRENT_TIMESTAMP |  
| light      | varchar(10)   | NO   |     | NULL           |  
| temperature | varchar(10)  | NO   |     | NULL           |  
| humidity   | varchar(10)   | NO   |     | NULL           |  
+-----+-----+-----+-----+-----+-----+  
5 rows in set (0.00 sec)  
mysql>
```

5.4 数据库的测试

1、朝着 user 插入数据

```
insert into user(username, realname, company, password, email, phonenum) values ('admin', '陈老师', '中大', '1111111', 'xachen@cjlu.edu.cn', '13067841001');
```

```
insert into user(username, realname, company, password, email, phonenum) values ('chen', '陈老师', '中大', '1111111', 'cc@163.com', '13067841002');
```

2、在 mysql 的 cmd 界面中依次输入上述两条指令并回车，

```
mysql> insert into user(username, realname, company, password, email, phonenum) values ('admin', '陈老师', '中大', '111111', 'xachen@cjlu.edu.cn', '13067841001');
Query OK, 1 row affected (0.01 sec)

mysql> insert into user(username, realname, company, password, email, phonenum) values ('chen', '陈老师', '中大', '111111', 'cc@163.com', '13067841002');
Query OK, 1 row affected (0.01 sec)

mysql>
```

3、查看已插入的数据

```
select * from user;
```

在 mysql 的 cmd 界面中依次输入 `select * from user;`指令并回车，

```
mysql> select * from user;
```

	id	username	realname	company	password	email	phonenum
	9	admin	陈老师	中大	1111111	xachen@cjlu.edu.cn	13067841001
	10	chen	陈老师	中大	1111111	cc@163.com	13067841002

```
2 rows in set (0.00 sec)

mysql>
```

4、朝着 sensordata 表插入数据

```
insert into sensordata (light, temperature, humidity) values ('100.3', '25.8', '90.2');
```

```
insert into sensordata (light, temperature, humidity) values ('90.1', '26.2', '91.3');
```

5、在 mysql 的 cmd 界面中依次输入上述两条指令并回车，

```
mysql> insert into sensordata (light, temperature, humidity) values ('100.3', '25.8', '90.2');
Query OK, 1 row affected (0.01 sec)

mysql> insert into sensordata (light, temperature, humidity) values ('90.1', '26.2', '91.3');
Query OK, 1 row affected (0.00 sec)

mysql>
```

6、查看已插入的数据

```
select * from sensordata;
```

在 mysql 的 cmd 界面中依次输入 `select * from sensordata;`指令并回车，

```
mysql> select * from sensordata;
```

id	recordtime	light	temperature	humidity
9	2019-04-05 16:10:37	100.3	25.8	90.2
10	2019-04-05 16:10:43	90.1	26.2	91.3

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

```
mysql>
```