The **Basics** of ODS

By Randy Roller

What is ODS

ODS = Output Delivery System

Have you used ODS?

ODS has been part of SAS since Version 8

ODS in Action

Editor - Untitled1 *

```
proc print data=sashelp.class;
run;
```

Output - (Untitled)

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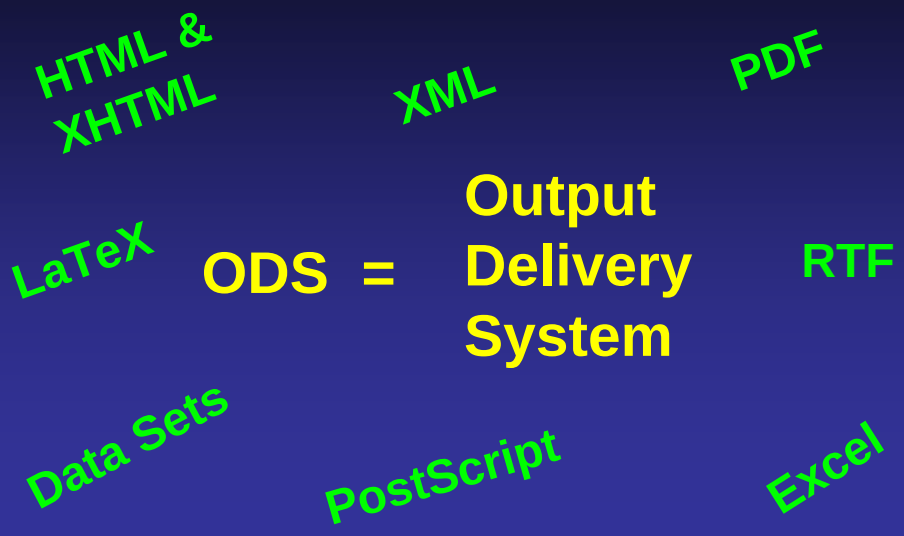
Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0
4	Carol	F	14	62.8	102.5
5	Henry	M	14	63.5	102.5
6	James	M	12	57.3	83.0
7	Jane	F	12	59.8	84.5
8	Janet	F	15	62.5	112.5
9	Jeffrey	M	13	62.5	84.0
10	John	M	12	59.0	99.5
11	Joyce	F	11	51.3	50.5
12	Judy	F	14	64.3	90.0
13	Louise	F	12	56.3	77.0
14	Mary	F	15	66.5	112.0
15	Philip	M	16	72.0	150.0
16	Robert	M	12	64.8	128.0
17	Ronald	M	15	67.0	133.0
18	Thomas	M	11	57.5	85.0
19	William	M	15	66.5	112.0

Why was it Created

"… The Output Delivery System was created to enable SAS customers to generate more reports with new features then could be generated via the old-fashioned listing output. …"

Kevin D. Smith

Output Types



Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0
4	Carol	F	14	62.8	102.5

```
Proc Tabulate data=sashelp.class;
   Class age sex;
   Table age, sex;
run;
```

	Sex	
	F	M
	N	N
Age		
11	1.00	1.00
12	2.00	3.00
13	2.00	1.00
14	2.00	2.00
15	2.00	2.00
16	.	1.00

Simple format of ODS

```
ods XXXX [file=<filename>];

    Proc Tabulate data=sashelp.class;
      Class age sex;
      Table age, sex;
    run;

ods XXXX close;
```

Listing Output

```
ods listing;

    Proc Tabulate data=sashelp.class;
      Class age sex;
      Table age, sex;
    run;

ods listing close;
```

Listing Output

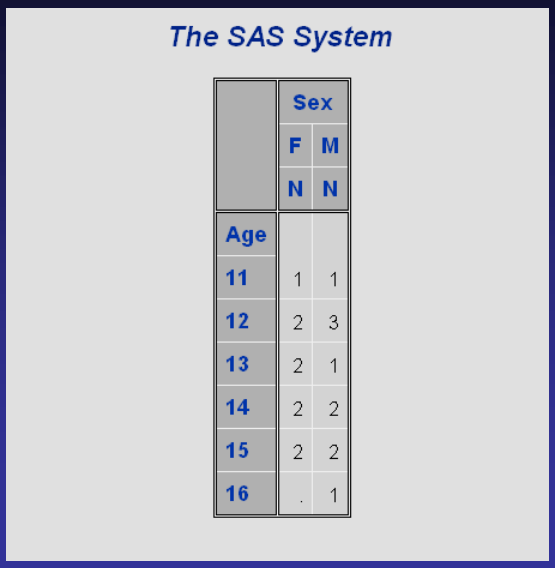
```
ods listing file='testoutput.txt';

    Proc Tabulate data=sashelp.class;
      Class age sex;
      Table age, sex;
    run;

ods listing close;
```

Creating HTML Output

```
ods html;

    Proc Tabulate data=sashelp.class;
      Class age sex;
      Table age, sex;
    run;

ods html close;
```

