

Q1. Find the emails of students. Above the SQL statement, please add a comment with your name and student identifier.

```
MariaDB [huanyinlab3db]> select email from student; --Koh Huan Yin 2001376
```

```
+-----+
| email |
+-----+
| angjiayi1990@hotmail.com |
| anniechapman1991@yahoo.com |
| chnghuiling1992@gmail.com |
| choyyiting1992@hotmail.com |
| davidchapman1989@msn.com |
| davidhall1992@yahoo.com |
| dennisbeckham1989@msn.com |
| dennispalmer1992@yahoo.com |
| dingweixiang1990@yahoo.com |
| fengmeng1990@gmail.com |
| geduo2010@yahoo.com |
| gohhuiying1989@gmail.com |
| huangwenxin2010@msn.com |
| huangxuanti1992@msn.com |
| huangzhanpeng1992@msn.com |
| irisbrown1992@hotmail.com |
| jennyhunt1991@gmail.com |
| kenowen2011@yahoo.com |
| lisasmith2011@msn.com |
| liushaojun2010@msn.com |
| liuyihui1990@hotmail.com |
| liuzhanpeng2011@msn.com |
| liuzhencai1990@msn.com |
| neelamdeol2011@hotmail.com |
| nganhquang1991@yahoo.com |
```

Q2. Find the different emails of students.

```
MariaDB [huanyinlab3db]> select distinct email from student;
```

```
+-----+
| email |
+-----+
| angjiayi1990@hotmail.com |
| anniechapman1991@yahoo.com |
| chnghuiling1992@gmail.com |
| choyyiting1992@hotmail.com |
| davidchapman1989@msn.com |
| davidhall1992@yahoo.com |
| dennisbeckham1989@msn.com |
| dennispalmer1992@yahoo.com |
| dingweixiang1990@yahoo.com |
| fengmeng1990@gmail.com |
| geduo2010@yahoo.com |
| gohhuiying1989@gmail.com |
| huangwenxin2010@msn.com |
| huangxuanti1992@msn.com |
| huangzhanpeng1992@msn.com |
| irisbrown1992@hotmail.com |
| jennyhunt1991@gmail.com |
| kenowen2011@yahoo.com |
| lisasmith2011@msn.com |
| liushaojun2010@msn.com |
| liuyihui1990@hotmail.com |
| liuzhanpeng2011@msn.com |
| liuzhencai1990@msn.com |
| neelamdeol2011@hotmail.com |
| nganhquang1991@yahoo.com |
| ngookaiting1991@yahoo.com |
| ngqiyang1989@msn.com |
| ngyanfen2010@msn.com |
| ngyongming2011@yahoo.com |
| pengjiayuan2011@hotmail.com |
| pohhuiling1992@hotmail.com |
| qinyiyang2010@hotmail.com |
| qinyuwei2011@hotmail.com |
```

Q3. Print the names of students in descending alphabetical order.

```
MariaDB [huanyinlab3db]> select name from student order by name desc;
```

name
ZHU CHANG
ZHOU XIALIN
ZHENG ZHEMIN
ZHENG XI
ZHENG NANA
ZHAO YANG
ZHANG HONG
ZHANG HAN
WANG NA
TSO HUI LIN
TAY YONG MING
TAY WEI GUO
SIOW CAO KHOA
SEAH TECK KEE
QIN YUWEI
QIN YIYANG
POH HUI LING
PENG JIAYUAN
NGOO KAI TING
NG YONG MING
NG YAN FEN
NG QI YANG
NG ANH QUANG
NEELAM DEOL
LIU ZHENCAI
LIU ZHANPENG
LIU YIHUI
LIU SHAOJUN
LISA SMITH
KEN OWEN

Q4. Are there students with the same name?

