

I'll Have the TABULATEs a la ODS Please,
With a Table of Contents On The Side

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Let's get started!

ODS HTML file types

- BODY= *HTML body output filename;*
- CONTENTS= *HTML Table of Contents output filename;*
- PAGE= *HTML Table of Pages output filename;*
- FRAME= *HTML frame output filename;*

ODS HTML file types

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This yields one single-frame HTML output file consisting of the output content of the procedure.

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BODY= *HTML body output filename;*

Procedure output

ODS HTML file types

- CONTENTS= *HTML Table of Contents output filename;*

This yields one single-frame HTML output file consisting of a Table of Contents for the output of the procedure.

ODS HTML file types

CONTENTS= *HTML Table of Contents output filename;*

**Table of Contents for
Procedure output**

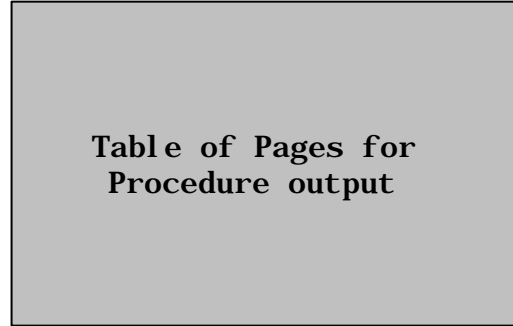
ODS HTML file types

- **PAGE= HTML Table of Pages output filename;**

This yields one single-frame HTML output file consisting of a Table of Pages for the output of the procedure.

ODS HTML file types

PAGE= HTML Table of Pages output filename;



ODS HTML file types

- **FRAME= HTML frame output filename;**

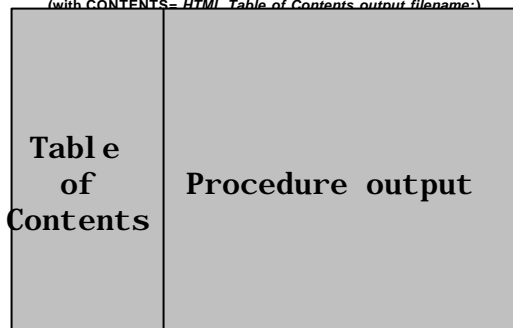
This yields one multi-frame HTML output file. The frames consist of:

- the output content of the procedure (the **BODY= frame**), AND
- a Table of Contents (the **CONTENTS= frame**)
- OR
- a Table of Pages (the **PAGE= frame**)
- OR
- a Table of Contents AND a Table of Pages (**CONTENTS= & PAGES=**)

If you use a **FRAME=** file type, you *must* also use either a **CONTENTS=** file type, a **PAGE=** file type, or both.

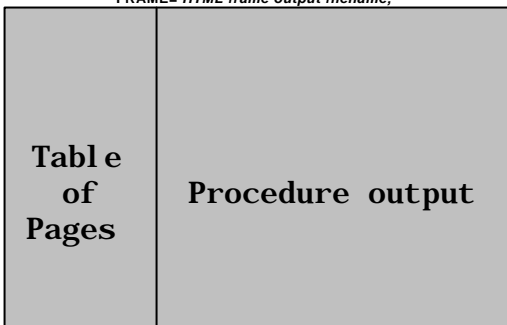
ODS HTML file types

FRAME= HTML frame output filename;
(with **CONTENTS= HTML Table of Contents output filename;**)



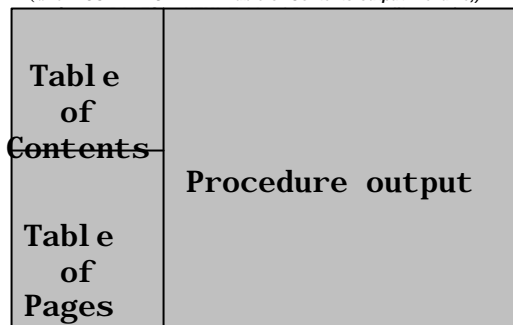
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Problems

There are a few problems!

