An Introduction to the Database Management Systems
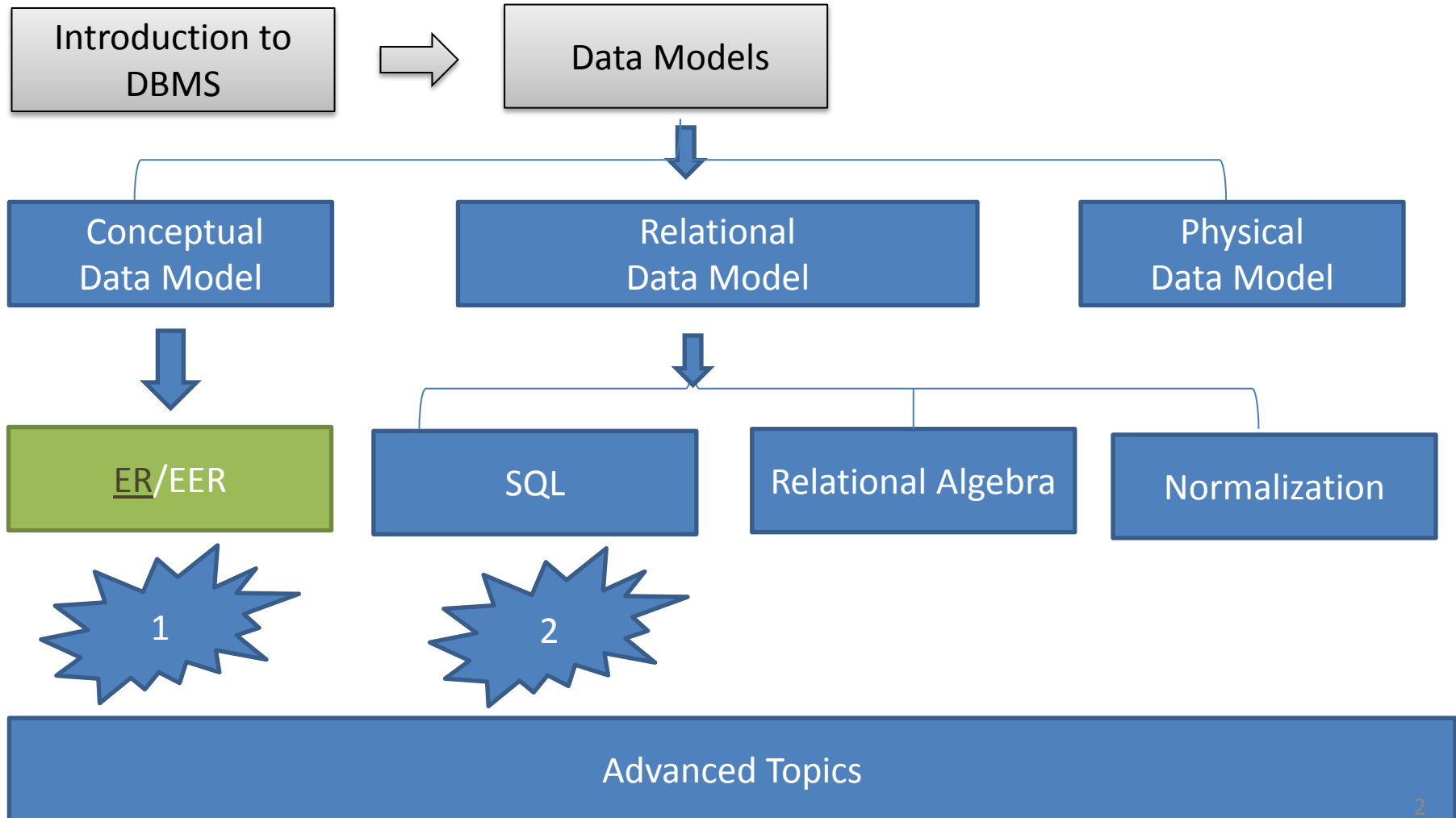
By
Hossein Rahmani

