实验二：创建相关的数据库以及表格

1. 创建的表的截图

课程表C：

院系表D：

开课表O：

选课表E：

	student_id	term	class_id	teacher_id	score
1	1101	201201	08305001	0103	60
2	1102	201201	08305001	0103	87
3	1102	201202	08305002	0103	82
4	1102	201301	08305004	0101	<null>
5	1103	201201	08305001	0103	56
6	1103	201202	08305002	0102	75
7	1103	201202	08305003	0102	84
8	1103	201301	08305001	0102	<null>
9	1103	201301	08305004	0101	<null>
10	1104	201201	08305001	0103	74
11	1104	201302	08302001	0201	<null>
12	1106	201201	08305001	0103	85
13	1106	201202	08305002	0103	66
14	1107	201201	08305001	0103	90
15	1107	201202	08305003	0102	79
16	1107	2013-2014秋季	08305004	0101	<null>

学生表S:

	student_id	student_name	gender	birthday	native_place	phone_number	yxh	state
1	1101	李明	男	1993-03-06 00:00:00	上海	13613005486	02	<null>
2	1102	刘晓明	男	1992-12-08 00:00:00	安徽	18913457890	01	<null>
3	1103	张颖	女	1993-01-05 00:00:00	江苏	18826490423	01	<null>
4	1104	刘晶晶	女	1994-11-06 00:00:00	上海	13331934111	01	<null>
5	1105	刘成刚	男	1991-06-07 00:00:00	上海	18015872567	01	<null>
6	1106	李二丽	女	1993-05-04 00:00:00	江苏	18107620945	01	<null>
7	1107	张晓峰	男	1992-08-16 00:00:00	浙江	13912341078	01	<null>

教师表T：

	teacher_id	teacher_name	gender	birthday	job_title	yxh
1	0101	陈迪茂	男	1973-03-06 00:00:00	副教授	01
2	0102	马小红	女	1972-12-08 00:00:00	讲师	01
3	0103	吴宝钢	男	1980-11-06 00:00:00	讲师	01
4	0201	张心颖	女	1960-01-05 00:00:00	教授	02

