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Data Modeling: From Relational Databases to Big Data - part 1

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Database management systems are a fundamental tool to store and analyze data in countless domains, empowering business intelligence as well as descriptive, predictive, and prescriptive analytics tasks. Choosing the right database technology is not trivial since, due to the intrinsic heterogeneous nature of information, different approaches must be followed to handle structured, semi-structured, and unstructured data, and the so called Big Data. This gives rise to complex information systems, in which data regarding a specific object may be fragmented and possibly replicated into several repositories, both relational as well as NoSQL in their nature. Data warehousing allows to bring order into such an information jungle, by means of employing a single, enterprise-wide storage, which should be continuously fed by data streams, engineered to perform ETL (Extract, Transform, Load) tasks. The goal of the lecture is that of covering, from a general and intuitive point of view, all the main aspects pertaining to the previously described issues.

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