General OLAP theory

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When using OLAP you have to consider OLAP cubes and dimensions instead of relations. OLAP models can have *d* dimensions, but to illustrate 3 dimensions are often used.

When you **drill down** you go one step down in the hierarchy. As an example, you have the hierarchy:
Country > City > Street

This means, that if you drill down on country, you abstract from the country dimension to the city dimension.

Oppositely if you **roll up** you go one step up in the hierarchy. Using the above example, if you roll up on the street dimension, you abstract away from the street dimension to the city dimension.

But what to do if your dimension does not appear in a hierarchy?

- Upon roll up, you can get a more general view of the OLAP model by removing that dimension.
- Upon drill down, you can't get a more specific view of the OLAP model, so you cannot do anything with that dimension.

So what is the result of roll ups and drill downs?
As mentioned, usually we talk about 3D OLAP models (cubes). Therefore, removing a dimension, results are in a 2D view (which is easy for us to draw). This means that the result is **not** a relation, but a 2D OLAP model.

What about pivoting?
When pivoting attributes, you use those attributes as dimensions in the resulting OLAP model.