20BCS042 | Mohd Adil

Assignment 9

mysql> create table Student(

-> snum int,

-> sname varchar(10),

-> major varchar(10),

-> level varchar(2),

-> age int);

Query OK, 0 rows affected (0.05 sec)

mysql> create table class(

-> cname varchar(6),

-> meets\_at varchar(10),

-> room varchar(4),

-> fid int);

Query OK, 0 rows affected (0.02 sec)

mysql> create table Enrolled(

-> snum int,

-> cname varchar(6));

Query OK, 0 rows affected (0.03 sec)

mysql> create table Faculty(

-> fid int,

-> fname varchar(10),

-> deptid int);

Query OK, 0 rows affected (0.02 sec)

mysql> insert into student

-> values

-> (101, 'John', 'CS', 'SR', 19),

-> (102, 'Smith', 'CS', 'JR', 20),

-> (103, 'Jacob', 'ECE', 'SR', 20),

-> (104, 'Tom', 'CS', 'JR', 20),

-> (105, 'Sid', 'CS', 'JR', 20),

-> (106, 'Harry', 'History', 'SR', 21),

-> (107, 'Hellen', 'CS', 'JR', 21),

-> (108, 'Bob', 'English', 'SR', 22),

-> (109, 'Andy', 'ECE', 'JR', 21),

-> (110, 'Charles', 'History', 'SR', 23);

Query OK, 10 rows affected (0.02 sec)

Records: 10 Duplicates: 0 Warnings: 0

mysql> insert into class

-> values

-> ('CSC342', 'Morning', 'R128', 201),

-> ('CSC343', 'Noon', 'R128', 203),

-> ('CSC345', 'Night', 'R154', 204),

-> ('ECE300', 'Morning', 'R111', 202),

-> ('ECE301', 'Noon', 'R111', 203),

-> ('ENG366', 'Morning', 'R154', 203),

-> ('ENG367', 'Evening', 'R111', 205),

-> ('HIS320', 'Evening', 'R128', 205);

Query OK, 8 rows affected (0.01 sec)

Records: 8 Duplicates: 0 Warnings: 0

mysql> insert into Enrolled

-> values

-> (101, 'CSC342'),

-> (101, 'CSC343'),

-> (101, 'CSC345'),

-> (101, 'ECE300'),

-> (101, 'ENG366'),

-> (102, 'CSC343'),

-> (102, 'CSC345'),

-> (102, 'ECE301'),

-> (103, 'ECE300'),

-> (103, 'ECE301'),

-> (104, 'CSC342'),

-> (104, 'ECE301'),

-> (105, 'CSC345'),

-> (106, 'ECE300'),

-> (106, 'HIS320'),

-> (107, 'CSC366'),

-> (107, 'ENG366'),

-> (108, 'ENG367'),

-> (108, 'HIS320'),

-> (109, 'ECE300'),

-> (109, 'ECE301'),

-> (110, 'ENG366'),

-> (110, 'HIS320');

Query OK, 23 rows affected (0.01 sec)

Records: 23 Duplicates: 0 Warnings: 0

mysql> insert into Faculty

-> values

-> (201, 'S. Jackson', 301),

-> (202, 'M. Shanks', 302),

-> (203, 'I. Teach', 302),

-> (204, 'A. Zobrah', 303),

-> (205, 'M. Jensen', 303);

Query OK, 5 rows affected (0.01 sec)

Records: 5 Duplicates: 0 Warnings: 0

mysql> select \* from student;

+------+---------+---------+-------+------+

| snum | sname | major | level | age |

+------+---------+---------+-------+------+

| 101 | John | CS | SR | 19 |

| 102 | Smith | CS | JR | 20 |

| 103 | Jacob | ECE | SR | 20 |

| 104 | Tom | CS | JR | 20 |

| 105 | Sid | CS | JR | 20 |

| 106 | Harry | History | SR | 21 |

| 107 | Hellen | CS | JR | 21 |

| 108 | Bob | English | SR | 22 |

| 109 | Andy | ECE | JR | 21 |

| 110 | Charles | History | SR | 23 |

+------+---------+---------+-------+------+

10 rows in set (0.01 sec)

mysql> select \* from class;

+--------+----------+------+------+

| cname | meets\_at | room | fid |

+--------+----------+------+------+

| CSC342 | Morning | R128 | 201 |

| CSC343 | Noon | R128 | 203 |

| CSC345 | Night | R154 | 204 |

| ECE300 | Morning | R111 | 202 |

| ECE301 | Noon | R111 | 203 |

| ENG366 | Morning | R154 | 203 |

| ENG367 | Evening | R111 | 205 |

| HIS320 | Evening | R128 | 205 |

+--------+----------+------+------+

8 rows in set (0.01 sec)

mysql> select \* from Enrolled;

