数据库结构

创建四张表 分别存储 学生信息 课程信息 分数 讲师信息表 存储相应数据

学生信息表 Student

|  |  |  |
| --- | --- | --- |
| 字段名 | 字段类型 | 字段约束 / 含义 |
| Sno | Varchar(3) | Not null / 学员编号 |
| Sname | Varchar(4) | Not null / 学员姓名 |
| Ssex | Varchar(2) | Not null / 性别 |
| Sbirthday | Datetime | 生日 |
| Classnum | Varchar(5) | 班级号 |

0

CREATE TABLE STUDENT

(

SNO VARCHAR(3) NOT NULL,

SNAME VARCHAR(4) NOT NULL,

SSEX VARCHAR(2) NOT NULL,

SBIRTHDAY DATETIME,

CLASS VARCHAR(5)

)

课程信息表 course

|  |  |  |
| --- | --- | --- |
| 字段名 | 字段类型 | 字段约束 / 含义 |
| Cno | Varchar(5) | Not null / 课程编号 |
| Cname | Varchar(10) | Not null / 课程名称 |
| Tno | Varchar(10) | Not null / 授课老师编号 |

CREATE TABLE COURSE

(CNO VARCHAR(5) NOT NULL,

CNAME VARCHAR(10) NOT NULL,

TNO VARCHAR(10) NOT NULL)

成绩表score

|  |  |  |
| --- | --- | --- |
| 字段名 | 字段类型 | 字段约束 / 含义 |
| Sno | Varchar(3) | Not null / 学员编号 |
| Cno | Varchar(5) | Not null / 课程编号 |
| Degree | Double(3,1) | Not null / 分数 |

CREATE TABLE SCORE

(SNO VARCHAR(3) NOT NULL,

CNO VARCHAR(5) NOT NULL,

DEGREE NUMERIC(10, 1) NOT NULL)

讲师表teacher

|  |  |  |
| --- | --- | --- |
| 字段名 | 字段类型 | 字段约束 / 含义 |
| Tno | Varchar(3) | Not null / 讲师编号 |
| Tname | Varchar(4) | Not null / 讲师姓名 |
| Tsex | Varchar(2) | Not null / 讲师性别 |
| Tbirthday | Datetime | Not null / 出生日期 |
| Prof | Varchar(6) | 等级 |
| Depart | Varchar(10) | 所属院系 |

CREATE TABLE TEACHER

(TNO VARCHAR(3) NOT NULL,

TNAME VARCHAR(4) NOT NULL, TSEX VARCHAR(2) NOT NULL,

TBIRTHDAY DATETIME NOT NULL, PROF VARCHAR(6),

DEPART VARCHAR(10) NOT NULL)

向表中存储数据

INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (108 ,'曾华' ,'男' ,1977-09-01,95033);  
INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (105 ,'匡明' ,'男' ,1975-10-02,95031);  
INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (107 ,'王丽' ,'女' ,1976-01-23,95033);  
INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (101 ,'李军' ,'男' ,1976-02-20,95033);  
INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (109 ,'王芳' ,'女' ,1975-02-10,95031);  
INSERT INTO STUDENT (SNO,SNAME,SSEX,SBIRTHDAY,CLASS) VALUES (103 ,'陆君' ,'男' ,1974-06-03,95031);  
GO  
INSERT INTO COURSE(CNO,CNAME,TNO)VALUES ('3-105' ,'计算机导论',825)  
INSERT INTO COURSE(CNO,CNAME,TNO)VALUES ('3-245' ,'操作系统' ,804);  
INSERT INTO COURSE(CNO,CNAME,TNO)VALUES ('6-166' ,'数据电路' ,856);  
INSERT INTO COURSE(CNO,CNAME,TNO)VALUES ('9-888' ,'高等数学' ,100);  
GO  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (103,'3-245',86);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (105,'3-245',75);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (109,'3-245',68);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (103,'3-105',92);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (105,'3-105',88);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (109,'3-105',76);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (101,'3-105',64);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (107,'3-105',91);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (108,'3-105',78);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (101,'6-166',85);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (107,'6-106',79);  
INSERT INTO SCORE(SNO,CNO,DEGREE)VALUES (108,'6-166',81);  
GO  
INSERT INTO TEACHER(TNO,TNAME,TSEX,TBIRTHDAY,PROF,DEPART)   
VALUES (804,'李诚','男','1958-12-02','副教授','计算机系');  
INSERT INTO TEACHER(TNO,TNAME,TSEX,TBIRTHDAY,PROF,DEPART)   
VALUES (856,'张旭','男','1969-03-12','讲师','电子工程系');  
INSERT INTO TEACHER(TNO,TNAME,TSEX,TBIRTHDAY,PROF,DEPART)  
VALUES (825,'王萍','女','1972-05-05','助教','计算机系');  
INSERT INTO TEACHER(TNO,TNAME,TSEX,TBIRTHDAY,PROF,DEPART)   
VALUES (831,'刘冰','女','1977-08-14','助教','电子工程系');

