

بخش دوم : (MySQL)

۱. ارتباط سلسله مراتبی کارمندان (حالت هرمی رئیس-مرئوس) را در قالب یک رابطه 1:N در نظر بگیرید و به سوال های زیر پاسخ دهید .

● نمودار ER این مسئله را رسم کنید .

MySQL Workbench interface showing a query execution error. The query is:

```
SELECT * FROM ce_db.user;
```

The result grid shows 10 rows of user data:

User_ID	User_First_Name	User_Last_Name	User_User_ID
1	Mohammad	Moradi	
2	Ali	Majidi	1
3	Reza	rezaei	1
4	Ahmad	Ghasemi	1
5	Milad	Ahmadi	2
6	Adel	Safari	3
7	Mahdi	Alibari	4
8	Somaie	Nadri	2
9	Sosani	Amini	3
10	Sara	Safari	4

The error message is:

```
1452: Cannot add or update a child row: a foreign key constraint fails ('ce`.`user`, CONSTRAINT fk_User_User_ID FOREIGN KEY (User_User_ID) REFERENCES ce_db.user (User_ID))
```

● یک پرس وجو بنویسید که لیست کارمندان (به جز مدیرعامل) را به همراه نام مدیر ایشان چاپ کند .

MySQL Workbench interface showing a query execution error. The query is:

```
SELECT * FROM ce_db.user;
select db.User_First_Name as Manager_First_Name, db.User_Last_Name as Manager_Last_Name,
db1.User_First_Name, db1.User_Last_Name
FROM ce_db.user as db, ce_db.user as db1
WHERE db.User_ID = db1.User_User_ID;
```

The result grid shows 10 rows of user data:

MANAGER_First_Name	MANAGER_Last_Name	User_First_Name	User_Last_Name
Mohammad	Moradi	Ali	Majidi
Mohammad	Moradi	Reza	rezaei
Mohammad	Moradi	Ahmad	Ghasemi
Ali	Majidi	Milad	Ahmadi
Reza	rezaei	Adel	Safari
Ahmad	Ghasemi	Mahdi	Alibari
Ali	Majidi	Somaie	Nadri
Reza	rezaei	Sosani	Amini
Ahmad	Ghasemi	Sara	Safari

The error message is:

```
Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL version for the right syntax to use near 'select db.User_First_Name as Manager_First_Name, db.User_Last_Name as Manager_Last_Name, db1.User_First_Name, db1.User_Last_Name FROM ce_db.user as db, ce_db.user as db1 WHERE db.User_ID = db1.User_User_ID;' at line 5
```

● یک پرس وجو بنویسید که لیست همه کارمندان (از جمله مدیرعامل) را به همراه نام مدیر ایشان چاپ کند. برای مدیر عامل، جلوی نام باید Null چاپ شود.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```

1 SELECT * FROM ce_db.user;
2
3 select db.User_First_Name as manager_first_name, db.User_Last_Name as manager_last_name ,
4       db2.User_First_Name , db2.User_Last_Name
5 from ce_db.user as db
6 right outer join ce_db.user as db2 on db2.User_User_ID = db.User_ID;

```

The Results Grid shows the following data:

manager_first_name	manager_last_name	User_First_Name	User_Last_Name
Null	Null	Mohammad	Moradi
Mohammad	Moradi	Ali	Majidi
Mohammad	Moradi	Reza	rezai
Mohammad	Moradi	Ahmad	Ghasemi
Ali	Majidi	Milad	Ahmadi
Reza	rezai	Adel	Safari
Ahmad	Ghasemi	Mahdi	Albani
Ali	Majidi	Somaie	Nadri
Reza	rezai	Soson	Amini
Ahmad	Ghasemi	Sara	Safari

The Output tab shows the execution log with the following messages:

