SQL Practice 3

1. Create database university;
2. Show databases;
3. Use university;
4. Create table…
5. Show tables;
6. Describe course;
7. Insert into …

(1) 執行

Select \*

From ***course* natural left outer join *prereq***;

結果中prereq\_id = null 的資料代表什麼?

(2) 執行

Select \*

From ***course* natural join *prereq***;

結果和(1) 結果的差異為何?

(3) 執行

Select \*

From*course* **natural right outer join *prereq;***

其結果和(2)結果相同嗎? 這隱含什麼意思?

(4) 執行

**select**\*

**from** *course* **inner join** *prereq* **on***course.course\_id = prereq.course\_id*;

結果和(2) 結果的差異為何? (請觀察欄位)

(5) 執行

**select** \*

**from** *section* **left outer join** *teaches* **using** (*course\_id*);

**select** \*

**from** *section* **natural left outer join** *teaches*;

這兩個查詢在執行join 時, 檢查的條件有何差異? 顯示的欄位有何差異?

1. Write a SQL query to

Display a list of all instructors, showing their ID, name, and the number of sections that they have taught.

(Make sure to show the number of sections as 0 for instructors who have not taught any section. Your query should use an outer join.)

1. Create View

(1)

**create view** *dept\_total\_salary*(*dept\_name*, *total\_salary*) **as  
 select** *dept\_name*, **sum**(*salary*)  
 **from** *instructor* **group by** *dept\_name*;

執行select \* from *dept\_total\_salary*;

**insert into** instructor **values** ('10301', 'KOH', 'Comp. Sci.', '30000');

再執行 select \* from *dept\_total\_salary*; 結果有何改變?

(2) 觀察新增前後*instructor*表中的改變

**create view** *faculty* **as   
 select** *ID*, *name*, *dept\_name* **from** *instructor*

執行select \* from *instructor*;

執行select \* from *faculty*;

**insert into** *faculty* **values** ('630765', 'Green ', 'Music ')

執行select \* from *faculty*;

執行select \* from *instructor*;

*Instructor* 新增的資料有哪個欄位是空值? 為什麼?

(3) 觀察新增前後*instructor*表中的改變

**create view** *history\_instructors* **as  
 select** \*  
 **from** *instructor* **where** *dept\_name*= 'History';

執行select \* from *instructor*;

執行select \* from *history\_instructors*;

insert into *history\_instructors values* ('25566', 'Brown', 'Biology', 100000)

執行select \* from *instructor*;

執行select \* from *history\_instructors*;

思考為什麼新增的資料從 *history\_faculty* 找不到?

1. Transction

CREATE TABLE customers(a int, b char(20), index(a)) ENGINE=InnoDB;

# BEGIN 的方法

BEGIN;

INSERT INTO customers VALUES(10, 'abc');

COMMIT; # 此 BEGIN Transaction 已在此結束

SELECT \* FROM customers;

INSERT INTO customers VALUES(11, 'aaa');

ROLLBACK; # 此命令是無作用的, 已經不在 BEGIN 的範圍了, 資料會自動 COMMIT 進去.

SELECT \* FROM customers;

# SET AUTOCOMMIT 的方法

# (注意: 其它 Connection 並不會因為這 Connection 設定而不自動COMMIT)

SET AUTOCOMMIT=0;

INSERT INTO customers VALUES(15, 'def');

ROLLBACK;

INSERT INTO customers VALUES(16, 'ggg');

COMMIT;

SELECT \* FROM customers;

# 回復每筆交易都會自動 COMMIT 的狀態

SET AUTOCOMMIT=1;

請觀察兩者查詢customers 結果的差異。

1. Foreign key 設定 (需啟動Innodb)

CREATE TABLE parent (

id INT NOT NULL,

PRIMARY KEY (id)

) ENGINE=INNODB;

CREATE TABLE child(

id INT,

parent\_id INT,

PRIMARY KEY (id),

FOREIGN KEY (parent\_id)

REFERENCES parent(id)

ON update CASCADE

ON delete CASCADE

) ENGINE=INNODB;

insert into parent values(100);

insert into parent values(200);

insert into child values(001,100);

insert into child values(002,100);

insert into child values(003,200);

1. 請觀察insert into child values(004, 500); 後的錯誤訊息

執行 delete from parent where id = 100; 後兩個表中的內容有何改變?

1. 執行 update parent set id = 300 where id=200; 後兩個表中的內容有何改變?
2. 根據Lab 中ddl.sql中的宣告, 若刪除department 中一筆資料, 會影響到哪些表中的資料進行那些變動?