IF2140 – Pemodelan Basis Data / IF2240 – Basis Data

Database Design using E-R Model (p.2)

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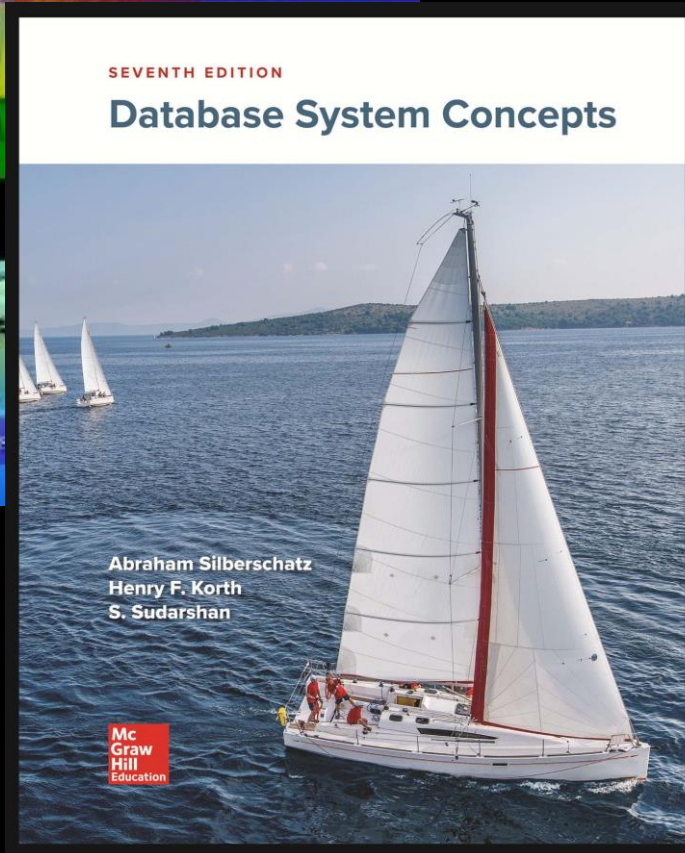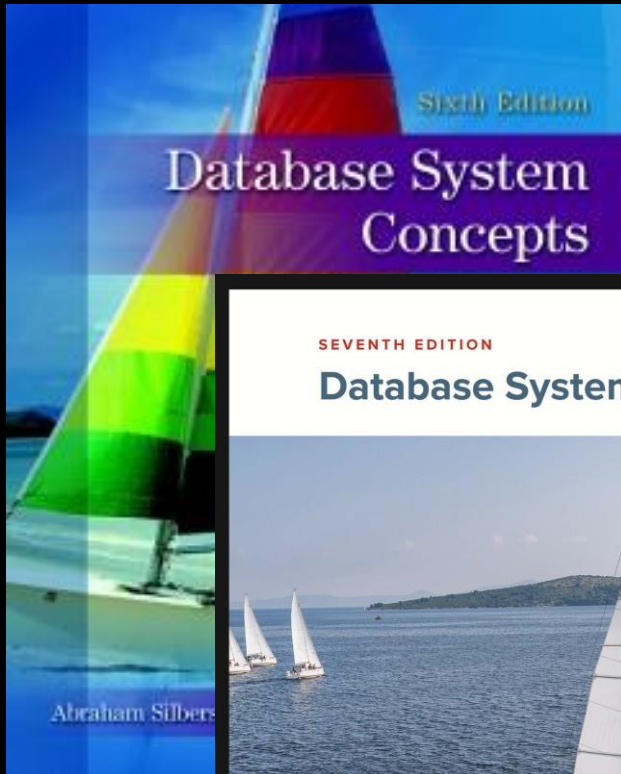
References

Abraham Silberschatz, Henry F. Korth, S. Sudarshan :
"**Database System Concepts**", 6th Edition
- Chapter 7: Database Design and the E-R Model

Abraham Silberschatz, Henry F. Korth, S. Sudarshan :
"**Database System Concepts**", 7th Edition
- Chapter 6: Database Design using E-R Model

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Weak Entity Sets

Consider a *section* entity, which is uniquely identified by a *course_id, semester, year,* and *sec_id.*. Clearly, section entities are related to course entities. Suppose we create a relationship set *sec_course* between entity sets *section* and *course.*. Note that the information in *sec_course* is redundant, since *section* already has an attribute *course_id*, which identifies the course with which the section is related. One option to deal with this redundancy is to get rid of the relationship s*ec_course*; however, by doing so the relationship between *section* and *course* becomes implicit in an attribute, which is not desirable. An alternative way to deal with this redundancy is to not store the attribute course_id in the section entity and to only store the remaining attributes section_id, year, and semester. However, the entity set section then does not have enough attributes to identify a particular section entity uniquely

To deal with this problem, we treat the relationship sec_course as a special relationship that provides extra information, in this case, the course_id, required to identify section entities uniquely.

