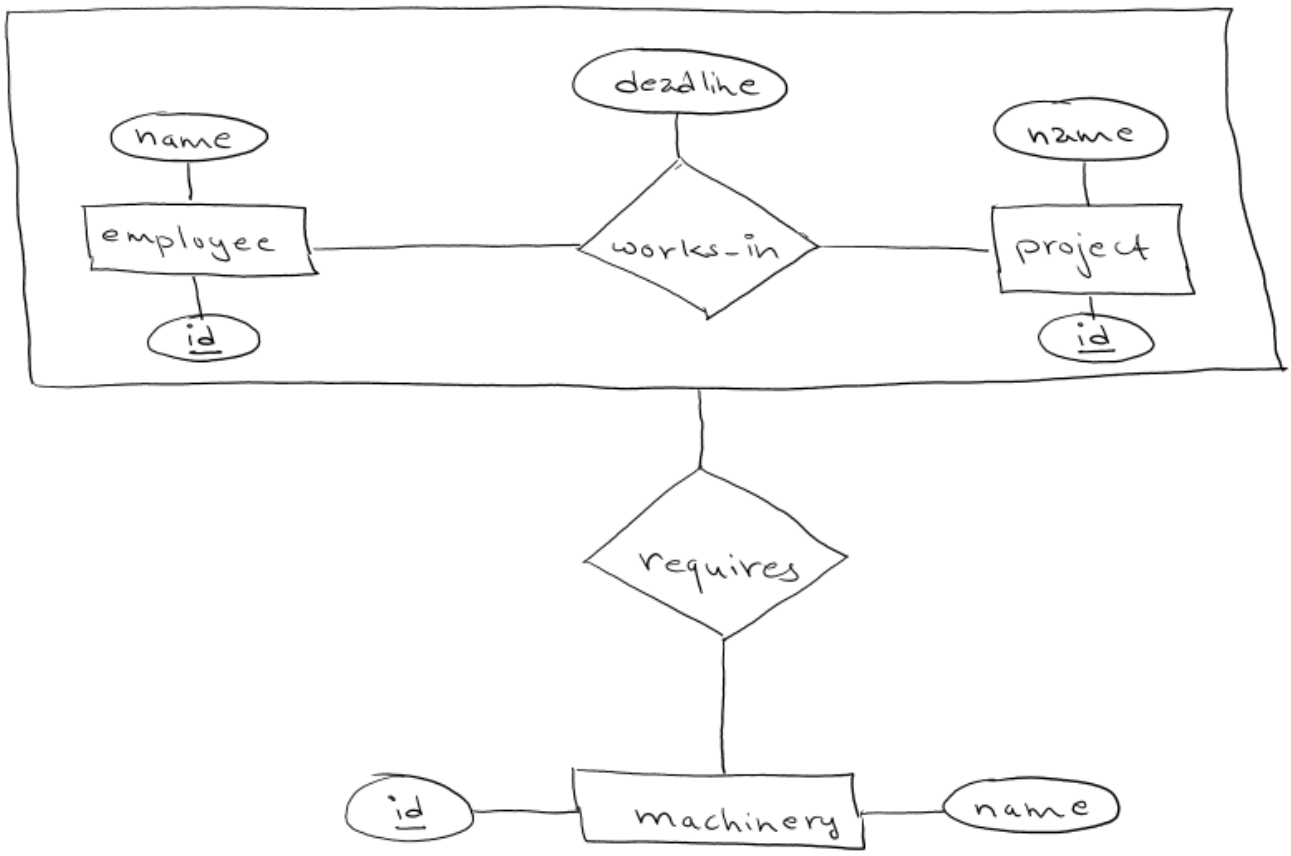
Name : Subhojit Ghimire
Sch Id : 1912160
Subject : DBMS Tutorial
Date : 10/11/2021

Q.1. Define the concept of aggregation. Give an example of where this concept is useful and explain it.

→ Aggregation is an abstraction through which relationships are treated as higher-level entities. Thus, the relationship between A and B is treated as if they were an entity C.

For example: Employees work for projects. An employee working for a particular project uses various machinery.



Q.2. Consider the E-R diagram in Figure 2.10, which models an online bookstore.

(a) List the entity sets and their primary keys.