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We want to be able to create a full and unified multiple-procedure Table of Contents when we are creating reporting systems from more than one procedure's output, and when each procedure produces complex (bygroup) output .

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PROBLEM2:

There is just not enough room on the screen to display a meaningful Table of Contents as well as a sophisticated report output.

PROBLEM3:

We want to be able to create a fully navigable system so that we can travel from the Table of Contents to multiple procedure outputs, and back again. This is the true nature of a HyperText Markup Language display system.

Answers

As is usually the case when working with SAS, there are also answers to go with the problems!

Sample Reporting System

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- We have to report on countrywide as well as bystate data.
- We have to report on a number of different categorizations of the data.
- We want to be able to go back and forth between months, states and major breakdown categories.

Contents of data set: yeartoc

```
monyr, monyrexpr, monyrrhtm
14731 May, 2000 <A HREF='2000-05/_toc.htm'>May, 2000</A>
14701 April, 2000 <A HREF='2000-04/_toc.htm'>April, 2000</A>
14670 March, 2000 <A HREF='2000-03/_toc.htm'>March, 2000</A>
14641 February, 2000 <A HREF='2000-02/_toc.htm'>February, 2000</A>
14610 January, 2000 <A HREF='2000-01/_toc.htm'>January, 2000</A>
14579 December, 1999 <A HREF='1999-12/_toc.htm'>December, 1999</A>
14549 November, 1999 <A HREF='1999-11/_toc.htm'>November, 1999</A>
14518 October, 1999 <A HREF='1999-10/_toc.htm'>October, 1999</A>
14488 September, 1999 <A HREF='1999-09/_toc.htm'>September, 1999</A>
14457 August, 1999 <A HREF='1999-08/_toc.htm'>August, 1999</A>
14426 July, 1999 <A HREF='1999-07/_toc.htm'>July, 1999</A>
14396 June, 1999 <A HREF='1999-06/_toc.htm'>June, 1999</A>
```

Creation of the TABULATE Report Tables – Hot Link TITLE Lines

```
*-----;
%let t4a = <H4><A HREF="&my3d._toc.htm">
          Month Table of Contents</A>;
%let t4b = <A HREF='.../_yeartoc.htm'>
          Year Table of Contents</A></H4>;
*-----;
```

Creation of the TABULATE Report Tables – ALL STATES Macro – 1

```
*-----;
%macro taball(body=, ...);
  ods html newfile = proc
        body = "&body.htm"
        stylesheet = "_tab.css"
              (url="_tab.css");
title1 "<H3>AUTOMOBILE Book of Business &t_sp
ALL STATES (&by1)</H3>";
title2 "<H3>New **QUOTES** for &my3 &t_sp as of:
&today</H3>";
title3 "<H4>(all pages should be printed in landscape
format)<H4>";
title4 "&t4a &t_sp &t4b";
*-----;
```

Creation of the TABULATE Report Tables – ALL STATES Macro – 2

```
*-----;
proc tabulate data=source missing
              format=comma9.0;
          class &body ...
          table &body,
              (rest of TABULATE code)
run;
%mend;
*-----;
```

Creation of the TABULATE Report Tables – By STATE Macro – 1

```
*-----;
%macro tabxst(body=, ...);
  ods html newfile = bygroup
        body = "&body.1.htm"
        stylesheet = (url="_tab.css");
title1 "<H3>AUTOMOBILE Book of Business &t_sp
STATE: #byval(state)(&by1)</H3>";
title2 "<H3>New **QUOTES** for &my3 &t_sp as of:
&today</H3>";
title3 "<H4>(all pages should be printed in landscape
format)<H4>";
title4 "&t4a &t_sp &t4b";
*-----;
```

Creation of the TABULATE Report Tables – By STATE Macro – 2

```
*-----;
proc tabulate data=source missing
              format=comma9.0;
          by state;
          class &body ...
          table &body,
              (rest of TABULATE code)
run;
%mend;
*-----;
```

