Project Phase II

Relational Schema

Person = (ID, Password, SSN, Fname, Lname, Birthdate, Street, City, State, Zip, Join_Date, Salary, Num_Payments, Total_Earned, User_Type)

Corporation = (ID, Short_Name, Long_Name, Reserved_Assets)

Bank = (ID, Name, Street, City, State, Zip, Reserved_Assets, Corporation_ID [fk3], Manager [fk4])
fk3: Corporation_ID → Corporation(ID), Corporation_ID is non-null
fk4: Manager → Person(ID), Manager is non-null

Account = (Bank_ID [fk1], ID, Balance, Interest_Rate, Last_Deposit, Min_Balance, Num_Withdrawls, Max_Withdrawls, Overdraft_Bank, Overdraft_Account [fk2], Overdraft_Date, Overdraft_Amount, Account_Type)
fk1: Bank_ID → Bank(ID)
fk2: Overdraft_Bank, Overdraft_Account → Account(Bank_ID), Account(ID)

Works For = (Bank_ID [fk5], Employee_ID [fk6])
fk5: Bank_ID → Bank(ID)
fk6: Employee_ID → Person(ID)

Account Owner = (Customer_ID [fk7], Bank_ID, Account_ID [fk8], Joined_Date, Last_Transaction)
fk7: Customer_ID → Person(ID)
fk8: Bank_ID, Account_ID → Account(Bank_ID), Account(ID)

Customer Contact = (Customer_ID [fk9], Type, Address)
fk9: Customer_ID → Person(ID)

Account Fees = (Bank_ID, Account_ID [fk10], Fee)
fk10: Bank_ID, Account_ID → Account(Bank_ID), Account(ID)

Unhandled Constraints
Explicit:
Ensure that each person in the system is either an admin or a user and not both
Ensure that each user is either an employee or a customer or both
Ensure that each individual bank has exactly one distinct manager
Ensure that each bank has at least one employee
Ensure that each bank is owned by exactly one corporation
Ensure that each account is sponsored by exactly one bank
Ensure that each account is owned by at least one customer
Ensure that each account is qualified as either interest bearing or checking

Ensure that each interest bearing account is either a savings or market account
Ensure that no two savings accounts protect the same checking account from overdraft
Implicit:
Ensure that there are no more than 10 employees working at one bank
Ensure that a customer owns no more than 5 accounts
Ensure no more than 4 customers have access to a single account
Ensure that an employee works for no more than 3 banks
Ensure that each bank can only sponsor 5000 accounts