

Assumptions made and missing requirements are mentioned in each of the entities and relationship mentioned below.

Entities Chosen:

Branch: Branch_name, Branch_city, Assets.

Branch_name is the primary key.

Customer: Cust_ssn , Cust_name, Cust_street, Cust_city.

Cust_ssn is the primary key.

Employee: Emp_ssn , Emp_name, Startdate, Emp_telephon, Emp_depname, Emp_length.

Emp_depname is a multivalued attribute because an employee can have more than one dependants.

Emp_length is a derived attribute because it will be calculated once we get the start date of the employee so we can use this attribute we view create a view table.

Emp_ssn is the primary key.

Account: Account_no, Balance, Deposit, Withdrawal.

Account_no is the primary key

Deposit and Withdrawal attributes are added to keep track of deposits and withdrawals from savings and checking accounts.

Account is the Superclass.

The specialization is disjoint because both the account are independent.

Account to other subclass is total because both the sub-accounts details will be combined to form an account.

Savings_acc: Interest_rate

Savings_acc is the sub-class of the superclass Account.

Checking_acc: Overdrafts

Checking_acc is the sub-class of the superclass Account.

Loan: Loan_no, Loan_amount.

Loan_no is the primary key.

Payment: Pay_no, Pay_date, Pay_amount.

Pay_no is a partial key to the payment.

Payment is a weak Entity because it does not have any primary key.

Relationship Made:

Depositor: Date_accessed

This relationship is chosen because a customer has a personal banker.

Date_accesses attribute maintains the record of a customer accessing the account.

It's an mn relationship type because a customer can have more than one account and an account can be used by more than one person in the customer's family.

Borrower:

This relationship is chosen because a customer has a loan officer

It's an mn relationship type because a customer can have more than one loan and the type of loan can be taken by many customers.

Payment_Loan:

Since the Payment entity does not have a primary key it needs to seek an entity with a primary key.

Payment_loan relationship is chosen for this reason.

It's a 1n relationship type because a loan can have many payment records and the payment record can have only one loan type of the customer.

Payment to Payment_Loan is total because all the values of the loan will be in the primary key.

Branch_Loan:

This relationship is chosen because a loan originates at a particular branch.

It's a 1n relationship type because a branch can have many loans but a loan will be only to that particular branch.

Cust_banker: Type.

This relationship is chosen because the customer has a banker who assists the customer.

Type is chosen because the employee can be a personal banker or loan officer or can be any who works in the bank.

It is a 1n relationship type because an employee can have many customers and a customer will have only one employee assigned to him.

Working_for:

This is a recursive relationship because the bank has a manager who is also an employee of the bank.

This is 1n relationship type because a manager can have many employees working under him but an employee will have one manager.

