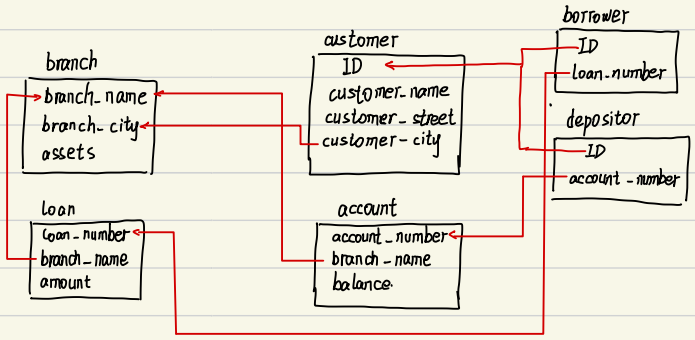
2.7. a. $\Pi_{branch\_name}(\sigma_{branch\_city = \text{"Chicago"}}(branch))$

b. $\Pi_{ID}(\sigma_{branch\_name = \text{"Downtown"}}(borrower \bowtie loan))$

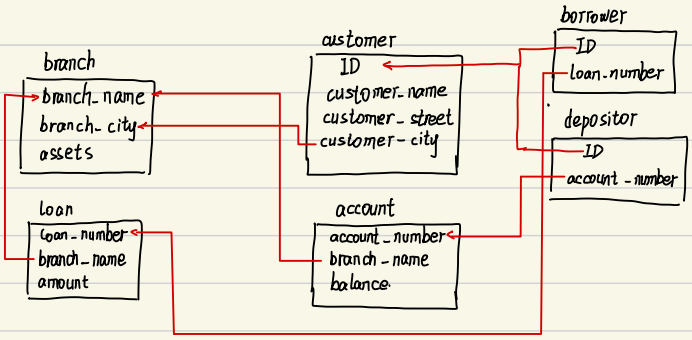
2.12 1.

branch(branch_name, branch_city, assets)
customer (ID, customer_name, customer_street, customer_city)
loan (loan_number, branch_name, amount)
borrower (ID, loan_number)
account (account_number, branch_name, balance)
depositor (ID, account_number)

2.



2.13



the same as 12.2

2.15 a. $\Pi_{loan\_number}(\sigma_{amount > \$10000}(loan))$

b. $\Pi_{ID}(\sigma_{balance > \$6000}(account \bowtie depositor))$

c. $\Pi_{ID}(\sigma_{balance > \$6000 \text{ and } branch\_name = \text{"Uptown"}}(account \bowtie depositor \bowtie branch))$