

Schema Mapping (Using Multiple Relations-Superclass and Subclass Method)

Person = (person_id, pass)

User = (person_id[fk1], tax_id, first_name, last_name, birthdate, street, city, state, zip, date_joined)

fk1: person_id → Person.person_id

Admin = (person_id[fk2])

fk2: person_id → Person.person_id

Employee = (employee_id[fk3], salary, tot_earned, num_payments)

fk3: employee_id → User.person_id

Customer = (customer_id[fk4])

fk4: customer_id → User.person_id

Customer_Contact = (customer_id[fk5], contact_type, contact_address)

fk5: customer_id → Customer.customer_id

Corporation = (corporation_id, short_name, long_name, reserved_assets)

Bank = (bank_id, bank_name, street, city, state, zip, reserved_assets, manager[fk6], corporation_id[fk7])

fk6: manager → Employee.employee_id

fk7: corporation_id → Corporation.corporation_id

Account = (bank_id[fk8], account_id, balance)

fk8: bank_id → Bank.bank_id

Interest_Bearing = (bank_id, account_id[fk9], interest_rate, last_deposit)

fk9: (bank_id, account_id) → Account.(bank_id, account_id)

Interest_Bearing_Fees = (bank_id, account_id[fk10], fee)

fk10: (bank_id, account_id) → Interest_Bearing.(bank_id, account_id)

Checking = (bank_id, account_id[fk11])

fk11: (bank_id, account_id) → Account.(bank_id, account_id)

Savings = (bank_id, account_id[fk12], min_balance, overdraft_bank, overdraft_account [fk13] overdraft_date, overdraft_amount)

fk12: (bank_id, account_id) → Interest_Bearing.(bank_id, account_id)

fk13: (overdraft_bank, overdraft_account) → Checking.(bank_id, account_id)

Market = (bank_id, account_id[fk14], max_withdrawal, num_withdrawals)

fk14: (bank_id, account_id) → Interest_Bearing.(bank_id, account_id)

Customer_Own_Account = (customer_id[fk15], bank_id, account_id[fk16], joined_date, last_transaction)

fk15: customer_id → Customer.customer_id

fk16: (bank_id, account_id) → Account.(bank_id, account_id)

Works_For = (bank_id[fk17], employee_id[fk18])

fk17: bank_id → Bank.bank_id

fk18: employee_id → Employee.employee_id

Unhandled Constraints:

1. Ensure person must be a admin or user
2. Ensure admin and user must be disjoint
3. Ensure user must be employee and/or customer
4. Ensure bank has at least 1 employee
5. Ensure account has at least 1 customer
6. Ensure account must be interest-bearing or checking
7. Ensure interest-bearing and checking must be disjoint
8. Ensure interest-bearing account must be market or savings
9. Ensure market and savings must be disjoint
10. Ensure that SSN is valid
11. Ensure that contact type and/or contact address are valid
12. Ensure that fee type is valid
13. Ensure that manager is not working at any other bank concurrently
14. Ensure that any element of address is valid
15. Ensure that withdrawals doesn't exceed max withdrawals in market