Assignment 2

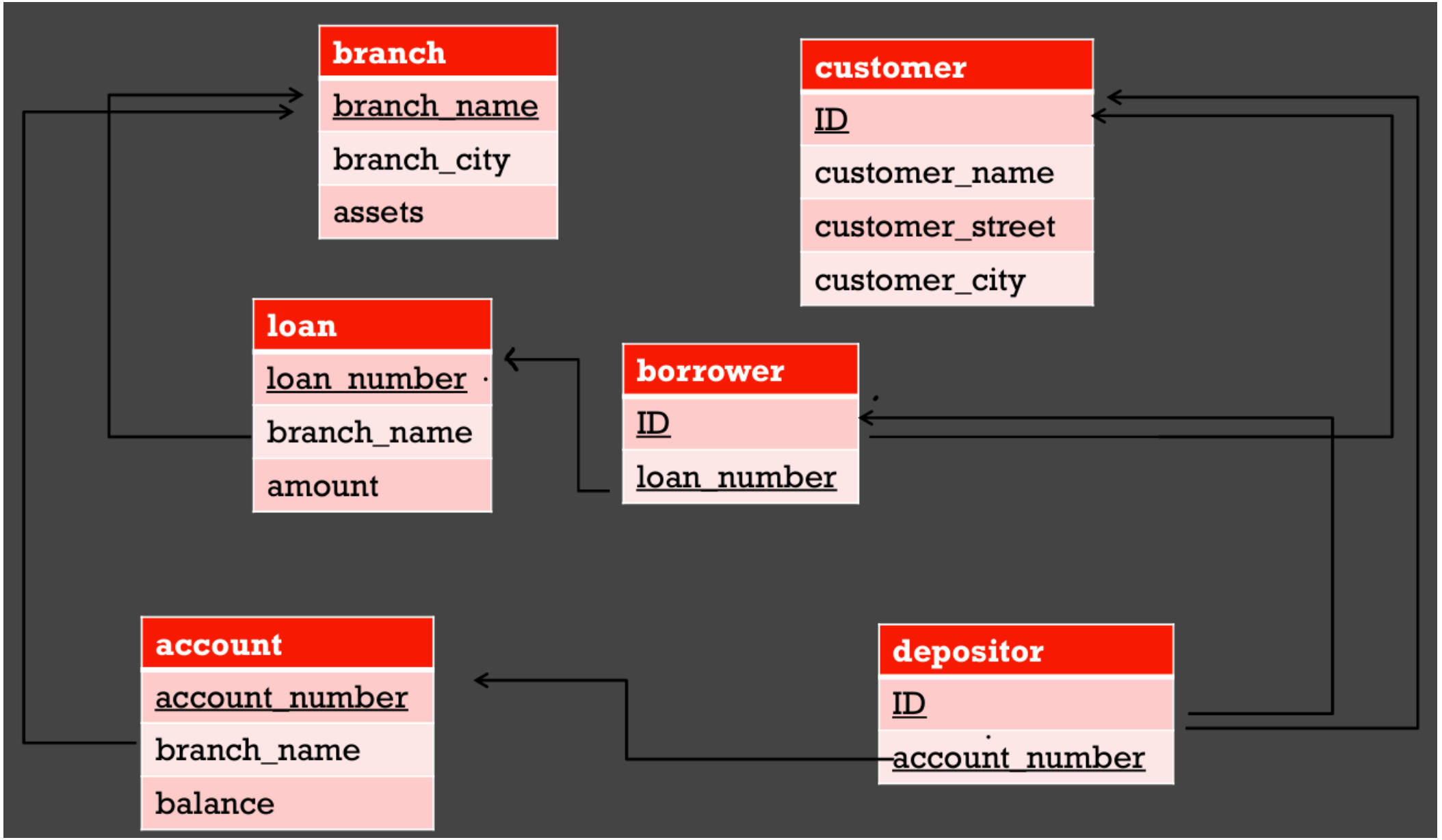
Christina Lam

Relation Schema vs Relation vs Instance

- **Relation Schema**
  - Defines the structure of a relation/table
  - Specifies the name of the relation along with the names and types of attributes/columns it contains
  - Acts as a blueprint for creating instances of the relation
  - Does not contain any actual data but defines the format/template for the relation

- **Relation**
  - (AKA table) A collection of row that conform to the schema defined by the relation schema
  - Each row represents a single record in the relation and contains values for each attribute defined in the schema
  - Relations are 2D structures with rows and columns
  - Each row corresponds to a specific instance/record
  - Each column corresponds to an attribute

- **Instance**
  - Instance of a relation refers to the actual data stored in the relation at a specific point in time
  - Represents a snapshot of the relation’s contents including all rows and their attribute values
  - May change over time as data is inserted, updated, or deleted from the relations


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

Primary & Foreign Keys

- **Primary Keys** are underlined in the image in the previous slide

- **Foreign Keys:**
  - Branch
  - Loan: branch_name referencing branch
  - Account: branch_name referencing branch
  - Customer
  - Borrower: loan_number referencing loan
  - Depositor: account_number referencing account