There are no students with same name

```
MariaDB [huanyinlab3db]> select name from student order by name desc;
```

```
+-----+
```

```
+-----+  
47 rows in set (0.000 sec)
```

```
MariaDB [huanyinlab3db]>
```

```
MariaDB [huanyinlab3db]> select distinct name from student order by name desc;
```

```
+-----+
```

```
+-----+  
47 rows in set (0.044 sec)
```

Q5. Find the different names of students. Is the result sorted? If not, please sort it.

```
MariaDB [huanyinlab3db]> select distinct name from student order by name desc;
```

name
ZHU CHANG
ZHOU XIALIN
ZHENG ZHEMIN
ZHENG XI
ZHENG NANA
ZHAO YANG
ZHANG HONG
ZHANG HAN
WANG NA
TSO HUI LIN
TAY YONG MING
TAY WEI GUO
SIOW CAO KHOA
SEAH TECK KEE
QIN YUWEI
QIN YIYANG
POH HUI LING
PENG JIAYUAN
NGOO KAI TING
NG YONG MING
NG YAN FEN
NG QI YANG
NG ANH QUANG
NEELAM DEOL
LIU ZHENCAI
LIU ZHANPENG
LIU YIHUI
LIU SHAOJUN
LISA SMITH
KEN OWEN

Q6. Find the names of students who owned a copy of the book '978- 0321474049'.

```
MariaDB [huanyinlab3db]> select distinct student.name, copy.owner, copy.book from copy inner join student on copy.owner = student.email where copy.book='978-0321474049';
```

name	owner	book
DAVID HALL	davidhall1992@yahoo.com	978-0321474049
LIU ZHENCAI	liuzhencai1990@msn.com	978-0321474049
NG YONG MING	ngyongming2011@yahoo.com	978-0321474049
WANG NA	wangna1990@yahoo.com	978-0321474049

4 rows in set (0.001 sec)

Q7. Find the names of the students who owned a copy of a book with more than 100 pages and the book title contains the word 'Photoshop'.

```
MariaDB [huanyinlab3db]> select student.name, copy.owner, book.title, book.pages from((
-> student inner join copy on student.email=copy.owner)
-> inner join book on copy.book=book.ISBN13)
-> where title like '%Photoshop%' and pages > 100;
```

name	owner	title	pages
GOH HUI YING	gohhuiying1989@gmail.com	Photoshop Elements 9: The Missing Manual	640
JENNY HUNT	jennyhunt1991@gmail.com	Photoshop Elements 9: The Missing Manual	640
TSO HUI LIN	tsohuilin1989@msn.com	Photoshop Elements 9: The Missing Manual	640
WANG NA	wangna1990@yahoo.com	Photoshop Elements 9: The Missing Manual	640

4 rows in set (0.000 sec)

Q8. Find the number of A4 pages needed to photocopy the two books with ISBN-13 '978-0321474049' and '978-0684801520' (duplex printing or 2 pages of a book can be copied on one A4 page).

```
MariaDB [huanyinlab3db]> select title, ISBN13, ceiling(pages/2) from book
-> where ISBN13='978-0321474049' or ISBN13='978-0684801520';
```

title	ISBN13	ceiling(pages/2)
The Digital Photography Book	978-0321474049	110
The Great Gatsby	978-0684801520	108

2 rows in set (0.000 sec)

Q9. Find the different names of the students who owned a copy of a book other than '978-0321474049'.

```
MariaDB [huanyinlab3db]> select distinct student.name, copy.owner, copy.book from student
-> inner join copy on student.email = copy.owner
-> where book != '978-0321474049';
```

name	owner	book
JENNY HUNT	jennyhunt1991@gmail.com	978-0684801520
LIU SHAOJUN	liushaojun2010@msn.com	978-0684801520
TAY WEI GUO	tayweiguo1989@msn.com	978-0684801520
GOH HUI YING	gohhuiying1989@gmail.com	978-1449389673
JENNY HUNT	jennyhunt1991@gmail.com	978-1449389673
TSO HUI LIN	tsohuilin1989@msn.com	978-1449389673
WANG NA	wangna1990@yahoo.com	978-1449389673
HUANG ZHANPENG	huangzhanpeng1992@msn.com	978-1594487712
QIN YUWEI	qinyuwei2011@hotmail.com	978-1594487712
ZHANG HAN	zhanghan1989@hotmail.com	978-1594487712
ZHU CHANG	zhuchang2010@gmail.com	978-1594487712

11 rows in set (0.000 sec)

