# 19335262 张航悦 实验 3

## 练习1

> 查询全部课程的详细记录

```
1 select * from COURSES
```



| | cid | cname | hour |
|---|---|---|---|
| 1 | 10001 | database | 96 |
| 2 | 10002 | operating system | 88 |
| 3 | 10003 | computer graphics | 48 |
| 4 | 10004 | java | 48 |
| 5 | 10005 | c++ | 60 |
| 6 | 10006 | design pattern | 48 |
| 7 | 10007 | uml | 30 |
| 8 | 10008 | data structure | 60 |
| 9 | 10009 | cryptology | 36 |
| 10 | 10010 | software engineering | 50 |
| 11 | 10011 | distributed computing | 36 |
| 12 | 10012 | erp | 40 |
| 13 | 10013 | artifical intelligence | 46 |
| 14 | 10014 | computer network | 60 |
| 15 | 10015 | tcp/ip protocol | 68 |
| 16 | 10016 | data mining | 40 |
| 17 | 10017 | algorithm | 72 |

## 练习2

> 查询所有有选修课的学生的编号

```
1 SELECT DISTINCT SID
2 FROM CHOICES
```

| | SID |
|---|---|
| 1 | 853379616 |
| 2 | 890173866 |
| 3 | 820928013 |
| 4 | 802563629 |
| 5 | 895505176 |
| 6 | 830171441 |
| 7 | 837284641 |
| 8 | 816522768 |
| 9 | 859912863 |
| 10 | 819364407 |
| 11 | 867202769 |
| 12 | 865257713 |
| 13 | 805270936 |
| 14 | 832763245 |
| 15 | 826772208 |
| 16 | 825319033 |
| 17 | 878637448 |

## 练习3

查询课时<88(小时)的课程的编号

```sql
SELECT CID
FROM COURSES
WHERE hour<'48'
```

| | CID |
|---|---|
| 1 | 10007 |
| 2 | 10009 |
| 3 | 10011 |
| 4 | 10012 |
| 5 | 10013 |
| 6 | 10016 |
| 7 | 10018 |
| 8 | 10019 |
| 9 | 10020 |
| 10 | 10021 |
| 11 | 10022 |
| 12 | 10023 |
| 13 | 10024 |
| 14 | 10025 |
| 15 | 10026 |
| 16 | 10027 |
| 17 | 10030 |

## 练习4

请找出总分超过400分的学生

```
1  SELECT SID
2  FROM CHOICES
3  GROUP BY SID
4  HAVING SUM(SCORE)>400
```

| | SID |
|---|---|
| 1 | 828045342 |
| 2 | 870534555 |
| 3 | 809948538 |
| 4 | 890399620 |
| 5 | 820627640 |
| 6 | 836636077 |
| 7 | 861894629 |
| 8 | 823300013 |
| 9 | 889057524 |
| 10 | 855118484 |
| 11 | 841951915 |
| 12 | 820039470 |
| 13 | 860617178 |
| 14 | 859441344 |
| 15 | 899016732 |
| 16 | 831627491 |
| 17 | 834054910 |

## 练习5

查询课程的总数

```
1  SELECT COUNT(*) FROM COURSES
```

| | （无列名） |
|---|---|
| 1 | 50 |

## 练习6

查询所有课程和选修该课程的学生总数

```sql
SELECT CID,COUNT(NO) AS 'COUNT'
FROM CHOICES
GROUP BY CID
```

| | CID | COUNT |
|---|---|---|
| 1 | 10008 | 5985 |
| 2 | 10019 | 6074 |
| 3 | 10018 | 5969 |
| 4 | 10040 | 6102 |
| 5 | 10011 | 6086 |
| 6 | 10028 | 6042 |
| 7 | 10035 | 6104 |
| 8 | 10021 | 5916 |
| 9 | 10046 | 6069 |
| 10 | 10032 | 6073 |
| 11 | 10005 | 6031 |
| 12 | 10050 | 6077 |
| 13 | 10034 | 6000 |
| 14 | 10015 | 5990 |
| 15 | 10036 | 6043 |
| 16 | 10045 | 6041 |
| 17 | 10025 | 5955 |