Creation of the TABULATE Report Tables – Macro Calls

```
*-- ALL STATES COMBINED -----;
%taball(body=over, ...)
%taball(body=cnc, ...)
%taball(body=tier, ...)
%taball(body=bus, ...)
%taball(body=blend, ...)
%taball(body=sm, ...)
%taball(body=sus, ...)

*-- BY STATE -----;
%tabxst(body=over, ...)
%tabxst(body=cnc, ...)
%tabxst(body=tier, ...)
%tabxst(body=bus, ...)
%tabxst(body=blend, ...)
%tabxst(body=sm, ...)
%tabxst(body=sus, ...)
*-----;
```

Creation of the TABULATE Report Tables

At this point, HTML files exist with the following names:

over.htm,	over1.htm,	over2.htm,	over3.htm	...
cnc.htm,	cnc1.htm,	cnc2.htm,	cnc3.htm	...
tier.htm,	tier1.htm,	tier2.htm,	tier3.htm	...
bus.htm,	bus1.htm,	bus2.htm,	bus3.htm	...
blend.htm,	blend1.htm,	blend2.htm,	blend3.htm	...
sm.htm,	sm1.htm,	sm2.htm,	sm3.htm	...
sus.htm,	sus1.htm,	sus2.htm,	sus3.htm	...

Creation of the TABULATE Report Tables

At this point, HTML files exist with the following names:

over.htm,	over1.htm,	over2.htm,	over3.htm	...
cnc.htm,	cnc1.htm,	cnc2.htm,	cnc3.htm	...
tier.htm,	tier1.htm,	tier2.htm,	tier3.htm	...
bus.htm,	bus1.htm,	bus2.htm,	bus3.htm	...
blend.htm,	blend1.htm,	blend2.htm,	blend3.htm	...
sm.htm,	sm1.htm,	sm2.htm,	sm3.htm	...
sus.htm,	sus1.htm,	sus2.htm,	sus3.htm	...

Not very useful. ... Let's rename the subscripted files.

Renaming Algorithm for the TABULATE Report HTML Files - 1

```
proc sql noprint;
  create table states as
  select distinct state
  from source
  order by state;

  select count(*),
         state
  into :mcount,
       :mstates separated by '#'
  from states;
quit;
*-----;
```

Renaming Algorithm for the TABULATE Report HTML Files – 2

mcount - contains the number of states

mstates - contains a #-delimited list of the states

Assuming there are 51 states being reported (including DC),

mcount = 51

mstates = AK #AL #AR #AZ #CA #CO #CT #DC #DE #FL # ... #W #W V #W Y

Renaming Algorithm for the TABULATE Report HTML Files – 3

```
%macro names;
  %do m=1 %to &mcount;
    %let st = %scan(&mstates,&m,#);
    %if %sysfunc(fileexist(over&st..htm))
    %then %do;
      %sysexec rm over&st..htm;
      %sysexec rm cnc&st..htm;
      ...
      %sysexec rm tier&st..htm;
    %sysexec mv over&st..htm over&st..htm;
    %sysexec mv cnc&st..htm cnc&st..htm;
    ...
    %sysexec mv tier&st..htm tier&st..htm;
  %end;
%end;
%mend names;
```

Renaming Algorithm for the TABULATE Report HTML Files – 4

Now, the HTML files have meaningful names, which are used in the next, and LAST, step.

```
over1.htm becomes overAK.htm
over2.htm becomes overAL.htm
...
over50.htm becomes overWV.htm
over51.htm becomes overWY.htm
...
...

sus1.htm becomes susAK.htm
sus2.htm becomes susAL.htm
...
sus50.htm becomes susWV.htm
sus51.htm becomes susWY.htm
```

