BMEG3120: Exercise List 5

Assume that we have these tables:

- CUST: schema (cid, name), where *cid* and *name* are a customer's id and name, respectively. The table has a candidate key {cid}.
- ACCOUNT: schema (aid, cid, bid, balance), where each tuple represents an account. Specifically, *aid* is the account id, *cid* is the customer id of the account's owner, *bid* is the id of the branch where the account was opened, and the meaning of *balance* is obvious. The table has a candidate key {cid, bid}, and another candidate key {aid}.

Write SQL queries to solve the following problems.

Problem 1. Find the owners' names of the counts whose balances are greater than the average balance of all accounts.

Answer.

```
select name
from CUST, ACCOUNT
where CUST.cid = ACCOUNT.cid and
   balance >= (select avg(balance) from ACCOUNT)
```

Problem 2. Define the *wealth* of a customer as the total balance of all her/his accounts. Report the cids of the customers whose wealths are greater than the average wealth of all customers.

Answer.

```
select cid
from ACCOUNT
group by cid
having sum(balance) >= (select avg(wealth) from (
   select sum(balance) as wealth
   from ACCOUNT
   group by cid))
```

Problem 3. Find the cid of the customer that owns the largest number of accounts. If multiple customers have the same largest number of accounts, their names should all be displayed.

Answer.

```
select cid
from ACCOUNT
group by cid
having count(*) = (select max(accnum) from (
   select count(*) as accnum
   from ACCOUNT
   group by cid))
```

Problem 4*. For each branch, display its bid, and the cid(s) of the owner(s) of the account(s) with the largest balance among all the accounts in that branch.

Answer.

```
select bid, cid
from ACCOUNT
where (bid, balance) in
    (select bid, max(balance)
    from ACCOUNT
    group by bid)
```