

Self Adjusting Date Formats

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The Problem

In a study over time, show:

- Finer partition of dates for recent data
Ex: Grouped by QUARTER
- Wider partition of dates for older data
Ex: Grouped by YEAR

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Same Report on Different Dates

Row labels on		Row labels on
Report run on		Report run on
Jan. 1, 2004		Apr. 1, 2004
Oct03-Dec03		Jan04-Mar04
Jul03-Sep03		Oct03-Dec03
Apr03-Jun03		Jul03-Sep03
Jan03-Mar03		Apr03-Jun03
Oct02-Dec02		Jan03-Mar03
Jan02-Sep02		2002
2001		2001
2000		2000

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Code Intensive Solution

```
proc format ;  
  value qtryear  
    "1oct03"d - "31dec03"d = "Oct03-Dec03"  
    "1jul03"d - "30sep03"d = "Jul03-Sep03"  
    "1apr03"d - "30jun03"d = "Apr03-Jun03"  
    "1jan03"d - "31mar03"d = "Jan03-Mar03"  
    "1oct02"d - "31dec02"d = "Oct02-Dec02"  
    "1jan02"d - "30sep02"d = "Jan02-Sep02"  
    "1jan01"d - "31dec01"d = "2001"  
    "1jan00"d - "31dec00"d = "2000"  
;  
;
```

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No Code Changes for New Dates

- Dynamic Formats Using SAS Concepts
 - § CNTLIN dataset
 - § INTNX function
 - § Nested formats

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The INTNX Function

Arguments:

- a time interval
- a reference date
- the number of intervals
- position in interval

BeginInterval =

```
intnx("qtr", "02MAR2004"D, 0, "B");
```

Yields January 1, 2004

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Intnx Moves by Boundaries

```
FirstDay =  
  intnx("qtr",today(), 2);  
  
Yields July 1, 2004
```

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The CNTLIN Option of PROC FORMAT

```
proc format cntlin = FmtData ;  
run ;
```

FmtData is a SAS dataset, meeting certain requirements.

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CNTLIN Fields

- FMTNAME *
- START *
- END
- LABEL *
- HLO

* Required field

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Data Step to Make Format - Part 1

```
data FmtData(keep=FmtName Start  
              End Label HLO) ;  
  retain FmtName "QTRYR";  
  
  HLO = " " ;
```

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Data Step to Make Format - Part 2 Loop Previous 5 Quarters

```
do I = 1 to 5 ;  
  start= intnx("qtr",today(),-i,"b");  
  end = intnx("qtr",today(),-i,"e");  
  label = put(start,monyy5.)  
          || "- " || put(end,monyy5.);  
  output;  
end ;
```

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Data Step to Make Format - Part 3 Is Part Year Needed?

```
if month(start) ne 1 then do;  
  End = Start - 1 ;  
  Start = intnx("year", End, 0);  
  Label=put(Start,monyy5.)  
          || "- " || put(End,monyy5.);  
  output;  
end;
```

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Data Step to Make Format - Part 4 All the Rest - by Year

```
HLO = "OF";  
Label="year4.";  
output;  
run;  
  
proc format cntlin = FmtData;  
run;
```

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Summary

- Data Step to create data set for PROC FORMAT needed three parts:
 - § Do loop to go back 5 quarters from present
 - § Creating the part year, if needed
 - § Assignment of YEAR format to earlier dates

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