## 练习7

查询选修成绩超过60的课程超过两门的学生编号

```
SELECT SID
FROM CHOICES
WHERE SCORE >60
GROUP BY SID
HAVING COUNT(*)>2
```

| | SID |
|---|---|
| 1 | 878053860 |
| 2 | 829449283 |
| 3 | 801570263 |
| 4 | 844390223 |
| 5 | 813341635 |
| 6 | 883267049 |
| 7 | 882058744 |
| 8 | 849129641 |
| 9 | 848793279 |
| 10 | 853657420 |
| 11 | 823490147 |
| 12 | 895538011 |
| 13 | 806440879 |
| 14 | 892772053 |
| 15 | 895923295 |
| 16 | 804925898 |
| 17 | 893967653 |

## 练习8

统计各个学生的选修课程数目和平均成绩;

```sql
SELECT SID,AVG(SCORE) AS 'ave',COUNT(*) AS 'num'
FROM CHOICES
GROUP BY SID
```

| | SID | ave | num | |
|---|---|---|---|---|
| 1 | 807308259 | 74 | 3 | |
| 2 | 881360462 | 74 | 5 | |
| 3 | 840741597 | 75 | 3 | |
| 4 | 852548704 | 84 | 3 | |
| 5 | 871834245 | 69 | 3 | |
| 6 | 807238678 | 75 | 4 | |
| 7 | 833391065 | 95 | 3 | |
| 8 | 832910376 | 82 | 5 | |
| 9 | 864922682 | 86 | 2 | |
| 10 | 812596136 | 72 | 4 | |
| 11 | 871162273 | 71 | 5 | |
| 12 | 839006320 | 67 | 3 | |
| 13 | 824924705 | 75 | 2 | |
| 14 | 849465926 | 86 | 2 | |
| 15 | 889351393 | 85 | 4 | |
| 16 | 852755258 | 83 | 4 | |
| 17 | 804496460 | 75 | 4 | |

## 练习9

> 查询选修Java的所有学生的编号及姓名

```
SELECT CHOICES.sid,STUDENTS.sname
FROM CHOICES,COURSES,STUDENTS
WHERE CHOICES.cid=COURSES.cid AND COURSES.cname='Java'
AND CHOICES.sid=STUDENTS.sid
```

| | sid | sname |
|---|---|---|
| 1 | 806184572 | cqtbwkz |
| 2 | 806344334 | eweom |
| 3 | 806363564 | jxoxpi |
| 4 | 806563193 | psfqn |
| 5 | 806652071 | rttehyfsr |
| 6 | 807037392 | byqtxti |
| 7 | 834662442 | inzymdr |
| 8 | 835287132 | gipznq |
| 9 | 835305298 | ftdzjg |
| 10 | 835776154 | narvnzvf |
| 11 | 868664296 | iwvrdru |
| 12 | 868788919 | omdcbxb |
| 13 | 868871011 | bhnrf |
| 14 | 869909601 | wqexa |
| 15 | 870391448 | onswk |
| 16 | 870498586 | plruv |
| 17 | 870520659 | ybigqeo |

## 练习10

查询姓名为sssht的学生所选的课程的编号和成绩

```
1  SELECT CHOICES.cid,CHOICES.score
2  FROM CHOICES,STUDENTS
3  WHERE CHOICES.sid=STUDENTS.sid AND STUDENTS.sname='sssht'
```

| | cid | score |
|---|---|---|
| 1 | 10004 | 76 |
| 2 | 10037 | 54 |
| 3 | 10030 | 53 |
| 4 | 10019 | 79 |
| 5 | 10037 | 84 |

## 练习11

> 查询其他课时比课程C++多的课程的名称

```
1  SELECT DISTINCT A.cname
2  FROM COURSES AS A, COURSES AS B
3  WHERE A.hour>B.hour AND B.cname='C++'
4
```

| | cname |
|---|---|
| 1 | algorithm |
| 2 | compiling principle |
| 3 | database |
| 4 | operating system |
| 5 | tcp/ip protocol |