CS4350 Database Systems Quiz#2

**Name: Loc Nguyen**

PERSON ( FullName, Address, ZipCode, Occupation, Income)

AREA( ZipCode, Population, AverageIncome)

LOAN( FullName, BankName, AmountOfLoan)

Express each of the following query by a SQL statement that uses a minimum number of tables and operations

1. The name of every person who has no income.

SELECT P.FullName

FROM Person P

WHERE P.Income IS NULL;

1. The name of every person and their address whose income more than or equal the income of any person in their zipcode area, i.e.they have the highest incomes in their zipcoide.

SELECT P.FullName, P.Address

FROM Person P

JOIN Area A ON P.ZipCode = A.ZipCode

WHERE P.Income > A.AverageIncome;

1. The name of every software engineer who earns more than $100,000.

SELECT P.FullName

FROM Person P

WHERE P.Income > 100000 AND P.Occupation = ‘Software Engineer’;

1. The zipcodes which have population more than 100,000 and average income less than 30,000

SELECT A.ZipCode

FROM Area A

WHERE A.Population > 100000 AND A.AverageIncome < 30000;

1. The name of every person who have at least two loans from two different banks.

SELECT DISTINCT P.FullName

FROM Person P

JOIN Loan L ON P.FullName = L.FullName

WHERE COUNT(L.BankName) > 1;

1. The name of any person who has two different loans from the same bank.

SELECT P.FullName

FROM Person P

JOIN Loan L1 ON P.FullName = L1.FullName

JOIN Loan L2 ON P.FullName = L2.FullName

GROUP BY P.FullName, L1.BankName

HAVING L1.BankName = L2.BankName AND L1.AmountOfLoan <> L2.AmountOfLoan;

Explanation: If a person has the same bank name but different amount of loan, they will be listed.