202409SDSC5003 Assignment 1

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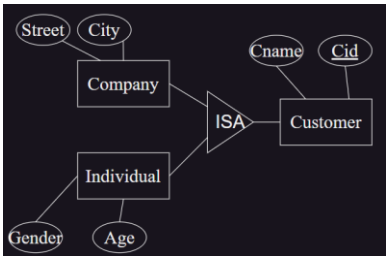
Assignment 1 requires the design of a banking system that aims to draw an E-R diagram to show the relationship between *Customers* (including *Companies* and *Individuals*), *Accounts*, *Loans* and *Payments* and *Branches*, including the start date and *Pin* code of the accounts owned by the *Customer*, and the association between the *Loan* and the *Branch*.

My steps are as follows:

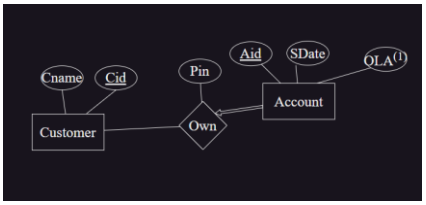
1 ***Company & Individual*:** There are two types of accounts, Company Account and Individual Account, and I see them as subcategories of Customers and connect them with ISA.

- *Customers (Cid, Cname, Pin)*
- *Company (Cid(FK), City, Street)*
- *Individual (Cid(FK), Gender, Age)*



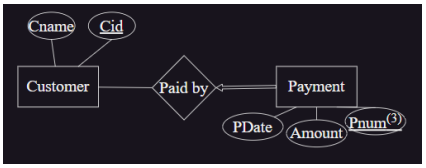
1. ***Own Account:*** A customer can own multiple accounts, but an account can only be owned by one ustomer. There is no account without an owner. At which the account was opened, and a pin number that gives the customer access to the account. So here *(Aid, Pin)* will be used as the primary key

- *Own_Account ((Aid, Pin), Cid(FK), SDate, Pin, OLA)*



2 ***Payment :*** Each payment is made by the customer's entity, and there is no payment that does not correspond to one customer. It's also important to note that there may be duplicates of payment numbers for different customers, and (Cid, Pnum) needs to be used as the joint primary key in this table.

- *Payment ((Cid, Pnum), PDate, Amount)*



1. ***Loan:*** Like payment, each loan corresponds to a customer, and there is no loan that does not correspond to one customer. Also, since the loan must take place at a branch, I added Branch and its associated attributes to the Loan. Here *(Lnum, Bnum)* will be used as the primary key to distinguish loans of the same Lnum from different branches.

- *Loan ((Lnum, Bnum) ,Ltype, Amount, Cid(FK),Street,City)*