Q10. Find the names of students who borrowed a copy of the book '978- 0321474049'.

```
MariaDB [huanyinlab3db]> select distinct student.name, loan.borrower, loan.book from student
-> inner join loan on student.email = loan.borrower
-> where book='978-0321474049';
```

name	borrower	book
CHNG HUI LING	chnghuiling1992@gmail.com	978-0321474049
CHOY YI TING	choyyiting1992@hotmail.com	978-0321474049
DAVID CHAPMAN	davidchapman1989@msn.com	978-0321474049
DENNIS BECKHAM	dennisbeckham1989@msn.com	978-0321474049
DENNIS PALMER	dennispalmer1992@yahoo.com	978-0321474049
GE DUO	geduo2010@yahoo.com	978-0321474049
HUANG XUANTI	huangxuanti1992@msn.com	978-0321474049
JENNY HUNT	jennyhunt1991@gmail.com	978-0321474049
LISA SMITH	lisasmith2011@msn.com	978-0321474049
LIU YIHUI	liuyihui1990@hotmail.com	978-0321474049
LIU ZHENCAI	liuzhencai1990@msn.com	978-0321474049
NG ANH QUANG	nganhquang1991@yahoo.com	978-0321474049
ZHOU XIALIN	zhouxialin1990@yahoo.com	978-0321474049
ZHU CHANG	zhuchang2010@gmail.com	978-0321474049

14 rows in set (0.001 sec)

Q11. Find the names of students who owned or borrowed a copy of the book '978-0321474049' using set operator UNION.

```
MariaDB [huanyinlab3db]> select student.name from student inner join loan on student.email = loan.owner
-> where loan.book='978-0321474049'
-> union select student.name from student inner join loan on student.email = loan.borrower
-> where loan.book='978-0321474049';
```

```
+-----+
| name |
+-----+
| DAVID HALL |
| LIU ZHENCAI |
| NG YONG MING |
| WANG NA |
| CHNG HUI LING |
| CHOY YI TING |
| DAVID CHAPMAN |
| DENNIS BECKHAM |
| DENNIS PALMER |
| GE DUO |
| HUANG XUANTI |
| JENNY HUNT |
| LISA SMITH |
| LIU YIHUI |
| NG ANH QUANG |
| ZHOU XIALIN |
| ZHU CHANG |
+-----+
17 rows in set (0.001 sec)
```

Q12. Find the names of students who owned or borrowed a copy of the book '978-0321474049' using logical operator OR.

```
MariaDB [huanyinlab3db]> select distinct student.name from student inner join loan on student.email = loan.borrower
-> or student.email = loan.owner
-> where loan.book='978-0321474049';
```

```
+-----+
| name |
+-----+
| WANG NA |
| ZHOU XIALIN |
| CHOY YI TING |
| NG YONG MING |
| ZHU CHANG |
| GE DUO |
| JENNY HUNT |
| DENNIS BECKHAM |
| LIU ZHENCAI |
| DAVID HALL |
| DENNIS PALMER |
| NG ANH QUANG |
| HUANG XUANTI |
| CHNG HUI LING |
| LIU YIHUI |
| LISA SMITH |
| DAVID CHAPMAN |
+-----+
17 rows in set (0.001 sec)
```

Q13. Delete all the data in the table loan.

```
MariaDB [huanyinlab3db]> delete from loan;
Query OK, 55 rows affected (0.003 sec)
```

```
MariaDB [huanyinlab3db]> select * from loan;
Empty set (0.000 sec)
```

Q14. Try the second last query again, and comment on the results with your name and student identifier.

```
MariaDB [huanyinlab3db]> select distinct student.name from student inner join loan on student.email = loan.borrower
-> or student.email = loan.owner
-> where loan.book='978-0321474049'; --Koh Huan Yin 2001376
Empty set (0.001 sec)
```

Q15. (Optional) Display some statistical information like execution time to understand the queries at the system level.

```
MariaDB [huanyinlab3db]> explain select * from book where ISBN13='978-0321474049'\G
***** 1. row *****
      id: 1
  select_type: SIMPLE
        table: book
         type: const
possible_keys: PRIMARY
         key: PRIMARY
        key_len: 14
         ref: const
         rows: 1
       Extra:
1 row in set (0.000 sec)
```