Multiple foreign keys to the same table in a database?

Asked 5 years, 8 months ago Active 2 years, 9 months ago Viewed 5k times

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I have a SQL Server database and it contains a table to record a employee salary.

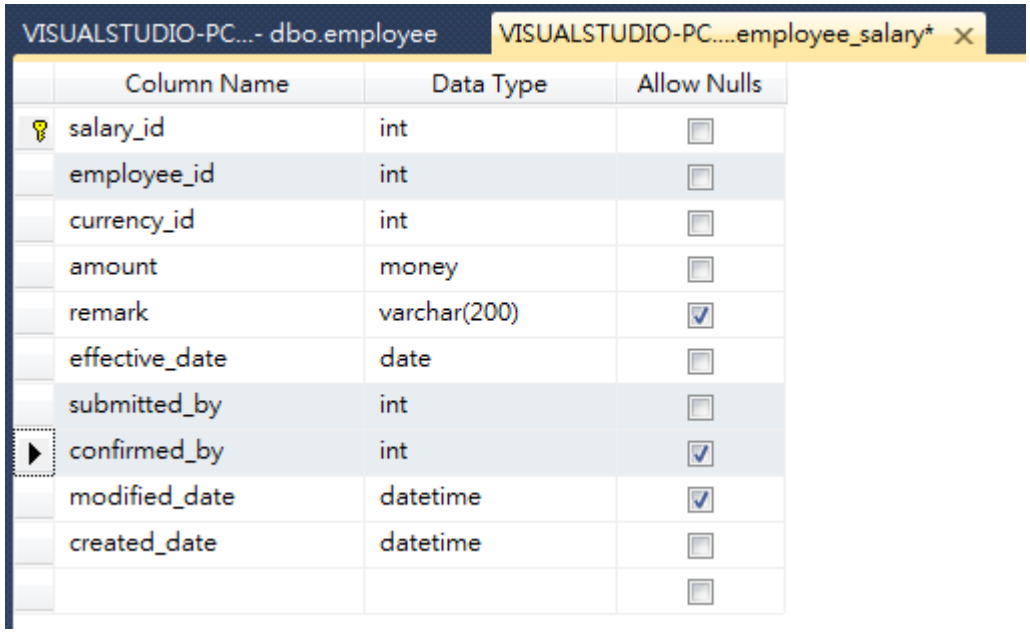
It has 3 columns declared as foreign keys, and reference to the `employee` table's column, `employee_id`:

- employee_id
- submitted_by
- confirmed_by

But is it best practice to make it all as FK, or do I only need `employee_id`?

Because in my application, `submitted_by` and `confirmed_by` will be selected by a drop down list and assume it exist on employee table.

Thanks you for advice.



sql-server database-design

edited Oct 24 '14 at 5:58

StuartLC
91.8k ● 16 ● 166 ● 231

asked Oct 23 '14 at 9:10

Cheung
14k ● 17 ● 59 ● 88

2 Answers

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Yes, since all users of your system are also `Employees` modelled by your system, if you wish to have Referential Integrity (RI) enforced in the database, all three columns should have foreign keys back to the referenced `employee` table. Note that since `confirmed by` sounds like part of a workflow process, where the user confirming may not be available at the time the record is inserted, you can make the field `confirmed_by` in table `EmployeeSalary` *nullable* (`confirmed_by INT NULL`), in which case RI will only be enforced at the later time when the field is actually populated.

You should name each of the foreign keys appropriately by expressing the role in the foreign key, e.g.

- `FK_EmployeeSalary_SalariedEmployee`
- `FK_EmployeeSalary_EmployeeSubmittedBy`
- `FK_EmployeeSalary_EmployeeConfirmedBy`

Although the front end may restrict choices via the drop down, referential integrity is still beneficial:

- Protect against bugs, e.g. where the submitted by employee is omitted (in the case of a non-nullable FK) or the employee provided doesn't exist in the `employees` table.
- Prevent accidental deletion of an employee to which foreign key data is linked.

There is a (very) minor performance penalty on RI whereby the DB will need to check the existence of the PK in the `employee` table - in most instances this will be negligible.

edited Sep 6 '17 at 16:02

answered Oct 23 '14 at 9:19

StuartLC
91.8k ● 16 ● 166 ● 231

Thanks you very much. I agree "Protect against bugs". It prevent some user using firebug like debugger to change and POST a wrong value. – Cheung Oct 23 '14 at 9:25

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Any column that references a key in another table should be declared as a foreign key. This way, if you mistakenly try to put a nonexistent value there, the database will report an error.

answered Oct 23 '14 at 9:14

Barmar
529k • 41 • 327 • 427

Yes, it is the principle of FK, just wonder it is redundant or unnecessary. thanks you. – Cheung Oct 23 '14 at 9:19

1 No, it's not redundant. Each foreign key serves to protect that column. The foreign key on `employee_id` doesn't ensure that `submitted_by` is valid. – Barmar Oct 23 '14 at 9:20