```

176 22:35:32 select db.User_First_Name as MANAGER_First_Name , db.User_Last_Name as MANAGER_Last_Nam... 100 row(s) returned
177 22:35:56 select db.User_First_Name as MANAGER_First_Name , db.User_Last_Name as MANAGER_Last_Nam... 9 row(s) returned
178 22:37:14 select db.User_First_Name as MANAGER_First_Name , db.User_Last_Name as MANAGER_Last_Nam... 9 row(s) returned
179 01:13:07 SELECT * FROM ce_db.user LIMIT 0, 5000 10 row(s) returned
180 01:15:02 SELECT * FROM ce_db.user LIMIT 0, 5000 10 row(s) returned
181 01:15:02 select db.User_First_Name as manager_first_name, db.User_Last_Name as manager_last_name , ... 10 row(s) returned

```

● یک پرس وجو بنویسید که نام کارمندانی که زیر دست ندارند را چاپ کند.

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Information

Table: user

Columns:

User_ID int PK

User_First_Name varchar(45)

User_Last_Name varchar(45)

User_User_ID int

1 SELECT * FROM ce_db.user;

2

3 select db.User_First_Name ,db.User_Last_Name

4 from ce_db.user as db

5 where db.User_ID not in (select db2.User_User_ID from ce_db.user as db2 where db2.User_User_ID = db.User_ID);

6

Result Grid

Filter Rows

Export

Wrap Cell Contents

User_First_Name	User_Last_Name
Milad	Ahmadi
Adel	Seleni
Mahdi	Albani
Sonae	Nadri
Sosan	Amini
Sara	Safari

user 25 user 26 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
180	01:15:02	SELECT * FROM ce_db.user LIMIT 0.5000	10 row(s) returned	0.000 sec / 0.000 sec
181	01:15:02	select db.User_First_Name as manager_first_name, db.User_Last_Name as manager_last_name, ...	10 row(s) returned	0.000 sec / 0.000 sec
182	01:17:24	SELECT * FROM ce_db.user LIMIT 0.5000	10 row(s) returned	0.000 sec / 0.000 sec
183	01:17:24	select db.User_First_Name ,db.User_Last_Name from ce_db.user as db where db.User_ID not in (...)	6 row(s) returned	0.000 sec / 0.000 sec
184	01:17:32	SELECT * FROM ce_db.user LIMIT 0.5000	10 row(s) returned	0.000 sec / 0.000 sec
185	01:17:32	select db.User_First_Name ,db.User_Last_Name from ce_db.user as db where db.User_ID not in (...)	6 row(s) returned	0.000 sec / 0.000 sec

Query Completed

• یک پرس وجو بنویسید که برای هر کارمند، تعداد کارمندان زیر دست وی را چاپ کند

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Administration Schemas

Information

Table: user

Columns:

User_ID int PK

User_First_Name varchar(45)

User_Last_Name varchar(45)

User_User_ID int

1 SELECT * FROM ce_db.user;

2

3 select db.*, count(db.User_User_ID)

4 from ce_db.user as db

5 join ce_db.user as db2

6 on db.User_ID = db2.User_User_ID

7 group by db.User_ID;

Result Grid

Filter Rows

Export

Wrap Cell Contents

User_ID	User_First_Name	User_Last_Name	User_User_ID	count(db.User_User_ID)
1	Mohammad	Moradi	3	3
2	Ali	Majidi	1	2
3	Reza	rezaei	1	2
4	Ahmad	Ghasemi	1	2

user 27 Result 28 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
182	01:17:24	SELECT * FROM ce_db.user LIMIT 0.5000	10 row(s) returned	0.000 sec / 0.000 sec
183	01:17:24	select db.User_First_Name ,db.User_Last_Name from ce_db.user as db where db.User_ID not in (...)	6 row(s) returned	0.000 sec / 0.000 sec
184	01:17:32	SELECT * FROM ce_db.user LIMIT 0.5000	10 row(s) returned	0.000 sec / 0.000 sec
185	01:17:32	select db.User_First_Name ,db.User_Last_Name from ce_db.user as db where db.User_ID not in (...)	6 row(s) returned	0.000 sec / 0.000 sec
186	01:19:02	SELECT * FROM ce_db.user LIMIT 0.5000	10 row(s) returned	0.000 sec / 0.000 sec
187	01:19:02	select db.*, count(db.User_User_ID) from ce_db.user as db join ce_db.user as db2 on db.User_ID = db2...	4 row(s) returned	0.063 sec / 0.000 sec

Query Completed