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Homework 1

2.2.1

1. The attributes of relation 1: acctNo, type, balance

The attributes of relation 2: firstName, lastName, idNo, account

1. Tuples of relation 1: 12345, savings, 12000; 23456, checking, 1000; 34567, savings, 25.

Tuples of relation 2: Robbie, Banks, 901-222, 12345; Lena, Hand, 805-333, 12345; Lena, Hand, 805-333, 23456

c) The components of one tuple from relation 1: 12345, savings, 12000

The components of one tuple from relation 2: Robbie, Banks, 901-222, 12345

1. relation schema 1: The relation Accounts, acctNo, type, balance

relation schema 2: The relation Customers, firstNAme, lastName, idNo, account

1. the database schema: The relation Accounts, acctNo, type, balance; The relation Customers, firstNAme, lastName, idNo, account
2. domains for attributes: acctNo,balance,account-Integer;type,firstName,lastName-String; idNo-Integer(w/ 6 digits separated by a dash)
3. We can change the order of attributes of each of relations. For example, for the first one we can order as: account number, balance and a type. And for another one, we could have: lastNAme, firstName, account, idNo.

Another suggestion would be that these two relations can be combined into one relation which contains all the information of firstName, lastNAme, idNo, account and followed by corresponding type and balance.

Ex2

List of clients with their unique id numbers and number of books they have currently rented

|  |  |  |  |
| --- | --- | --- | --- |
| firstName | lastName | idNumber | numBooks |
| Kostadin | Boychev | 12345 | 2 |
| Rubab | Zehra | 67891 | 4 |
| Judy | Gab | 11121 | 20 |

List of books in the database with author names and number of copies that exist

|  |  |  |
| --- | --- | --- |
| bookName | numCopies | bookAuthor |
| Javascript | 10 | Munson |
| Java | 8 | Djorjevic |

List of titles of books with their unique books codes, clients by who they are rented and dates when it was taken and is supposed to be returned. In takenby, we list id numbers of clients, because it is more convenient rather than using names which can be repeated.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| bookTitle | bookCode | takenBy | dateRented | dateReturned |
| Javascript | 345-123 | 12345 | 01-01-17 | 08-01-17 |
| Java | 123-345 | 67891 | 02-02-17 | 02-20-17 |

Relation 1

Attributes: firstName, lastName, idNumber, numBooks

Corresponding domains: String, String, Integer, Integer

Relation 2

Attributes: bookName, numCopies, bookauthor

Corresponding domains: String, Integer, String

Relation 3

Attributes: bookTitle, bookCode, takenBy, dateRented, dateReturn

Corresponding domains: String, Integer, String, Integer, Integer