“JUST ONE MORE THING”: Tweaking and Embellishing Access Queries

starring: Microsoft Access

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THE PROBLEM

There are always new things to add
There are always new queries to write
Many queries are actually wrong

Like good detectives, we have to keep going back until we get everything nailed down.
Because you keep going back to queries, make them easy to maintain. Which of these would you rather tweak?

<table>
<thead>
<tr>
<th>LOCATION_ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION</td>
</tr>
</tbody>
</table>

They do the same thing, but the bottom one is much easier to follow.
FLEXIBILITY

Seize every chance to make your queries more flexible.

• Hard-code as little as possible
• Use prompts for criteria
• Permit a wide range of criteria
• Include intermediate tables
It is foolhardy to start tweaking a query if you don’t really know what it does. If it’s one of your queries, you have a headstart.
“Each bib is linked to its line item. If we don’t have an order, the bib will be dropped. We link each line item to a subscription. If it’s a monograph, there won’t be one, so the results will only include serials and continuations.”
“Each subscription is linked to a component, and each component is linked through the COMPONENT_PATTERN table to the pattern defined for that component. So, we end up with each serial we receive being linked to the associated pattern.”
“We have a list of each bib record linked with its pattern. Now, we grab the BIB_ID and TITLE from one end and the pattern’s name from the other. So, for each serial that has a subscription (current or ceased) and a component, we will see the title, along with the name of the pattern we’re using to receive it.”
TWEAK ONLY NOW

Now that you understand the current query, you can consider adding to it.

“I’d like to find all of our serials that come more frequently than once a month. The frequency should be associated with the pattern, so this query should be a good place to start. I will need to locate the frequency information, then add criteria that will screen out the monthlies and less frequent patterns.”

Frequency > “Once a Month”
LOOK AT THE TABLES!!!

You want specific frequencies, but you need to know how that information is stored. The ONLY WAY is to look at the tables themselves.

<table>
<thead>
<tr>
<th>PA</th>
<th>PATTERN_NAME</th>
<th>PA</th>
<th>FREQUENCY_CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3x/yr-v,.no.,yr.,mo.</td>
<td>3X</td>
<td>t</td>
</tr>
<tr>
<td>2</td>
<td>Annual--yr.</td>
<td>AN</td>
<td>a</td>
</tr>
<tr>
<td>3</td>
<td>Annual--ed.,yr.</td>
<td>AN</td>
<td>a</td>
</tr>
<tr>
<td>4</td>
<td>Annual--v.,yr.</td>
<td>AN</td>
<td>a</td>
</tr>
<tr>
<td>17</td>
<td>Bimonthly--v.,no.,yr.,mo.(single)</td>
<td>BIN</td>
<td>b</td>
</tr>
<tr>
<td>6</td>
<td>Biennial--ed.,yr.</td>
<td>BIE</td>
<td>g</td>
</tr>
<tr>
<td>7</td>
<td>Biennial--v.,yr.</td>
<td>BIE</td>
<td>g</td>
</tr>
</tbody>
</table>
SOMETHING’S MISSING

The PATTERN table says this:

Acq says this:

“There must be a key somewhere! I’ll look at more tables.”
WHAT’S IT CALLED?

“Pattern— something? No, there doesn’t seem to be one. How about Frequency— something? BINGO!”
LOOK AT THE TABLE!!!

WHAT WILL BE EASIEST TO MAINTAIN?

You could specify:
- Frequencies (e.g. "Semiweekly", "Daily")
- Codes (e.g. "c", "d", "e", "w")

or you could just check for FREQ_CALC_TYPE = "d".
To add a table to an existing query, open the query, and find the icon in the toolbar for “Add Table”
TEST THE QUERY

Do a test run to see if:

* All of the returned results make sense
* All expected records are returned
WHAT DID WE JUST DO?

Analyze one or more queries
Know what you need to change
Find the tables and fields you will need
Make changes, one at a time
Test the query with each change

The same process applies to your own queries, queries from elsewhere or the prepackaged queries.
JOIN SIDE EFFECTS

Joining tables often results in more or fewer records in the results.

One record per bib

One record per MFHD

More…
JOIN SIDE EFFECTS

All patron barcodes

Less...

Only patron barcodes with proxies
ADDING AND DELETING

If you don’t know how a new table will affect a query, test!
CRITERIA ISSUES

Placement and appropriateness
Operators: comparison, Boolean, Between
Pattern matching
Prompting
Dates and criteria
Criteria with grouping

<table>
<thead>
<tr>
<th>ITEM_STATUS_DESC</th>
<th>CIRC_TRANSACTION_ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEM_STATUS_TYPE</td>
<td>CIRC_TRANSACTIONS</td>
</tr>
<tr>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>&quot;Lost--System Applied&quot;</td>
<td>Is Null</td>
</tr>
</tbody>
</table>
CRITERIA PLACEMENT
Put criteria on the “Criteria” line under the field to which they apply.

