**CS 460 – Assignment #4**

**ERDs, JOINs and GROUP BY**

# Supermarket - database model, implementation & queries

A local supermarket has contacted you about building a database for them. They would like to keep track of their customers and what products/items they purchase. They think it would be a good idea to follow the "shopping cart" model. In this model, customers may have more than one cart and each cart can hold multiple items.

1. Come up with a design represented by a crow's foot ERD.
2. Once you are done, I will provide you with a script to create your table and populate the data. (This should be done before you leave class today.)
3. Write queries for the following:

1. Determine the number of items and total price for of all items that exist.

2. Show each customer with all of their cart ids.

3. Now just show each customer with the number of carts they have. HINT: you need to group carts for each customer. Group by cart id

4. Show each customer with the ids for the items they've purchased. Join cost by cart table

5. Show each customer with the names of the items they've purchased.

6. Determine the amount of money each customer has spent. HINT: group by customers and sum prices \* qty.

7. Determine the number of different items bought per customer

select customer.name, count(item.name)

from customer

join cart

on customer.id = cart.customer\_id

join cartitem

on cart.id = cartitem.cart\_id

join item

on item\_id = item.id

group by customer.name ;

8. Per customer, determine the cost of the most expensive item

select customer.name, max(item.price)

from customer

join cart

on customer.id = cart.customer\_id

join cartitem

on cart.id = cartitem.cart\_id

join item

on item\_id = item.id

group by customer.name ;

9. List all customers that don't have any carts.

10. List all items that do not appear in any shopping cart.

select customer.name, sum(item.price \* cartitem.qty)

from customer

join cart

on customer.id = cart.customer\_id

join cartitem

on cart.id = cartitem.cart\_id

join item

on item\_id = item.id

group by customer.name

select name

from customer

where not exists(

select customer\_id from cart where cart.customer\_id = customer.id )

select name

from item

where not exists(

select item\_id from cartitem where item\_id = item.id )