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DAL: Specify a Procedure Parameter For the Order By Command

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TOPIC -----

I have a DAL question about how to specify a procedure parameter to do a sort using the "order by" SQL command.

Here is an example. Sorting in the following procedure should be possible on:

- Item fromdepot, which works
- Item 3 the calculated value, which does not working.

The procedure and some examples of the execution is shown below:

```
procedure GetTotalList( xFromDate, xSortitem)
argument Date          xFromDate ;
argument Objname       xSortitem ;
{
  SELECT
    A.FromDepot ,
    A.ToDepot    ,
    Sum(a.volume*a.intransitqty/a.volumeqty)
  FROM
    MLYXX.TB23Transit A
  WHERE
    A.Tickoffdate > xFromDate AND
    A.volumeqty   > 0
  GROUP BY
    A.Fromdepot ,
    A.Todepot
  ORDER BY
    :xSortitem ;
  FOR EACH ä printf("%6sÉt%6sÉt%6.1fÉt",
                    ->FromDepot      ,
```

```
                ->ToDepot          ,  
                ->Expr3           );  
            }  
    COMMIT;  
} end procedure GetTotalList;
```

The execution example below shows the procedure with error message:

```
begin> gettotallist('1992-12-25', 3);  
more> go  
Execution begins...  
Error -206 (0) column not found (3)  
Message is "network", line 1 : unknown column name for any table
```

The execution example below shows the procedure when it works OK:

```
more> gettotallist('1992-12-25', "Fromdepot");  
more> go  
Execution begins...  
BE1101  DE1101    645.2  BE1101  DE1401    460.7
```

What is wrong?

DISCUSSION -----

To do a sort, two things are required:

- The DBMS must support the ORDER BY clause. Not all DBMS brands support this SQL feature. This clause is what actually does the sort, not DAL.
- The field to be sorted on MUST be a result column in the cursor (results table) created by the select command. In other words, it has to be a column name or a column number from the results table.

The following example has been tested with DB2 and DAL (as a procedure) and uses the demo data that is installed with DAL for consistency:

```
procedure sorttest ()  
{  
    select cust_state, sum((receivable / credit_line) * 100)  
    from c11.customer  
    group by cust_state  
    order by 2 ;  
    for each {  
        print cust_state, ->2 ;  
    }  
}  
end procedure sorttest;
```

In your procedure, you were trying to do the ORDER BY clause with some other field than what is available to the DBMS in the results table. Your only valid choices for a field to specify in the ORDER BY clause are:

- FromDepot
- ToDepot
- 3 (the column number of the SUM expression)

If you want to give the sort field as an argument that could change with each execution of the procedure, the sortkey MUST be an integer, which will translate to the column number. A DAL procedure does not allow column name to be used in a parameter of a procedure.

As long as the procedure specifies that the sort field argument is an integer, and you select a valid column number (in the results table) it works just fine. Here is an example:

```
procedure sorttest (sortkey)
argument integer sortkey ;
{
    select cust_state, sum((receivable / credit_line) * 100)
    from c11.customer
    group by cust_state
    order by :sortkey ;
    for each {
        print cust_state, ->2 ;
    }
}
end procedure sorttest;
```

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