**Combination of ANDs and ORs in a Query, by Dr Yüe Zhang**

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The topic should be fairly straightforward; but I had questions from one student that I thought might represent the confusion of a few others. So I have created this short handout to address the issue.

Think and compare the following queries:

1. (Base case 1): Restaurants with annual sales greater than 500,000 AND SqFt greater than 1,200 ft
2. (Base case 2): Restaurants with annual sales greater than 500,000 OR SqFt greater than 1,200 ft
3. (Base case 3): Restaurants with annual sales greater than 500,000 AND less than 1,000,000
4. (Base case 4): Restaurants with annual sales greater than 1,000,000 OR less than 300,000

All right, so far I don’t think anybody has problem creating any of the above queries right?

Note: 1 and are queries with combined criteria ABOUT DIFFERENT FIELDS (“cross-field criteria combination”), and 3 and 4 are queries with combined criteria ABOUT THE SAME FIELDS (“within-field criteria combination”).

1. Now look at this query and think – how you would construct it: Restaurants with annual sales higher than 800,000, AND SqFt either less than 1,200 or larger than 2,000.

This query asks for the restaurants who have high sales (more than 800,000), and at the same time either are small in physical space (less than 1,200) or large in physical space (more than 2,000), ignoring or not interested in those medium-size (in SqFt) ones.

So how are you going to construct the queries? Please choose the right design from the following three:

a)

|  |  |  |  |
| --- | --- | --- | --- |
| Field: | RestaurantID | AnnualSales | SqFt |
| Criteria: |  | >800000 | <1200 |
| Or: |  |  | >2000 |

b)

|  |  |  |  |
| --- | --- | --- | --- |
| Field: | RestaurantID | AnnualSales | SqFt |
| Criteria: |  | >800000 | <1200 |
| Or: |  | >800000 | >2000 |

c)

|  |  |  |  |
| --- | --- | --- | --- |
| Field: | RestaurantID | AnnualSales | SqFt |
| Criteria: |  | >800000 | <1200 or >2000 |
| Or: |  |  |  |

Please try to clearly justify (to yourself) your choice.