ASSIGNMENT 2

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Relation Schema, Relation, & Instances

- An **instance** is data stored within a database at a particular moment in time

- In the example below, the data on each row (tuple) is a snapshot of the records for each instructor at a specific moment in time

ID	name	dept_name	salary
10101	Srinivasan	Comp. Sci.	65000
12121	Wu	Finance	90000
15151	Mozart	Music	40000
22222	Einstein	Physics	95000
32343	El Said	History	62000
33456	Gold	Physics	87000
45565	Katz	Comp. Sci.	75000

Instance

Relation Schema, Relation, & Instances

- A **relation** can be thought of as the title of a table; all column headings, or attributes, are characteristics of the relation

- In the example below, all the attributes describe the *instructor* relation

Relation (imaginary title): instructor

Attributes describing instructor relation

Instance

ID	name	dept_name	salary
10101	Srinivasan	Comp. Sci.	65000
12121	Wu	Finance	90000
15151	Mozart	Music	40000
22222	Einstein	Physics	95000
32343	El Said	History	62000
33456	Gold	Physics	87000
45565	Katz	Comp. Sci.	75000

Relation Schema, Relation, & Instances

- A **relation schema** is a table with defined attributes and instances pertaining to one relation

- The full table below is the relation schema for the instructor relation and can be expressed as *instructor(ID, name, dept_name, salary)*

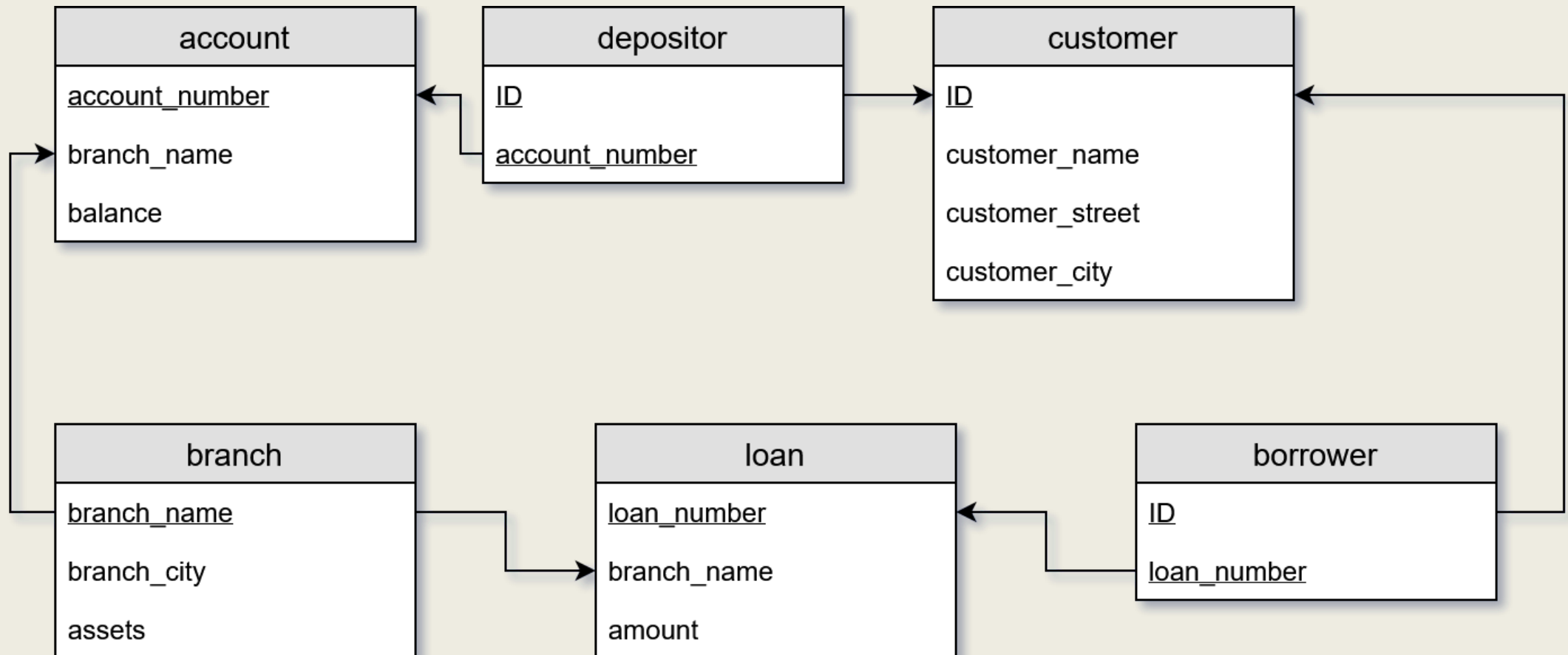Relation schema for instructor relation

Instance

Attributes describing instructor relation

Relation (imaginary title): instructor			
ID	name	dept_name	salary
10101	Srinivasan	Comp. Sci.	65000
12121	Wu	Finance	90000
15151	Mozart	Music	40000
22222	Einstein	Physics	95000
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Bank Database Schema Diagram