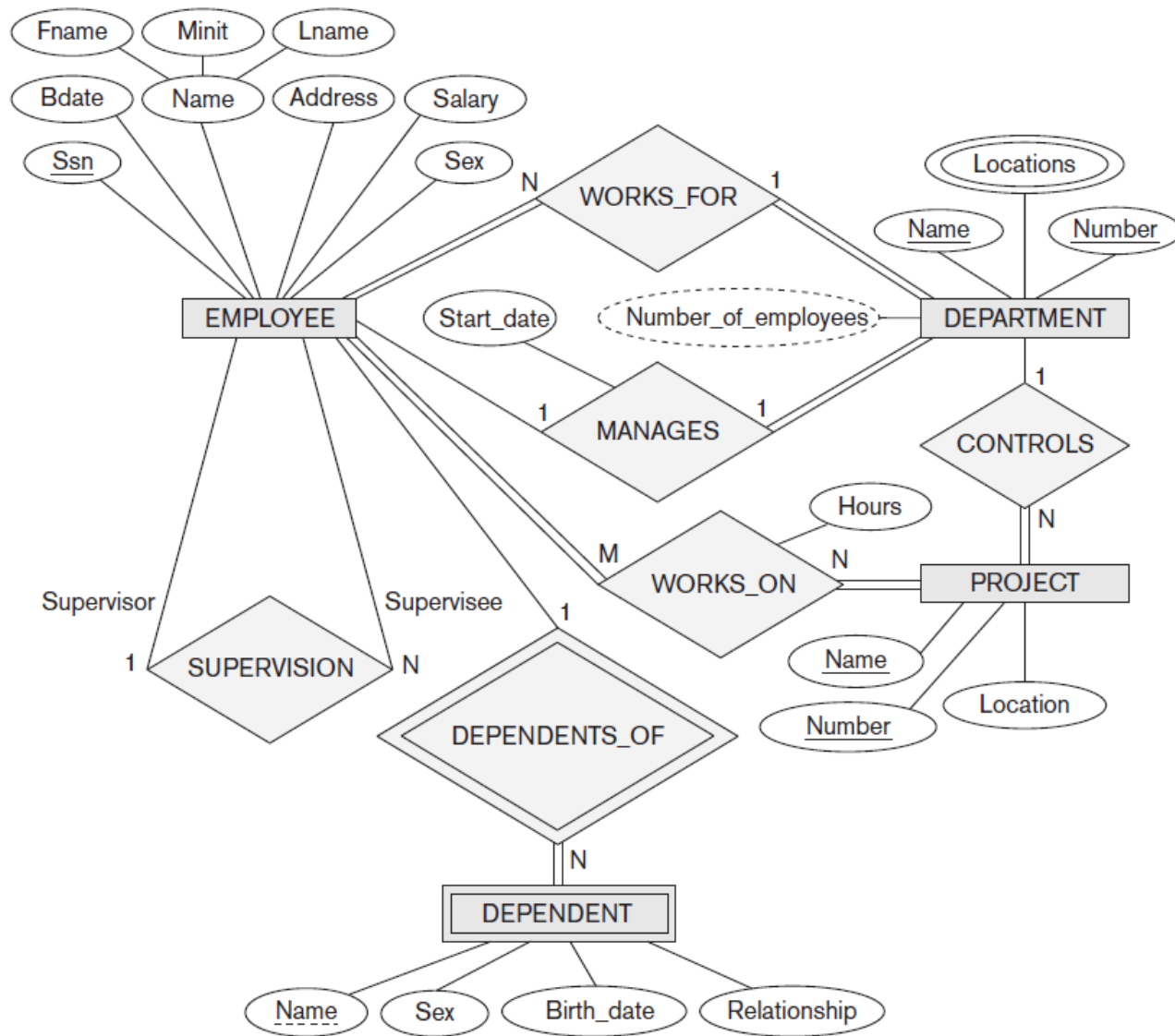Slides originally by Book(s) Resources

Road Map

(Might change!)

Figure 7.2
An ER schema diagram for the COMPANY database. The diagrammatic notation
is introduced gradually throughout this chapter and is summarized in Figure 7.14.

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Quiz 1: University

- A university database contains information about professors (identied by social security number, or SSN) and courses (identied by courseid). Professors teach courses; each of the following situations concerns the Teaches relationship set. For each situation, draw an ER diagram that describes it (assuming that no further constraints hold).

- Every professor must teach some course.

- Every professor teaches exactly one course (no more, no less).

- Every professor teaches exactly one course (no more, no less), and every course must be taught by some professor.

- Now suppose that certain courses can be taught by a team of professors jointly, but it is possible that no one professor in a team can teach the course.

Quiz 2: Music Company

- Notown Records has decided to store information about musicians who perform on its albums in a database. The company has wisely chosen to hire you as a database designer.

- Each musician that records at Notown has an SSN, a name, an address, and a phone number. Poorly paid musicians often share the same address, and no address has more than one phone.

- Each instrument used in songs recorded at Notown has a unique identification number, a name (e.g., guitar, synthesizer, flute) and a musical key (e.g., C, B-flat, E-flat).

- Each album recorded on the Notown label has a unique identification number, a title, a copyright date, a format (e.g., CD or MC), and an album identifier.

- Each song recorded at Notown has a title and an author.

- Each musician may play several instruments, and a given instrument may be played by several musicians.

- Each album has a number of songs on it, but no song may appear on more than one album.

- Each song is performed by one or more musicians, and a musician may perform a number of songs.

- Each album has exactly one musician who acts as its producer. A musician may produce several albums, of course.

Quiz 3: Art Galleries

- Galleries keep information about artists, their names (which are unique), birthplaces, age, and style of art.

- For each piece of artwork, the artist, the year it was made, its unique title, its type of art (e.g., painting, lithograph, sculpture, photograph), and its price must be stored.

- Pieces of artwork are also classified into groups of various kinds, for example, portraits, still lifes, works by Picasso, or works of the 19th century; a given piece may belong to more than one group.

- Each group is identified by a name (like those just given) that describes the group.

- Finally, galleries keep information about customers.

- For each customer, galleries keep that person's unique name, address, total amount of dollars spent in the gallery (very important!), and the artists and groups of art that the customer tends to like.

- Draw the ER diagram for the database.