→ Entity sets and primary keys:

1. author (name, address, URL)
   PRIMARY KEY (name)

2. publisher (name, address, phone, URL)
   PRIMARY KEY (name)

3. customer (email, name, address, phone)
   PRIMARY KEY (email)

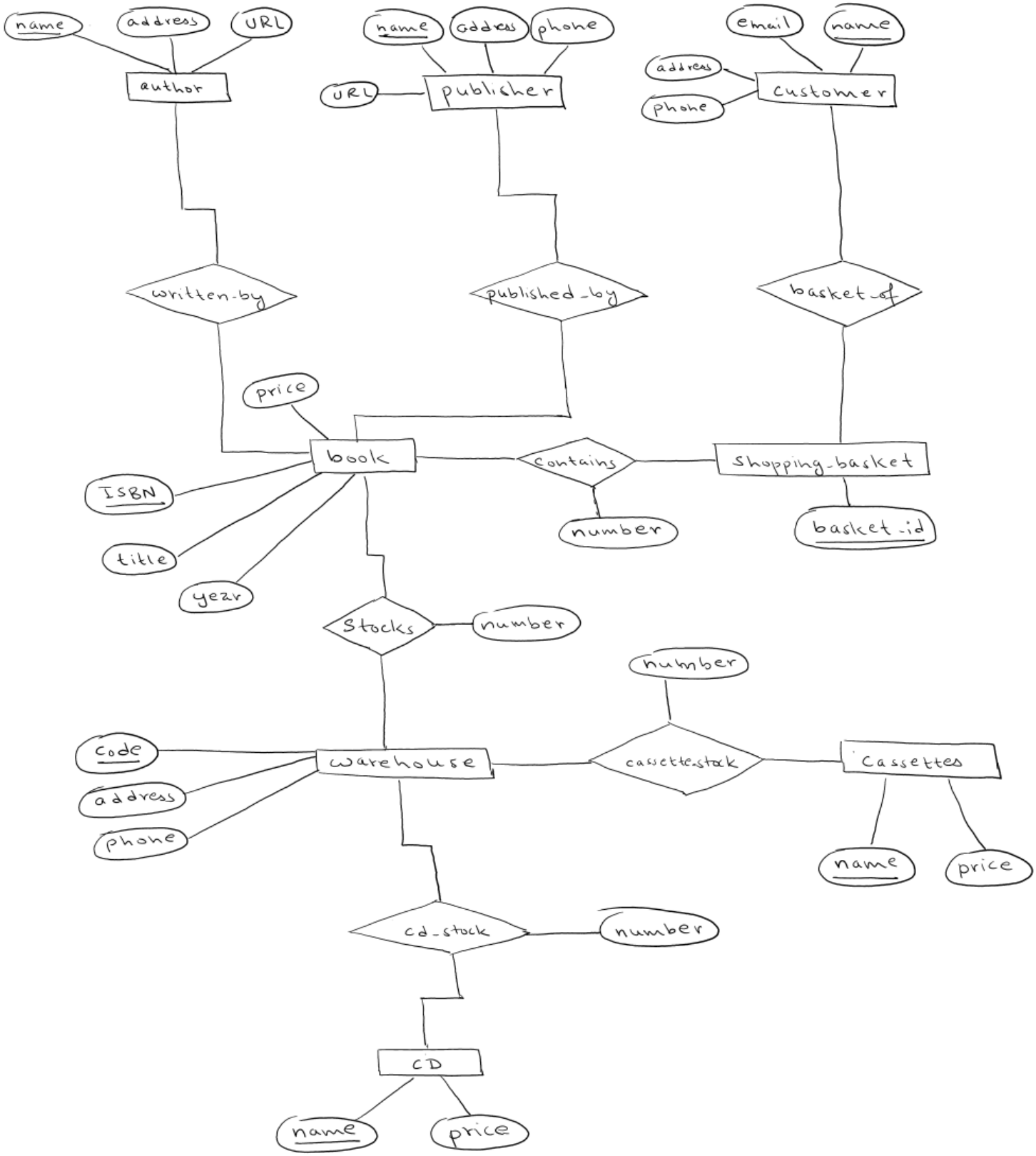
4. book (ISBN, title, year, price)
   PRIMARY KEY (ISBN)

5. warehouse (code, address, phone)
   PRIMARY KEY (code)

6. shopping-basket (basketID)
   PRIMARY KEY (basketID)

(b) Suppose the bookstore adds music cassettes and compact disks to its collection. The same music may be present in cassette or compact disk format, with different prices. Extend the E-R diagram to model this addition, ignoring the effect on shopping baskets.

→ Extended E-R:


name
address
URL
author
name
address
phone
URL
publisher
email
name
address
phone
customer
written-by
published_by
basket_of
price
book
contains
shopping-basket
ISBN
title
year
number
basket_id
Stocks
number
number
code
address
phone
warehouse
cassette-stock
Cassettes
name
price
cd-stock
number
CD
name
price

(c) Now extend the ER Diagram, using generalisation, to model the case where a shopping basket may contain an combination of books, music cassettes, or compack disks.

→ Extended ER using Generalisation: