CS2102 Database Systems
2014/2015 Semester I
Tutorial #2 Relational Calculus

Consider a database application for a pizza company. The company manages several stores in different parts of Singapore. Pizzas have a code identifying them, a name, and a size in inches. A store has a name. The database records the location of the store and the telephone number of the store. Different stores may sell the same pizzas at different prices.

The schema of the database is as follow:

PIZZA (<u>code</u>, name, size)
STORE (<u>name</u>, location, phone)
SELLS (<u>storename, code</u> , price)

Write the following queries in **tuple relational calculus and domain relational calculus**.

1. Find the names of pizzas that come in a 10 inch size.

2. Find the names of pizzas that come in a 10 inch or a 12 inch size.

3. Find the names of pizzas that come in both a 10 inch and a 12 inch size.

4. Find the pairs of different codes of pizzas with the same name and same size (is there any?)

5. Find the names and phone numbers of the stores in "College Park" or "Greenbelt" that sell a 10 inch pizza named "pepperoni" for less than $8.

6. Find the codes of the most expensive pizzas – assume the scheme of the database is reduced to a relation pizza(code, price) to simplify.

7. Find the names of the stores that sell all pizzas.