2. 相关的代码：

```sql
-- create the student table --
CREATE TABLE Student
(
    student_id      int         NOT NULL AUTO_INCREMENT ,
    name            char(50)    NOT NULL ,
    gender          char(5)     NOT NULL ,
    birthday        datetime    NOT NULL ,
    native_place    char(50)    NOT NULL ,
    phone_number    char(50)    NOT NULL ,
    yxh             char(10)    NOT NULL ,
    state           char(20)    NULL ,

    PRIMARY KEY (student_id)
) ENGINE=InnoDB;

-- create table of departments --
CREATE TABLE department
```

```sql
(
    yxh             char(10)    NOT NULL ,
    depart_name     char(50)    NOT NULL ,
    depart_place    char(100)   NOT NULL ,
    depart_phone    char(50)    NOT NULL ,

    PRIMARY KEY (yxh)
) ENGINE = InnoDB;

-- create table of teachers --
CREATE TABLE teacher
(
    teacher_id      char(10)    NOT NULL ,
    teacher_name    char(20)    NOT NULL ,
    gender          char(2)     NOT NULL ,
    birthday        datetime    NOT NULL ,
    job_title       char(10)    NOT NULL ,
    yxh             char(10)    NOT NULL ,

    PRIMARY KEY (teacher_id)
) ENGINE = InnoDB;

-- create the table of class --
CREATE TABLE class
(
    class_id        char(15)    NOT NULL ,
    class_name      char(20)    NOT NULL ,
    class_score     int         NOT NULL ,
    class_time      int         NOT NULL ,
    yxh             char(10)    NOT NULL ,

    PRIMARY KEY (class_id)
) ENGINE = InnoDB;

-- create the table of open_class --
CREATE TABLE open_class
(
    term            char(10)    NOT NULL ,
    class_id        char(10)    NOT NULL ,
    teacher_id      char(10)    NOT NULL ,
    schooltime      char(20)    NOT NULL ,

    PRIMARY KEY (term,class_id)
) ENGINE = InnoDB;

-- create the table of select_class
CREATE TABLE select_class
(
    student_id      int         NOT NULL ,
    term            char(10)    NOT NULL ,
    class_id        char(15)    NOT NULL ,
    teacher_id      char(10)    NOT NULL ,
    score           int         NULL ,

    PRIMARY KEY (student_id,term,class_id,teacher_id)
```

```sql
) ENGINE = InnoDB;
```

```sql
-- define foreign keys --
ALTER TABLE student ADD CONSTRAINT fk_student_yxh FOREIGN KEY (yxh)
REFERENCES department (yxh);
ALTER TABLE teacher ADD CONSTRAINT fk_tearcher_yxh FOREIGN KEY (yxh)
REFERENCES department (yxh);

ALTER TABLE class ADD CONSTRAINT fk_class_yxh FOREIGN KEY (yxh) REFERENCES
department (yxh);

ALTER TABLE open_class ADD CONSTRAINT fk_open_class FOREIGN KEY (class_id)
REFERENCES class (class_id);
ALTER TABLE open_class ADD CONSTRAINT fk_open_tercher FOREIGN KEY
(teacher_id) REFERENCES teacher (teacher_id);

ALTER TABLE select_class ADD CONSTRAINT fk_select_student FOREIGN KEY
(student_id) REFERENCES student (student_id);
ALTER TABLE select_class ADD CONSTRAINT fk_select_class FOREIGN KEY
(class_id) REFERENCES class (class_id);
ALTER TABLE select_class ADD CONSTRAINT fk_select_teacher FOREIGN KEY
(teacher_id) REFERENCES teacher (teacher_id);



# show create table select_class;
# show create table open_class;
# alter table open_class modify column term varchar(30);
# alter table open_class modify column class_id char(15);
# alter table open_class drop foreign key fk_open_class;




-- Populate student table --
INSERT INTO student(student_id, student_name, gender, birthday,
native_place, phone_number, yxh)
VALUES (1101,'李明','男','1993-03-06','上海','13613005486','02');
INSERT INTO student(student_id, student_name, gender, birthday,
native_place, phone_number, yxh)
VALUES (1102,'刘晓明','男','1992-12-08','安徽','18913457890','01');
INSERT INTO student(student_id, student_name, gender, birthday,
native_place, phone_number, yxh)
VALUES (1103,'张颖','女','1993-01-05','江苏','18826490423','01');
INSERT INTO student(student_id, student_name, gender, birthday,
native_place, phone_number, yxh)
VALUES (1104,'刘晶晶','女','1994-11-06','上海','13331934111','01');
INSERT INTO student(student_id, student_name, gender, birthday,
native_place, phone_number, yxh)
VALUES (1105,'刘成刚','男','1991-06-07','上海','18015872567','01');
INSERT INTO student(student_id, student_name, gender, birthday,
native_place, phone_number, yxh)
VALUES (1106,'李二丽','女','1993-05-04','江苏','18107620945','01');
INSERT INTO student(student_id, student_name, gender, birthday,
native_place, phone_number, yxh)
```

```sql
VALUES (1107,'张晓峰','男','1992-08-16','浙江','13912341078','01');

-- Populate department table --
INSERT INTO department(yxh, depart_name, depart_place, depart_phone)
