OLIVIA WILSON PIETRZAK EPPS 6354

HOMEWORK 2

WHAT ARE THE DIFFERENCES BETWEEN RELATION SCHEMA, RELATION AND INSTANCE? GIVE AN EXAMPLE USING THE UNIVERSITY DATABASE TO ILLUSTRATE.

- Relation schema: how tables relate to each other in a database (think blueprint). The diagram of a db.
- Relation: a single table in the database. The relation schema provides the structure (constraints like data type or columns included).
- Instance: the data in a table; one row of data is called a tuple.
- Example: university database has the relation schema or the tables and their connections; a relation is the instructor table; an instance is the instructor data (or a tuple could be Mozart and their information).

2. Draw a schema diagram for the following bank database:

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branch(*branch_name*, *branch_city*, *assets*)
customer (*ID*, *customer_name*, *customer_street*, *customer_city*)
loan (*loan_number*, *branch_name*, *amount*)
borrower (*ID*, *loan_number*)
account (*account_number*, *branch_name*, *balance*)
depositor (*ID*, *account_number*)

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3. Consider the above bank database. Assume that branch names (*branch_name*)and customer names (*customer_name*)uniquely identify branches and customers, but loans and accounts can be associated with more than one customer.
   i. What are the appropriate primary keys? (Underline each in diagram)
   ii. Given your choice of primary keys, identify appropriate foreign keys.

branch(*branch_name*, *branch_city*, *assets*)
customer (*ID*, *customer_name*, *customer_street*, *customer_city*)
loan (*loan_number*, *branch_name*, *amount*)
borrower (*ID*, *loan_number*)
account (*account_number*, *branch_name*, *balance*)
depositor (*ID*, *account_number*)

QUESTION 2: draw a relational schema

Question 3: identify appropriate primary & foreign keys