

Standard solution:

sales-staff (stuff-id, name, position)

transaction (date, time, staff-id(not null))

book (ISBN, title, author_id(not null), price)

sale (date, time, stuff-id, ISBN, copies)

category (category-id, category name)

belong-to (ISBN, category-id)

include (super-category-id, sub-category-id)

author(author-id, name)

author_Email(author-id, Email)

writes(author-id, ISBN)

Grading criteria:

1. There are totally 10 relations above. If you miss some of them, you lose **10 marks** for each of losing relations.
2. For each relation, if you give extra attributes (not a primary key/foreign key) or miss some attributes (not a primary key/foreign key), you lose **1 marks** for each of them.
3. For each relation, if you give extra attributes (a primary key/foreign key) or miss some attributes (a primary key/foreign key), you lose **2 marks** for each of them.
4. For each relation, if you mistakenly underline an attribute that is not a primary key or foreign key, or if you do not underline an attribute that is a primary key or foreign key, then you lose **2 marks** for each of such mistakes.
5. For not-null constraints, there are totally 2 constraints. The first one is the “author_id” in the relation “book”. The second not-null constraint is the “staff_id” in the relation “transaction”. No matter you write “author_id” in the relation “book” or not, no score will be deducted here. For “staff_id” in “transaction”, if you do not specify the not null constraint, no score will be deducted.

(Note: The grading strategy is modified just because that some of you get the score with a wrong answer and we want to make it fair for all of you, it does not mean that the standard solution provided above is not correct)