Creation of the Month Table of Contents – 1

```
*-----;
ods html body = "&my3d._toc.htm";
*-----;
title1 "<H3>AUTOMOBILE Book of Business &t_sp
--MONTH TABLE OF CONTENTS---</H3>";
title2 "<H3>New **QUOTES** for &my3 &t_sp
as of: &today</H3>";
title3 "<H4>*** Click on any state-category
combination to go to that page. ***</H4>";
title4 "<H4><A HREF='../_yeartoc.htm'> Year Table of
Contents</A></H4>";
run;
*-----;
```

Creation of the Month Table of Contents – 2

```
data toc;
length state over cnc tier bus blend sm sus $ 100;
label state = '00'x
over = '\\Overall'
cnc = 'by\Comp\NonComp'
tier = 'by\Tier'
bus = 'by\Business'
blend = 'by\Blend'
sm = 'by\Single\Multiple'
sus = 'by\Seg\Unseg';

state = 'ALL STATES';
over = "<A HREF='over.htm'> ALL-OVER </A>";
cnc = "<A HREF='cnc.htm'> ALL-CNC </A>";
tier = "<A HREF='tier.htm'> ALL-TIER </A>";
bus = "<A HREF='bus.htm'> ALL-BUS </A>";
blend = "<A HREF='blend.htm'> ALL-BLEND </A>";
sm = "<A HREF='sm.htm'> ALL-SM </A>";
sus = "<A HREF='sus.htm'> ALL-SUS </A>";
output;
```

Creation of the Month Table of Contents – 3

```
%do m=1 %to &count;
state = "%scan(&mstates,&m,#)";
over = "<A HREF='over" || trim(state) || ".htm'">"
|| trim(state) || "-OVER </A>";
cnc = "<A HREF='cnc" || trim(state) || ".htm'">"
|| trim(state) || "-CNC </A>";
tier = "<A HREF='tier" || trim(state) || ".htm'">"
|| trim(state) || "-TIER </A>";
bus = "<A HREF='bus" || trim(state) || ".htm'">"
|| trim(state) || "-BUS </A>";
blend = "<A HREF='blend" || trim(state) || ".htm'">"
|| trim(state) || "-BLEND </A>";
sm = "<A HREF='sm" || trim(state) || ".htm'">"
|| trim(state) || "-SM </A>";
sus = "<A HREF='sus" || trim(state) || ".htm'">"
|| trim(state) || "-SUS </A>";
output;
%end;
run;
```

Creation of the Month Table of Contents – 4

```
for &m = 1, %scan(&mstates,&m,#) = AK
state = "AK";
over = "<A HREF='overAK.htm'>AK-OVER </A>";
cnc = "<A HREF='cncAK.htm'>AK-CNC </A>";
tier = "<A HREF='tierAK.htm'>AK-TIER </A>";
bus = "<A HREF='busAK.htm'>AK-BUS </A>";
blend = "<A HREF='blendAK.htm'>AK-BLEND </A>";
sm = "<A HREF='smAK.htm'>AK-SM </A>";
sus = "<A HREF='susAK.htm'>AK-SUS </A>";
```

Creation of the Month Table of Contents – 5

```
*-----;
proc print data=toc split='\\';
id state;
run;
*-----;
ods html close;
```

Getting near The End

This slide intentionally left blank.

Conclusions

ODS can create powerful HTML snapshots, but with limited screen-to-screen navigational ability.

Fully navigational reporting systems can be easily created by modifying data values to include HTML HREF data.

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Sophisticated stand-alone Tables of Contents can be easily created that do not take space away from the report screens.

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Fully navigational reporting systems can be easily created by modifying data values to include HTML HREF data.

ODS can create rudimentary Tables of Contents that use valuable screen real estate.

Sophisticated stand-alone Tables of Contents can be easily created that do not take space away from the report screens.

ODS is an EXTREMELY powerful and productive addition to the SAS family of reporting tools.

With a little effort, you can make it even MORE so!

The (obligatory) Acknowledgement

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That's me

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The End

Thank You !

Your turn

Q & A

(if there's any time left ...)