1、 查询Student表中的所有记录的Sname、Ssex和Class列。

SELECT SNAME,SSEX,CLASS FROM STUDENT;

2、 查询教师所有的单位即不重复的Depart列。

SELECT DISTINCT DEPART FROM TEACHER;

3、 查询Student表的所有记录。

SELECT \* FROM STUDENT;

4、 查询Score表中成绩在60到80之间的所有记录。

SELECT \* FROM SCORE WHERE DEGREE BETWEEN 60 AND 80;

5、 查询Score表中成绩为85，86或88的记录。

SELECT \* FROM SCORE WHERE DEGREE BETWEEN 60 AND 80;

6、 查询Student表中“95031”班或性别为“女”的同学记录。

SELECT \* FROM STUDENT WHERE CLASS='95031' OR SSEX='女';

7、 以Class降序查询Student表的所有记录。

SELECT \* FROM STUDENT ORDER BY CLASS DESC;

8、 以Cno升序、Degree降序查询Score表的所有记录。

SELECT \* FROM SCORE ORDER BY CNO,DEGREE DESC;

9、 查询“95031”班的学生人数。

SELECT COUNT(\*) FROM STUDENT WHERE CLASS='95031';

10、查询Score表中的最高分的学生学号和课程号。

SELECT SNO,CNO FROM SCORE WHERE DEGREE IN (SELECT MAX(DEGREE) FROM SCORE);

11、查询‘3-105’号课程的平均分。

SELECT CNO,AVG(DEGREE) FROM SCORE WHERE CNO='3-105';

12、查询Score表中至少有5名学生选修的并以3开头的课程的平均分数。

SELECT CNO,AVG(DEGREE) FROM SCORE GROUP BY CNO HAVING COUNT(\*)>=5 AND CNO LIKE '3%';

13、查询最低分大于70，最高分小于90的Sno列。

SELECT SNO FROM SCORE GROUP BY SNO HAVING MIN(DEGREE)>70 AND MAX(DEGREE)<90;

14、查询所有学生的Sname、Cno和Degree列。

SELECT A.SNAME,B.CNO,B.DEGREE FROM STUDENT A,SCORE B WHERE A.SNO=B.SNO;

15、查询所有学生的Sno、Cname和Degree列。

SELECT B.SNO,A.CNAME,B.DEGREE FROM COURSE A,SCORE B WHERE A.CNO=B.CNO;

16、查询所有学生的Sname、Cname和Degree列。

SELECT A.SNAME,B.CNAME,C.DEGREE FROM STUDENT A,COURSE B,SCORE C WHERE A.SNO=C.SNO AND B.CNO=C.CNO;

17、查询“95033”班所选课程的平均分。

SELECT AVG(DEGREE) FROM SCORE WHERE SNO IN (SELECT SNO FROM STUDENT WHERE CLASS='95033');

18、假设使用如下命令建立了一个grade表：

create table grade(low number(3,0),upp number(3),rank char(1));  
insert into grade values(90,100,’A’);  
insert into grade values(80,89,’B’);  
insert into grade values(70,79,’C’);  
insert into grade values(60,69,’D’);  
insert into grade values(0,59,’E’);  
commit;  
现查询所有同学的Sno、Cno和rank列。  
19、查询选修“3-105”课程的成绩高于“109”号同学成绩的所有同学的记录。

SELECT \* FROM STUDENT WHERE SNO IN (SELECT SNO FROM SCORE WHERE CNO='3-105' AND DEGREE >(SELECT DEGREE FROM SCORE WHERE CNO='3-105' AND SNO='109'));

