

# INTEGRATED DATA MANAGEMENT FRAMEWORK

	Operational	Informational	
	Transactional	Analytical– Data Warehousing	Analytical– Big Data
Technology	Relational	Relational	Non-relational
Modeling	Conceptual data modeling with (E)ER (Chapters 2 and 3)		
Design	Logical data modeling with the relational model; Normalization (Chapter 4)		
Infrastructure	Physical design of relational databases; Security; Cloud computing (Chapter 8)	Data warehousing and data integration (Chapter 9)	Big data technologies, including Hadoop & NoSQL (Chapter 10)
Access	SQL (Chapters 5 and 6) Applications with SQL (Chapter 7)		
Data analysis	Analytics and its implications (Chapter 11)		
Governance and data management	Lifecycle (Chapter 1) Governance, data quality, and master data management (Chapter 12)		

## Notes:

This book taps more into transactional databases and its approach using relational and sql technology.

- One example of transactional would be like walmart who sells stuff

This book does not focus too much on analytical databases like warehouses and big data; only devoting a couple of chapters at the end to this material

There are two main frameworks for a database: Operational and Informational.

- Informational has two categories Analytical - data warehousing and a new one called big data
  - o Big data:
    - They are able to handle large volumes of data with a variety of data types coming in at a high velocity.
    - A major difference between big data systems compared to both data warehousing and operational, transaction-focused systems is that structures of the latter (not big data) are typically expected to be carefully designed before data are stored in them (“schema on write”), whereas many of the big data analytics technologies are intended to be used in the “schema on read” mode.
      - In the bid data approach, the structure of the data and the relationships between the data elements will be determined later, either right before or at the time of the use of the data.