CSE3103 : Database
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Practice Problem: 01

Consider the bank database in above. Give an expression in the relational algebra of the following queries.

branch (*branch name*, branch city, assets)
customer (*customer id*, customer name, customer city)
loan (*loan number*, branch name, amount)
borrower (customer id, loan number)
account (*account number*, branch name, balance)
depositor (customer id, account number)

1. Find the names of all branches located in "Chicago".

2. Find the names of all borrowers who have a loan in branch "Downtown".

Practice Problem: 02

Consider the bank database in above. Give an expression in the relational algebra of the following queries.

Maker(<u>maker_id</u>, maker_name, maker_city)
pc(<u>model_id</u>, maker_id, speed, ram, hd, price)
laptop(<u>model_id</u>, maker_id, speed, ram, hd, screen, price)

1. Find the model id and speed of all PC with more than 1 gigabyte of RAM.

2. Find the model id and price of all products (pc and laptop) made by the manufacturer named HP.

3. Find the manufacturer related information (id, name, city) who only make laptop but no PCs.

Practice Problem: 03

Consider the bank database in above. Give an expression in the relational algebra of the following queries.

employee (*person id*, person name, street, city)
works (*person id*, company name, salary)
company (*company id*, company name, city)

1. Find the names, street addresses, and cities of residence of all employees who work for "Brac Bank Limited" and earn more than 10,000.

2. Find the names of all employees who live in "Chittagong" and whose salary is greater than 100,000.

3. Find all employees in the database who do not work for "Brac Bank Limited".

4. Find all employees in the database who earn more than each employee of "Midland Bank Limited".

5. Find those companies whose employees earn a higher salary, on average, than the average salary at "Brac Bank Limited".