A weak entity set is one whose existence is dependent on another entity, called its identifying entity

Instead of associating a primary key with a weak entity, we use the identifying entity, along with extra attributes called discriminator to uniquely identify a weak entity.

course
<u>course_id</u>
title
credits

???

section
<u>sec_id</u>
semester
<u>year</u>
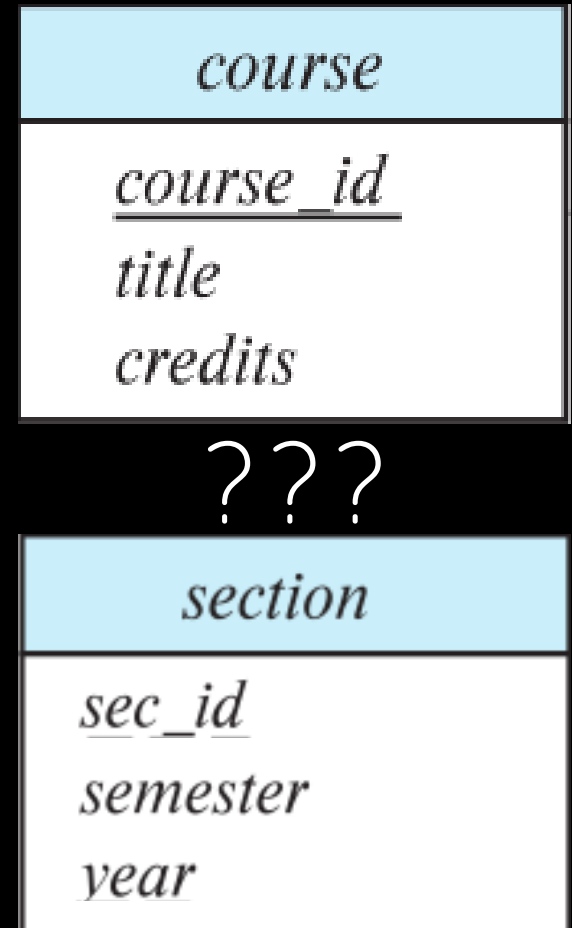
Weak Entity Sets (Cont.)

An entity set that is not a weak entity set is termed a **strong entity set**.

Every weak entity must be associated with an identifying entity; that is, the weak entity set is said to be **existence dependent** on the identifying entity set.

The identifying entity set is said to **own** the weak entity set that it identifies.

The relationship associating the weak entity set with the identifying entity set is called the **identifying relationship**.

In E-R diagrams, a weak entity set is depicted via a double rectangle.

We underline the discriminator of a weak entity set with a dashed line.

The relationship set connecting the weak entity set to the identifying strong entity set is depicted by a double diamond.

Primary key for *section* – (*course_id, sec_id, semester, year*)

Soal 01

Itsy Bitsy adalah perusahaan e-commerce yang menjual berbagai barang kerajinan tangan dari berbagai penjual. Saat ini mereka tengah membangun database yang akan membantu mereka dalam mencatat penjual dan masing-masing barang yang mereka jual. Masing-masing penjual memiliki nama yang unik, kontak email, alamat, dan nomor telepon. Penjual dapat menjual satu atau lebih barang, masing-masing barang memiliki id yang unik, nama, dan harga.

Pengembangan lebih lanjut, dilakukan penyimpanan informasi pembeli, berupa id, nama dan alamat (terdiri atas nama jalan, nama kota, dan kodepos). Setiap pembeli dapat melakukan pembelian. Satu kali pembelian memiliki id, tanggal pembelian, dan total harga. Untuk setiap pembelian, daftar barang yang dibeli dicatat berdasarkan suatu nomor urut tertentu yang unik untuk satu pembelian tersebut. Selain itu, untuk tiap barang yang dibeli dicatat kuantitas pembeliannya. Oleh karena itu, total harga suatu pembelian dihitung berdasarkan penjumlahan setiap harga bara.... dikalikan kuantitas barang.

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