

Session 4-5 Restricting Rows with Multiple Conditions

Kyunghee Lee, PhD



WAYNE STATE
Mike Ilitch School of Business

Logical Operators

- Used to combine **multiple conditions**
 - NOT – reverses meaning
 - AND – both conditions must be TRUE
 - OR – at least one condition must be TRUE

| | | y | |
|---|---|---|---|
| | | 0 | 1 |
| x | 0 | 0 | 0 |
| | 1 | 0 | 1 |

x AND y

| | | y | |
|---|---|---|---|
| | | 0 | 1 |
| x | 0 | 0 | 1 |
| | 1 | 1 | 1 |

x OR y

| NOT | |
|-----|---|
| x | |
| 0 | 1 |
| 1 | 0 |

NOT x



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Logical Operators Example

```
SELECT ProductDescription, ProductStandardPrice FROM Product_T  
WHERE ProductStandardPrice > 200 AND ProductStandardPrice <= 300
```

```
SELECT CustomerState FROM Customer_T  
WHERE NOT CustomerState = "CA"
```

```
SELECT * FROM Product_T WHERE  
NOT (ProductStandardPrice > 200 AND ProductStandardPrice <= 300)
```

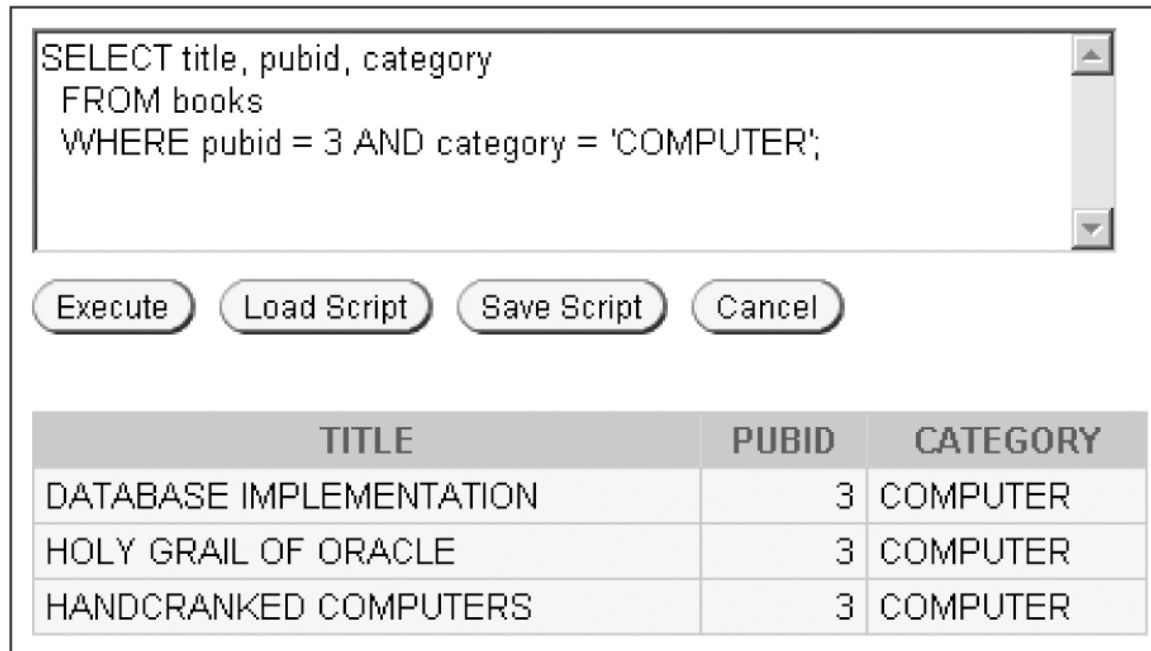
```
SELECT * FROM Product_T WHERE  
ProductStandardPrice <= 200 OR ProductStandardPrice > 300
```



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AND Operator Example



The screenshot shows a SQL query execution window. The query text is: `SELECT title, pubid, category
FROM books
WHERE pubid = 3 AND category = 'COMPUTER';` Below the query text are four buttons: **Execute**, **Load Script**, **Save Script**, and **Cancel**. Below the buttons is a table with three columns: **TITLE**, **PUBID**, and **CATEGORY**. The table contains three rows of data.

| TITLE | PUBID | CATEGORY |
|-------------------------|-------|----------|
| DATABASE IMPLEMENTATION | 3 | COMPUTER |
| HOLY GRAIL OF ORACLE | 3 | COMPUTER |
| HANDCRANKED COMPUTERS | 3 | COMPUTER |

