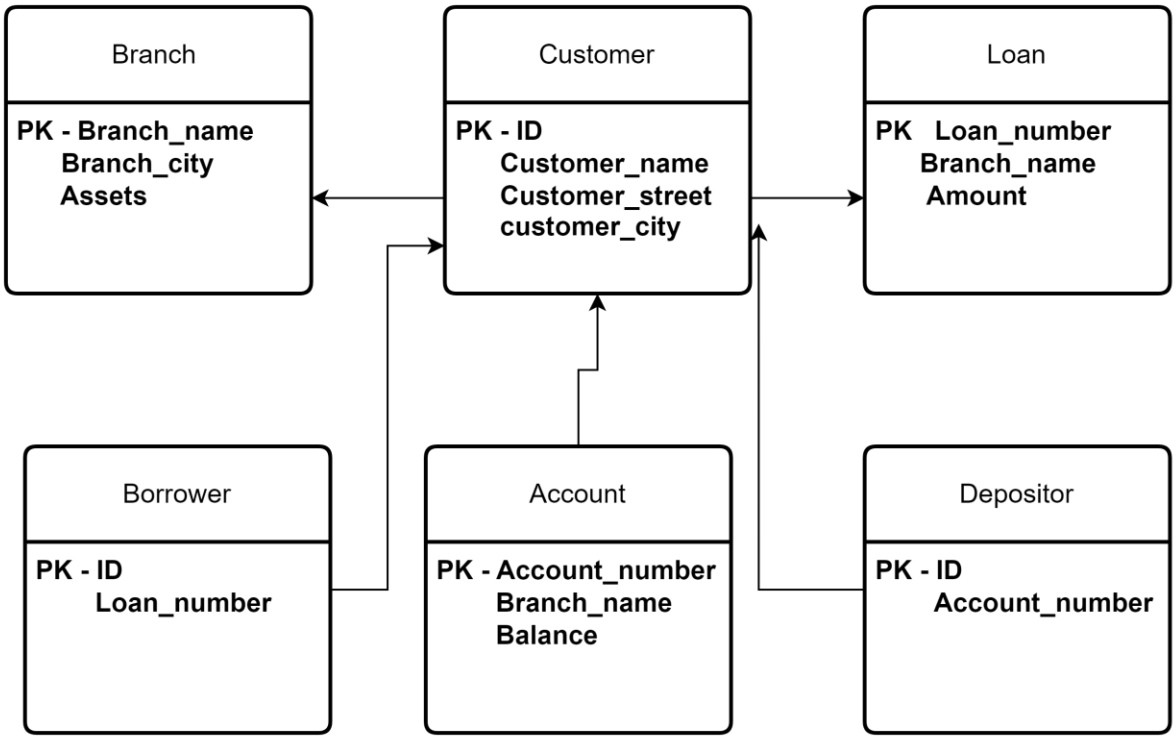
HW# 2

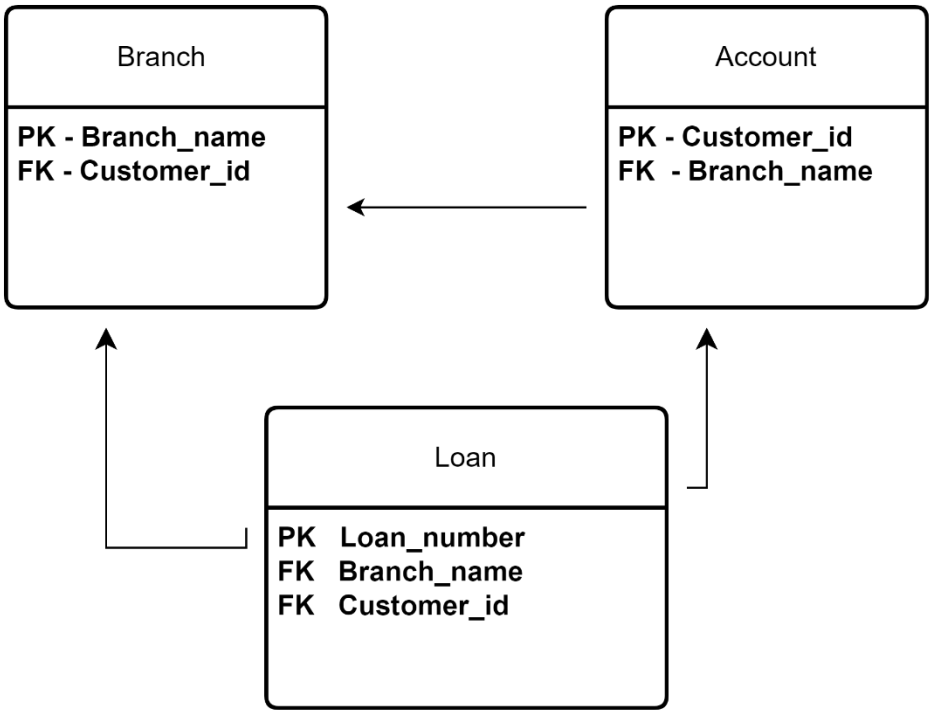
1. **What are the differences between *relation schema, relation* and *instance*? Give an example using the university database to illustrate.**

- The relation schema defines a relation's structure (attributes and their types) in a relational database. It includes the names and data types of attributes (columns) that comprise the relation.
- The relation is the table representing the relation, essentially a mathematical relation. It consists of a set of tuples (rows), each representing a collection of related data values. Each tuple has attributes (columns) corresponding to the attributes defined in the relation schema.
- An instance refers to a specific occurrence of a relation at a particular moment in time. It is a set of tuples that conform to the structure defined by the relation schema. In simpler terms, it's the data stored in the database table.

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



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. What are the appropriate primary keys? (Underline each in diagram)**
Given your choice of primary keys, identify appropriate foreign keys



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