**Column-Oriented Databases**

Column-oriented databases save their data grouped by columns. Subsequent column values are stored contiguously on disk. This differs from the usual row-oriented approach of traditional databases, which store entire rows contiguously.

The reason to store values on a per-column basis instead is based on the assumption that, for specific queries, not all of the values are needed. This is often the case in analytical databases in particular, and therefore they are good candidates for this different storage schema.

Reduced I/O is one of the primary reasons for this new layout, but it offers additional advantages playing into the same category: since the values of one column are often very similar in nature or even vary only slightly between logical rows, they are often much better suited for compression than the heterogeneous values of a row-oriented record structure; most compression algorithms only look at a finite window. Specialized algorithms—for example, delta and/or prefix compression—selected based