VALUES ('01','计算机学院','上大东校区三号楼','65347567');
INSERT INTO department(yxh, depart_name, depart_place, depart_phone)
VALUES ('02','通讯学院','上大东校区二号楼','65341234');
INSERT INTO department(yxh, depart_name, depart_place, depart_phone)
VALUES ('03','材料学院','上大东校区四号楼','65347890');

-- Populate teacher table --
INSERT INTO teacher(teacher_id, teacher_name, gender, birthday, job_title,
yxh)
VALUES ('0101','陈迪茂','男','1973-03-06','副教授','01');
INSERT INTO teacher(teacher_id, teacher_name, gender, birthday, job_title,
yxh)
VALUES ('0102','马小红','女','1972-12-08','讲师','01');
INSERT INTO teacher(teacher_id, teacher_name, gender, birthday, job_title,
yxh)
VALUES ('0201','张心颖','女','1960-01-05','教授','02');
INSERT INTO teacher(teacher_id, teacher_name, gender, birthday, job_title,
yxh)
VALUES ('0103','吴宝钢','男','1980-11-06','讲师','01');

-- Populate open_class table --
INSERT INTO open_class(term, class_id, teacher_id, schooltime)
VALUES ('201201','08305001','0103','星期三5-8');
INSERT INTO open_class(term, class_id, teacher_id, schooltime)
VALUES ('201202','08305002','0101','星期三1-4');
INSERT INTO open_class(term, class_id, teacher_id, schooltime)
VALUES ('201202','08305002','0102','星期三1-4');
INSERT INTO open_class(term, class_id, teacher_id, schooltime)
VALUES ('201202','08305002','0103','星期三1-4');
INSERT INTO open_class(term, class_id, teacher_id, schooltime)
VALUES ('201202','08305003','0102','星期五5-8');
INSERT INTO open_class(term, class_id, teacher_id, schooltime)
VALUES ('201201','08305004','0101','星期二1-4');
INSERT INTO open_class(term, class_id, teacher_id, schooltime)
VALUES ('201201','08305001','0102','星期三5-8');
INSERT INTO open_class(term, class_id, teacher_id, schooltime)
VALUES ('201202','08305001','0101','星期三5-8');
-- change the primary key of table --
-- alter table open_class drop primary key ;
-- alter table open_class add primary key (term,class_id,teacher_id);


-- Populate class table --
INSERT INTO class(class_id, class_name, class_score, class_time, yxh)
VALUES ('08305001','离散数学',4,40,'01');
INSERT INTO class(class_id, class_name, class_score, class_time, yxh)
VALUES ('08305002','数据库原理',4,50,'01');
INSERT INTO class(class_id, class_name, class_score, class_time, yxh)
VALUES ('08305003','数据结构',4,50,'01');
INSERT INTO class(class_id, class_name, class_score, class_time, yxh)
VALUES ('08305004','系统结构',6,60,'01');
```

```sql
INSERT INTO class(class_id, class_name, class_score, class_time, yxh)
VALUES ('08301001','分子物理学',4,40,'03');
INSERT INTO class(class_id, class_name, class_score, class_time, yxh)
VALUES ('08302001','通信学',3,30,'02');
-- show create table class;

-- Populate class table --
INSERT INTO select_class(student_id, term, class_id, teacher_id, score)
VALUES (1101,'201201','08305001','0103',60);
INSERT INTO select_class(student_id, term, class_id, teacher_id, score)
VALUES (1102,'201201','08305001','0103',87);
INSERT INTO select_class(student_id, term, class_id, teacher_id, score)
VALUES (1102,'201202','08305002','0103',82);
INSERT INTO select_class(student_id, term, class_id, teacher_id)
VALUES (1102,'201301','08305004','0101');
INSERT INTO select_class(student_id, term, class_id, teacher_id,score)
VALUES (1103,'201201','08305001','0103',56);
INSERT INTO select_class(student_id, term, class_id, teacher_id, score)
VALUES (1103,'201202','08305002','0102',75);
INSERT INTO select_class(student_id, term, class_id, teacher_id, score)
VALUES (1103,'201202','08305003','0102',84);
INSERT INTO select_class(student_id, term, class_id, teacher_id)
VALUES (1103,'201301','08305001','0102');
INSERT INTO select_class(student_id, term, class_id, teacher_id)
VALUES (1103,'201301','08305004','0101');
INSERT INTO select_class(student_id, term, class_id, teacher_id,score)
VALUES (1104,'201201','08305001','0103',74);
INSERT INTO select_class(student_id, term, class_id, teacher_id)
VALUES (1104,'201302','08302001','0201');
INSERT INTO select_class(student_id, term, class_id, teacher_id,score)
VALUES (1106,'201201','08305001','0103',85);
INSERT INTO select_class(student_id, term, class_id, teacher_id, score)
VALUES (1106,'201202','08305002','0103',66);
INSERT INTO select_class(student_id, term, class_id, teacher_id, score)
VALUES (1107,'201201','08305001','0103',90);
INSERT INTO select_class(student_id, term, class_id, teacher_id, score)
VALUES (1107,'201202','08305003','0102',79);
INSERT INTO select_class(student_id, term, class_id, teacher_id)
VALUES (1107,'2013-2014秋季','08305004','0101');

-- alter table select_class modify column term varchar(30);
```