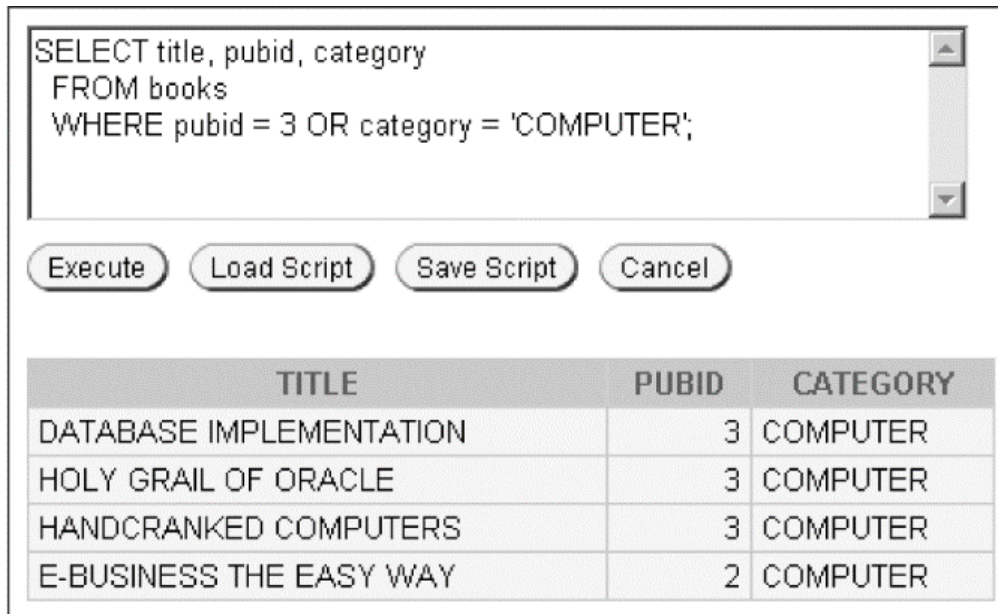
FIGURE 8-23 Searching with multiple conditions using the AND logical operator



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OR Operator Example



The screenshot shows a database query window. At the top, a text area contains the following SQL query:

```
SELECT title, pubid, category  
FROM books  
WHERE pubid = 3 OR category = 'COMPUTER';
```

Below the text area are four buttons: "Execute", "Load Script", "Save Script", and "Cancel".

Below the buttons is a table with the following data:

| TITLE | PUBID | CATEGORY |
|-------------------------|-------|----------|
| DATABASE IMPLEMENTATION | 3 | COMPUTER |
| HOLY GRAIL OF ORACLE | 3 | COMPUTER |
| HANDCRANKED COMPUTERS | 3 | COMPUTER |
| E-BUSINESS THE EASY WAY | 2 | COMPUTER |

FIGURE 8-24 Searching with multiple conditions using the OR logical operator



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Resolving Multiple Types of Operators

Must be resolved in the order of

1. Arithmetic operators (+, -, *, /)
2. Comparison operators (<, >, =, LIKE, etc.)
3. Logical operators – in the order **NOT, AND, and OR**



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Multiple Logical Operators

- Resolved in the order of NOT, AND, OR
- Parentheses to override the order

SELECT *
FROM books
WHERE category = 'FAMILY LIFE'
OR pubid = 4
AND cost > 15;

Execute Load Script Save Script Cancel

| ISBN | TITLE | PUBDATE | PUBID | COST | RETAIL | CATEGORY |
|------------|-------------------------------|-----------|-------|-------|--------|-------------|
| 1059831198 | BODYBUILD IN 10 MINUTES A DAY | 21-JAN-01 | 4 | 18.75 | 30.95 | FITNESS |
| 0401140733 | REVENGE OF MICKEY | 14-DEC-01 | 1 | 14.2 | 22 | FAMILY LIFE |
| 2491748320 | PAINLESS CHILD-REARING | 17-JUL-00 | 5 | 48 | 89.95 | FAMILY LIFE |
| 0299282519 | THE WOK WAY TO COOK | 11-SEP-00 | 4 | 19 | 28.75 | COOKING |
| 0132149871 | HOW TO GET FASTER PIZZA | 11-NOV-02 | 4 | 17.85 | 29.95 | SELF HELP |

SELECT *
FROM books
WHERE (category = 'FAMILY LIFE'
OR pubid = 4)
AND cost > 15;

Execute Load Script Save Script Cancel

| ISBN | TITLE | PUBDATE | PUBID | COST | RETAIL | CATEGORY |
|------------|-------------------------------|-----------|-------|-------|--------|-------------|
| 1059831198 | BODYBUILD IN 10 MINUTES A DAY | 21-JAN-01 | 4 | 18.75 | 30.95 | FITNESS |
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Wrap-up

- Logical operators
- Resolving multiple types of operators