Bank Database Schema Diagram: Primary Keys

- A **primary key** is a unique identifier within each relation schema
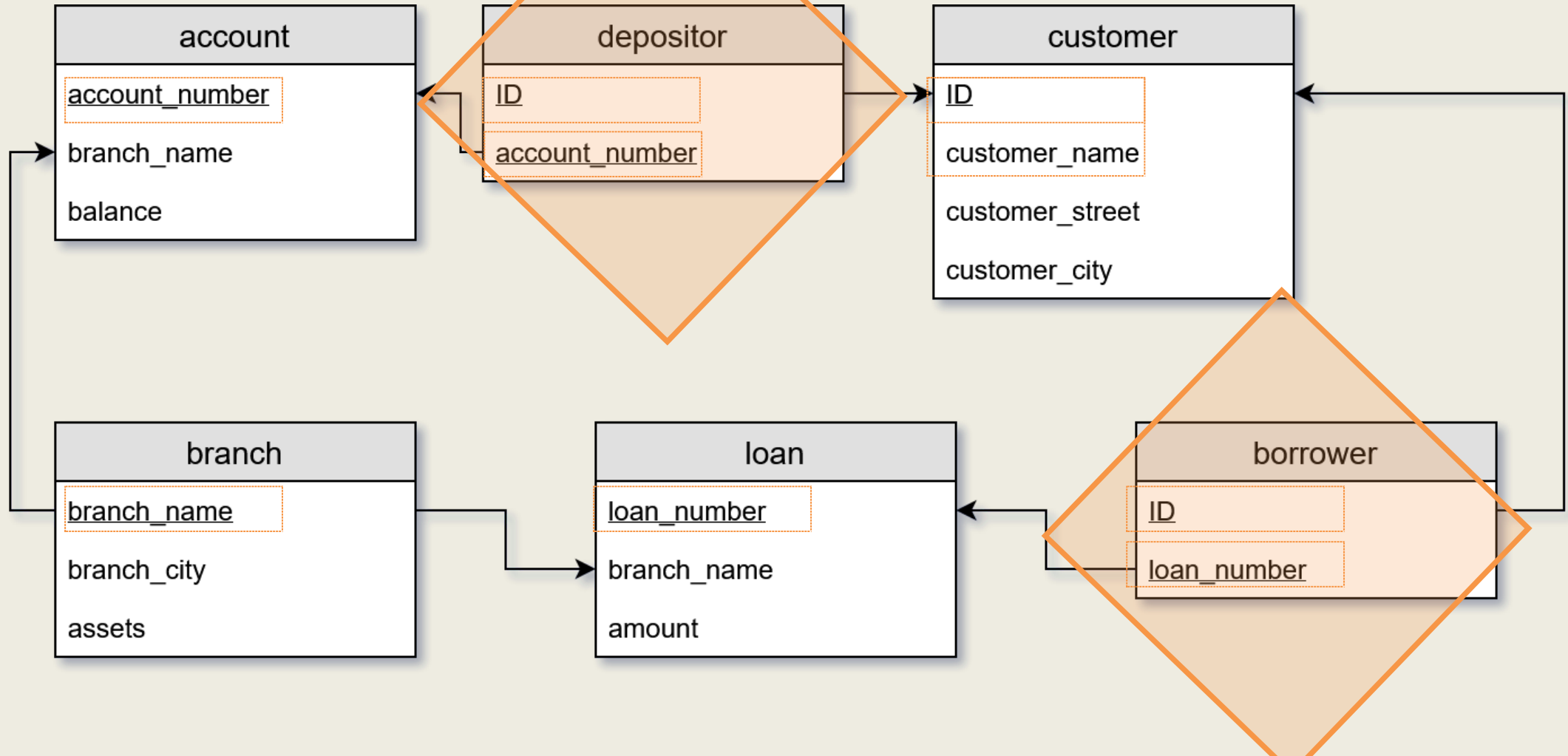
Bank Database Schema Diagram: Foreign Keys

- A foreign key is a the attribute which connects two relation schemas