

# CS250/219 Database Systems: Ex 3

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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}.
- BRANCH: schema (bid, city),  
where each tuple represents a branch of HSBC. Specifically, bid is the branch's id, and city is the city where the branch is located.  
The table has a candidate key {bid}.
- ACCOUNT: schema (cid, bid, balance),  
where each tuple represents an account. Specifically, 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}.

Write SQL queries to solve the following problems.

**Problem 1.** Find the balances of all the accounts owned by the customer(s) named John.

**Problem 2.** Find the cids of the customers that have accounts only in HK.

**Problem 3.** Find the cids of the customers that have accounts in both NY and HK, but not in any other city.

**Problem 4\*.** Find the cids of the customers that have accounts in all the cities where HSBC has a branch.