+------+--------+

| snum | cname |

+------+--------+

| 101 | CSC342 |

| 101 | CSC343 |

| 101 | CSC345 |

| 101 | ECE300 |

| 101 | ENG366 |

| 102 | CSC343 |

| 102 | CSC345 |

| 102 | ECE301 |

| 103 | ECE300 |

| 103 | ECE301 |

| 104 | CSC342 |

| 104 | ECE301 |

| 105 | CSC345 |

| 106 | ECE300 |

| 106 | HIS320 |

| 107 | CSC366 |

| 107 | ENG366 |

| 108 | ENG367 |

| 108 | HIS320 |

| 109 | ECE300 |

| 109 | ECE301 |

| 110 | ENG366 |

| 110 | HIS320 |

+------+--------+

23 rows in set (0.01 sec)

mysql> select \* from Faculty;

+------+------------+--------+

| fid | fname | deptid |

+------+------------+--------+

| 201 | S. Jackson | 301 |

| 202 | M. Shanks | 302 |

| 203 | I. Teach | 302 |

| 204 | A. Zobrah | 303 |

| 205 | M. Jensen | 303 |

+------+------------+--------+

5 rows in set (0.00 sec)

Queries :-

mysql> select distinct a.sname from Student a natural join Class b natural join Enrolled c natural join Faculty d where a.level = 'JR' and d.fname = 'I. Teach';

+--------+

| sname |

+--------+

| Smith |

| Tom |

| Hellen |

| Andy |

+--------+

4 rows in set (0.06 sec)

mysql> select a.sname, a.age from Student a natural join Class b natural join Enrolled c natural join Faculty d where d.fname = 'I. Teach' and a.major = 'History' and a.age = (select max(age) from Student a natural join Class b natural join Enrolled c natural join Faculty d where d.fname = 'I. Teach' and a.major = 'History');

+---------+------+

| sname | age |

+---------+------+

| Charles | 23 |

+---------+------+

1 row in set (0.01 sec)

mysql> select b.cname,count(\*) from Student a natural join Class b natural join Enrolled c natural join Faculty d where b.room = 'R128' or b.cname in (select cname from Enrolled group by cname having count(\*)>= 5) group by b.cname;

+--------+----------+

| cname | count(\*) |

+--------+----------+

| CSC343 | 2 |

| CSC342 | 2 |

| HIS320 | 3 |

+--------+----------+

3 rows in set (0.00 sec)

mysql> select a.sname from Student a natural join Class b natural join Enrolled c group by a.sname, b.meets\_at having count(\*) >= 2;

+-------+

| sname |

+-------+

| John |

| Smith |

| Bob |

+-------+

3 rows in set (0.01 sec)

mysql> select \* from Faculty where fid in (select fid from Class group by fid having count(\*) = (select count(distinct room) from Class));

+------+----------+--------+

| fid | fname | deptid |

+------+----------+--------+

| 203 | I. Teach | 302 |

+------+----------+--------+

1 row in set (0.01 sec)

mysql> select \* from Faculty where fid in (select fid from Class where cname in (select cname from Enrolled group by cname having count(\*)<5));

+------+------------+--------+

| fid | fname | deptid |

+------+------------+--------+

| 201 | S. Jackson | 301 |

| 202 | M. Shanks | 302 |

| 203 | I. Teach | 302 |

| 204 | A. Zobrah | 303 |

| 205 | M. Jensen | 303 |

+------+------------+--------+

5 rows in set (0.00 sec)

mysql> select level,avg(age) from Student group by level;

+-------+----------+

| level | avg(age) |

+-------+----------+

| SR | 21.0000 |

| JR | 20.4000 |

+-------+----------+

2 rows in set (0.00 sec)

mysql> select level,avg(age) from Student where level != 'JR' group by level;

+-------+----------+

| level | avg(age) |

+-------+----------+

| SR | 21.0000 |

+-------+----------+

1 row in set (0.00 sec)

mysql> select f.fname,count(\*) from Faculty f natural join Class c natural join Enrolled e where c.room = 'R128' group by fname;

+------------+----------+

| fname | count(\*) |

+------------+----------+

| S. Jackson | 2 |

| I. Teach | 2 |

| M. Jensen | 3 |

+------------+----------+

3 rows in set (0.00 sec)

mysql> select \* from Enrolled e natural join Student s group by e.snum order by count(\*) desc limit 1;

+------+--------+-------+-------+-------+------+

| snum | cname | sname | major | level | age |

+------+--------+-------+-------+-------+------+

| 101 | CSC342 | John | CS | SR | 19 |

+------+--------+-------+-------+-------+------+

1 row in set (0.01 sec)