<table>
<thead>
<tr>
<th>Field: BOOKING_START</th>
<th>CREATE_OPID</th>
<th>MEDIA_SCHEDULE</th>
<th>MEDIA_TYPE_ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIA_SCHEDULE_ARCHIVE</td>
<td>MEDIA_SCHEDULE</td>
<td>MEDIA_SCHEDULE</td>
<td>MEDIA_SCHEDULE</td>
</tr>
<tr>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>&gt;#8/1/2002# And &lt;#9/1/2002#</td>
<td>&quot;medstudent&quot;</td>
<td>&quot;2&quot;</td>
<td>&quot;1&quot; Or &quot;2&quot; Or &quot;3&quot;</td>
</tr>
</tbody>
</table>

| LOCATION_CODE |
| LOCATION |
| "circ:hsse" |

<table>
<thead>
<tr>
<th>ITEM_STATUS_DATE</th>
<th>ITEM_STATUS_DESC</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Between [start] And [end] &quot;Not Charged&quot;</td>
<td></td>
</tr>
</tbody>
</table>

| INDEX_CODE |
| BIB_INDEX |
| ✓ |

<table>
<thead>
<tr>
<th>PO_STATUS_DESC</th>
<th>Mid([FIELD_008],19,1)</th>
<th>Like &quot;650*&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO_STATUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Pending&quot; Or &quot;Approved/Sent&quot; Or &quot;Received Partial&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;&gt;&quot;&quot; And &lt;&gt;&quot;u&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPROPRIATE CRITERIA

Be sure your criteria make sense with the actual values in the field you are using them with.

Run the query without criteria to see what the values are.

This one won’t work as is.
CRITERIA & OPERATORS
Add operators to specify more complex criteria than simple equality.

Boolean:
And
Or
Not

Comparison:
<>  
<  
>  
<=>  
>=

Combined:
>10 And <15
<> “this” And <> “that”
“VHS” or “CD-ROM”

Between:
Between 5 And 10
Between #6/4# And #6/5#
PATTERN MATCHING

With text fields, you can do pattern matching, using the asterisk as a wildcard.

- Anything that ends with “s”
- Anything that starts with “GP”
- Call number has “PER” anywhere in it.
Make your queries more flexible by using prompts instead of hard-coding the criteria.

When you add a prompt, make sure it clearly asks for what it wants. What does “start” want?
DATES AND CRITERIA

All Date fields in Voyager are Date/Time fields, which affects your criteria.

#02/14/2004# = #02/14/2004 00:00:00# ≠
#03/06/2003# = #03/06/2003 00:00:00# ≠
#02/14/2004# = #02/14/2004 00:00:00# ≠
#02/14/2004# = #02/14/2004 00:00:00# ≠
#02/15/2004# = #02/15/2004 00:00:00# ≠
#09/20/2002# = #09/20/2002 00:00:00# ≠
#02/15/2004# = #02/15/2004 00:00:00# ≠
#12/04/2003# = #12/04/2003 00:00:00# ≠
#02/15/2004# = #02/15/2004 00:00:00# ≠
#02/15/2004# = #02/15/2004 00:00:00# ≠

02/14/2004 20:16:15
03/06/2003 14:55:56
02/14/2004 21:19:25
02/14/2004 21:36:31
02/15/2004 10:52:06
09/20/2002 11:56:04
02/15/2004 10:52:10
12/04/2003 12:52:58
02/15/2004 10:52:13
02/15/2004 13:06:32

Date constants without times are that date at exactly midnight.
DATE RANGES

Between #6/4/2004# And #6/5/2004#

One day’s data, from one midnight to the next.
EXPRESSIONS

Using expressions expands the range of values that can be returned.

An expression is any transformation of current values into new values.

Extract the 7th single character from the 008 field and check if it’s a “c”.
MORE EXPRESSIONS

**Usage:**
```vbnet
Val([HISTORICAL_CHARGES]) + Val([HISTORICAL_BROWSES])
```

Add charges and browses, numerically

**Title:**
```vbnet
UCase([TITLE])
```

Convert title to upper case before doing case sensitive comparison

**Amount:**
```vbnet
CCur([AMOUNT]/100)
```

Convert a monetary amount to dollars and cents

**Date:**
```vbnet
Format(Weekday([CHARGE_DATE]),"dddd")
```

Change date to a day name to match input criteria
QUESTIONS?

If we have time, I can work through one or more examples.