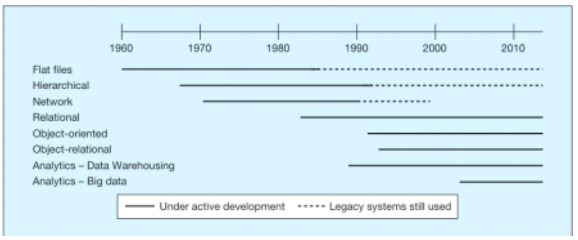
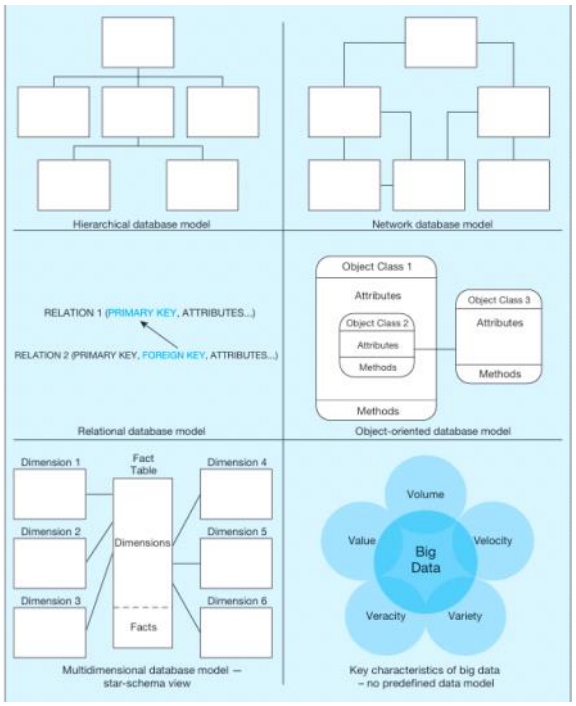
EVOLUTION OF DATABASE SYSTEMS



Evolution of database tech



Database architectures
Shows a visual depiction of the organizing principle underlying each of the major database technologies.

- For example, in the hierarchical model, files are organized in a top-down structure that resembles a tree or genealogy chart, whereas in the network model, each file can be associated with an arbitrary number of other files.
- The relational model (the primary focus of this book) organizes data in the form of tables and relationships among them.
- The object-oriented model is based on object classes and relationships among them.
- An object class encapsulates attributes and methods. Object-relational databases are a hybrid between object-oriented and relational databases.
- Multidimensional databases, which form the basis for data warehouses, allow us to view data in the form of cubes or a star schema.
- The final element of the diagram illustrates the main characteristics of the big data approach to data management, intentionally leaving a specific modeling approach (there is no single data model for big data).

Current Database solutions:

- Relational databases are still widely used and popular
- With the vast amount of structured and unstructured data a company must manage new database solutions have emerged…
    - Nonrelational database
        - NoSql (not only SQL): used to address structured and unstructured data (like pictures and images) stored in potentially diff locations
            - Examples are MongoDB and Apache Cassandra
            - This search for nonrelational database technologies is fueled by the needs of social networking applications, such as blogs, wikis, and social networking sites (Facebook, Twitter, LinkedIn, and so forth)
- One popular technology available in the cloud is databases. Databases, relational and nonrelational, can now be created, deployed, and managed through the use of technologies owned and managed by a service provider. You will examine issues surrounding cloud databases