20、查询score中选学一门以上课程的同学中分数为非最高分成绩的记录。

SELECT \* FROM SCORE GROUP BY SNO HAVING COUNT(\*)>1;

SELECT \* FROM SCORE GROUP BY CNO HAVING DEGREE=MAX(DEGREE);

SELECT \* FROM SCORE WHERE SNO IN (SELECT SNO FROM SCORE GROUP BY SNO HAVING COUNT(\*)>1) AND (SNO,CNO,DEGREE) NOT IN (SELECT \* FROM SCORE GROUP BY CNO HAVING DEGREE=MAX(DEGREE));

21、查询成绩高于学号为“109”、课程号为“3-105”的成绩的所有记录。

SELECT \* FROM SCORE WHERE CNO='3-105' AND DEGREE >(SELECT DEGREE FROM SCORE WHERE CNO='3-105' AND SNO='109');

22、查询和学号为108的同学同年出生的所有学生的Sno、Sname和Sbirthday列。

SELECT SNO,SNAME,SBIRTHDAY FROM STUDENT WHERE SBIRTHDAY=(SELECT SBIRTHDAY FROM STUDENT WHERE SNO='108') AND SNO!='108';

23、查询“张旭“教师任课的学生成绩。

SELECT A.SNO,A.CNO,A.DEGREE FROM SCORE A,COURSE B,TEACHER C WHERE C.TNAME='张旭' AND C.TNO=B.TNO AND B.CNO=A.CNO;

24、查询选修某课程的同学人数多于5人的教师姓名。

SELECT C.TNAME FROM COURSE B,TEACHER C WHERE B.CNO=(SELECT CNO FROM SCORE GROUP BY CNO HAVING COUNT(\*)>5) AND B.TNO=C.TNO ;

25、查询95033班和95031班全体学生的记录。

SELECT \* FROM STUDENT WHERE CLASS IN ('95033','95031');

26、查询存在有85分以上成绩的课程Cno.

SELECT \* FROM COURSE WHERE CNO IN (SELECT CNO FROM SCORE GROUP BY CNO HAVING MAX(DEGREE)>=85);

27、查询出“计算机系“教师所教课程的成绩表。

SELECT A.SNO,A.CNO,A.DEGREE FROM SCORE A,COURSE B,TEACHER C WHERE C.DEPART='计算机系' AND C.TNO=B.TNO AND B.CNO=A.CNO;

28、查询“计算机系”与“电子工程系“不同职称的教师的Tname和Prof。

SELECT \* FROM TEACHER GROUP BY PROF HAVING COUNT(\*)<2 AND DEPART IN('计算机系','电子工程系');

29、查询选修编号为“3-105“课程且成绩至少高于选修编号为“3-245”的同学的Cno、Sno和Degree,并按Degree从高到低次序排序。

SELECT \* FROM SCORE WHERE CNO='3-105' AND DEGREE > ALL(SELECT DEGREE FROM SCORE WHERE CNO='3-245') ORDER BY DEGREE DESC;

30、查询选修编号为“3-105”且成绩高于选修编号为“3-245”课程的同学的Cno、Sno和Degree.

SELECT \* FROM SCORE WHERE CNO='3-105' AND DEGREE > ALL(SELECT DEGREE FROM SCORE WHERE CNO='3-245');

31、查询所有教师和同学的name、sex和birthday.

32、查询所有“女”教师和“女”同学的name、sex和birthday.  
33、查询成绩比该课程平均成绩低的同学的成绩表。  
34、查询所有任课教师的Tname和Depart.  
35 查询所有未讲课的教师的Tname和Depart.   
36、查询至少有2名男生的班号。  
37、查询Student表中不姓“王”的同学记录。  
38、查询Student表中每个学生的姓名和年龄。  
39、查询Student表中最大和最小的Sbirthday日期值。  
40、以班号和年龄从大到小的顺序查询Student表中的全部记录。  
41、查询“男”教师及其所上的课程。  
42、查询最高分同学的Sno、Cno和Degree列。  
43、查询和“李军”同性别的所有同学的Sname.  
44、查询和“李军”同性别并同班的同学Sname.  
45、查询所有选修“计算机导论”课程的“男”同学的成绩表