

Relational Table

Block 2 introduces and uses the term **relational table**. This term is not an “official” one in any sense—it is not used in relational database theory, nor is it used in SQL. I find that it is used in more than one sense in Block 2, which might cause a bit of confusion. I don’t think you will ever need to use this term in TMA submissions or the exam, so you might wish not to bother to read the comments that follow and just avoid the term altogether. It is not used at all in Blocks 3 and 4, but it reappears twice in Block 5.

The term first appears on page 9, where it seems to refer to the printed table appearing on the previous page:

We should emphasise that tables, such as that in Figure 2.1, are only a convenient depiction of a relation. In particular, the orders of the rows and columns as inevitably shown in a table have no significance to a relation. In fact, a row in a relational table represents a in a relation, where a tuple is a set of values, one for each of the relation’s attributes.

On page 10 the usage is confirmed:

As you have seen, a relation consists of attributes and may be depicted as a form of table. We shall call a table representing a relation, a **relational table**.

and Figure 2.2 on this page, a printed table, is described as table that cannot be regarded as a relational table.

The remaining uses of the term in Section 2 are consistent with it referring to a printed table—a *depiction*. However, when we get to Section 3, on page 38, we find

For example, some operators are implemented in SQL so that they may take relational tables as their operands but yield a table which doesn’t represent a relation (because, for example, it contains repeated rows or columns).

Obviously SQL doesn’t operate on depictions. In fact it operates on what it calls tables. Section 2 tells us that not all printed tables are relational tables, Figure 2.2 being a counterexample. Section 3 here is trying to tell us that not every SQL table can be regarded as representing a relation, but it appears to be using the term “relational table”, without explicitly redefining it, to refer to an SQL table that *can* be thus regarded.

Between pages 38 and 71 there are a few more uses of the term as referring to a printed table, but on page 71 we find

Given a relational table, we need to find as many functional dependencies as possible in order to elucidate the dependencies in the data.

Later on the same page we return to the comfort zone of printed tables when the term is used in connection with Figure 5.2, and we remain there across several appearances until we get to this, on page 80, at the start of Section 5.5:

In this subsection, we introduce a normal form which eliminates almost all redundancies in our relational tables: Boyce–Codd normal form (BCNF).

They mean relations here, not pictures of relations. A similar remark applies to the two remaining uses of “relational table”, in Solution 5.1 and Solution 5.13.

In Block 5, on page 46, we find

Describe the alternative ways in which XML may be stored using relational tables.

and the only other appearance in this block is in Solution 3.4 on page 48. Here it appears to mean SQL tables that can be regarded as representing relations (overlooking the fact that an SQL table with more than one column violates the relational property of there being no ordering of the attributes!)