

today's topics:

- a bit more on relational databases
- finishing up sql labs 1 & 2
- and meeting with project group to discuss database design

last time, we created this example with 3 tables:

• **tblUser**

userID	lastname	firstname
1	sklar	elizabeth
2	mouse	mickey
3	mouse	minnie
4	potter	harry

• **tblBday**

bdayID	month	day
1	12	11
2	10	9
3	8	7

• **rltUserBday**

userID	bdayID
1	1
2	2
3	3
4	1

you can also store the same data with 2 tables:

• **tblUser**

userID	lastname	firstname
1	sklar	elizabeth
2	mouse	mickey
3	mouse	minnie
4	potter	harry

• **tblBday**

userID	month	day
1	12	11
2	10	9
3	8	7
4	12	11

- but notice that this is less efficient, because users 1 and 4 have the same birthday and that information is stored twice in the bday table

similarly, you can also store the same data with 1 table:

• **tblUser**

userID	lastname	firstname	month	day
1	sklar	elizabeth	12	11
2	mouse	mickey	10	9
3	mouse	minnie	8	7
4	potter	harry	12	11

- but again, this is less efficient, because users 1 and 4 have the same birthday and that information is stored twice in the bday table

preserve table integrity

- the other advantage of the first way (using 3 tables) is that you are preserving the table integrity by storing data in the tbl_ tables and the relation in a separate table
- if you do this (using either 3 or 2 tables), you have to be careful when removing entries from the tables
- think of the user table as the primary table and the other tables as auxiliary to that table
- if you remove an entry from the user table, you must also remove the corresponding entry for the birthday table (in the 2-table model) or the relation (in the 3-table model)

example

- 3-table example:

```
mysql> DELETE FROM rltUserBday WHERE userID=4;
```

```
mysql> DELETE FROM tblUser  
WHERE lastname='potter' AND firstname='harry';
```

- or if you don't know what the userID value is:

```
mysql> DELETE FROM rltUserBday  
WHERE userID=(  
  SELECT userID FROM tblUser  
  WHERE lastname='potter'  
  AND firstname='harry');
```

```
mysql> DELETE FROM tblUser  
WHERE lastname='potter' AND firstname='harry';
```

- 2-table example:

```
mysql> DELETE FROM tblBday WHERE userID=4;
```

```
mysql> DELETE FROM tblUser  
WHERE lastname='potter' AND firstname='harry';
```

- or if you don't know what the userID value is:

```
mysql> DELETE FROM tblBday  
WHERE userID=(  
  SELECT userID FROM tblUser  
  WHERE lastname='potter'  
  AND firstname='harry');
```

```
mysql> DELETE FROM tblUser  
WHERE lastname='potter' AND firstname='harry';
```

- 1-table example:

```
mysql> DELETE FROM tblUser  
WHERE lastname='potter' AND firstname='harry';
```