Relational Schema

person = (personID, loginPassword)

administrator = (personID [fk1])
fk1: personID -> person.personID

users = (personID [fk2], ssn, firstName, lastName, birthDate, street, city, state, zip, dateJoined)
fk2: personID -> person.personID

employee = (personID [fk3], salary, numPayments, totEarned)
fk3: personID -> users.personID

customer = (customerID [fk4])
fk4: customerID -> users.personID

contact = (customerID [fk5], contactType, contactAddress)
fk5: customerID -> customer.customerID

corporation = (corporationID, shortName, longName, reservedAssets)

bank = (bankID, bankName, street, city, state, zip, reservedAssets, corporationID [fk6], manager [fk7])
fk6: corporationID -> corporation.corporationID
fk7: manager -> employee.personID

account = (bankID [fk8], accountID, balance)
fk8: bankID -> bank.bankID

checking = (bankID, accountID [fk9])
fk9: bankID, accountID -> account.bankID, account.accountID

interestBearing = (bankID, accountID [fk10], interestRate, lastDeposit)
fk10: bankID, accountID -> account.bankID, account.accountID

fee = (bankID, accountID [fk11], fee)
fk11: bankID, accountID -> interestBearing.bankID, interestBearing.accountID

savings = (bankID, accountID [fk12], minBalance, overdraftBank, overDraftAccount [fk13], overDraftDate, overDraftAmt)
fk12: bankID, accountID -> interestBearing.bankID, interestBearing.accountID

fk13: overdraftBank, overdraftAccount -> checking.bankID, checking.accountID

market = (bankID, accountID [fk14], numWithdrawals, maxWithdrawals)
fk14: bankID, accountID -> interestBearing.bankID, interestBearing.accountID

workFor = (bankID [fk15], employeeID [fk16])
fk15: bankID -> bank.bankID
fk16: employeeID -> employee.personID

ownAccount = (customerID [fk17], bankID, accountID [fk18], joinedDate, lastTransaction)
fk17: customerID -> customer.customerID
fk18: bankID, accountID -> accounts.bankID, accounts.accountID

Unhandled Constraints

- Employees must work at at least one bank.
- Each person must be an administrator or user (employee and/or customer).
- A bank manager cannot be an employee at another bank.
- A bank must have at least one employee who is not the manager of the bank.
- Each account must be checking or savings or market.
- Each account must be owned by at least one user.
- Each account must be sponsored by a bank
- Each person must have joined the system after their birth date.
- Each account must have been created after the user joined the system.
- Any last transaction date, overdraft date, and last deposit date must be after the date the account was created.
- Each contact type must match its corresponding contact address.
- A manager must have a greater salary than an employee who is not a manager.
- Each savings account must not have a balance below its minimum balance
- Each market account must not have a number of withdrawals above the maximum number of withdrawals.
- All string data must be within the limit specified by their domain constraint.