Creating HTML Output

SAS Results Viewer Window



Creating HTML Output

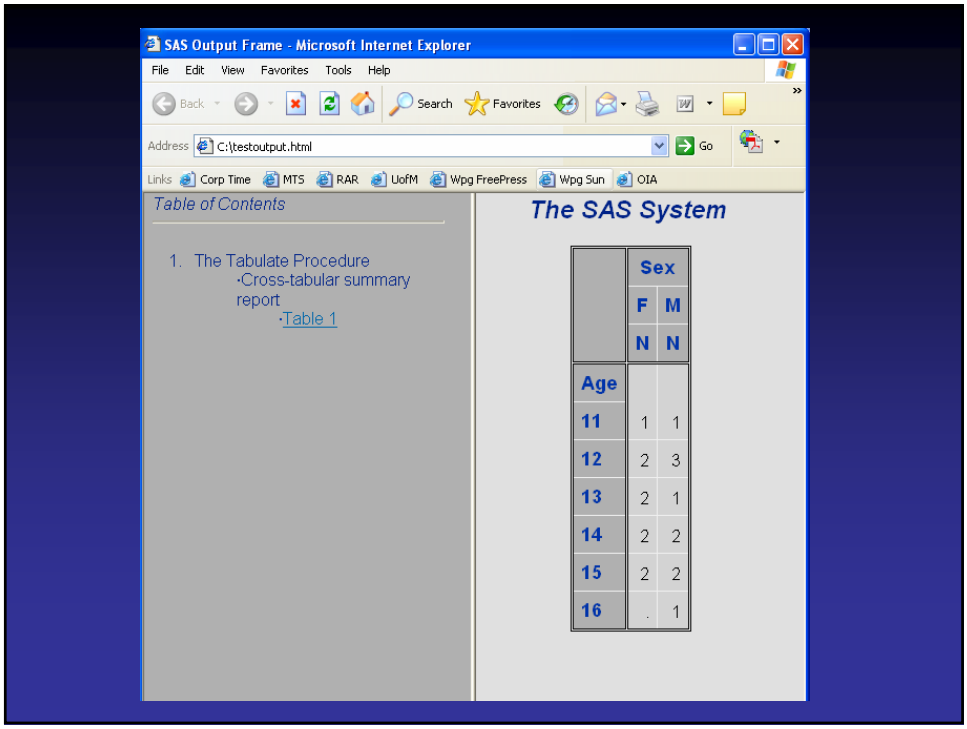
```
ods html file='testoutput.html';

Proc Tabulate data=sashelp.class;
  Class age sex;
  Table age, sex;
run;

ods html close;
```

Creating HTML Output
Within A Frame

- File=
  - Controls the body of the report
- Contents=
  - Controls the table of contents of the report
- Frame=
  - Controls the wrapper file

Creating HTML Output

```
ods html file='body.html'
         contents='contents.html'
         frame='testoutput.html';
   Proc Tabulate data=sashelp.class;
     Class age sex;
     Table age, sex;
   run;
ods html close;
```



Creating PDF Output

```
ods pdf file='testoutput.pdf';

    Proc Tabulate data=sashelp.class;
      Class age sex;
      Table age, sex;
    run;

ods pdf close;
```

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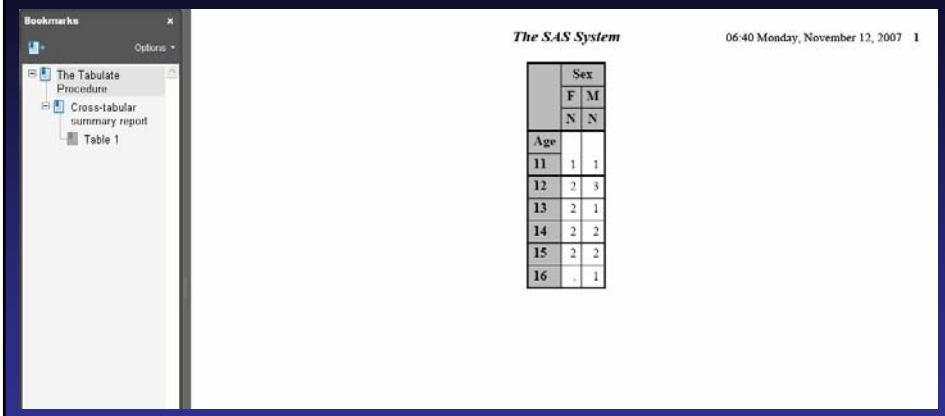
	Sex	
	F	M
	N	N
Age		
11	1	1
12	2	3
13	2	1
14	2	2
15	2	2
16	.	1

Creating PDF Output

```
ods pdf file='testoutput.pdf'
                    Contents = yes;
  Proc Tabulate data=sashelp.class;
    Class age sex;
    Table age, sex;
  run;
ods pdf close;
```



	Sex	
	F	M
	N	N
Age		
11	1	1
12	2	3
13	2	1
14	2	2
15	2	2
16	.	1

Creating Microsoft Excel Output

```
ods        file='testoutput.xls';

    Proc Tabulate data=sashelp.class;
       Class age sex;
       Table age, sex;
    run;

ods        close;
```

Creating Microsoft Excel Output

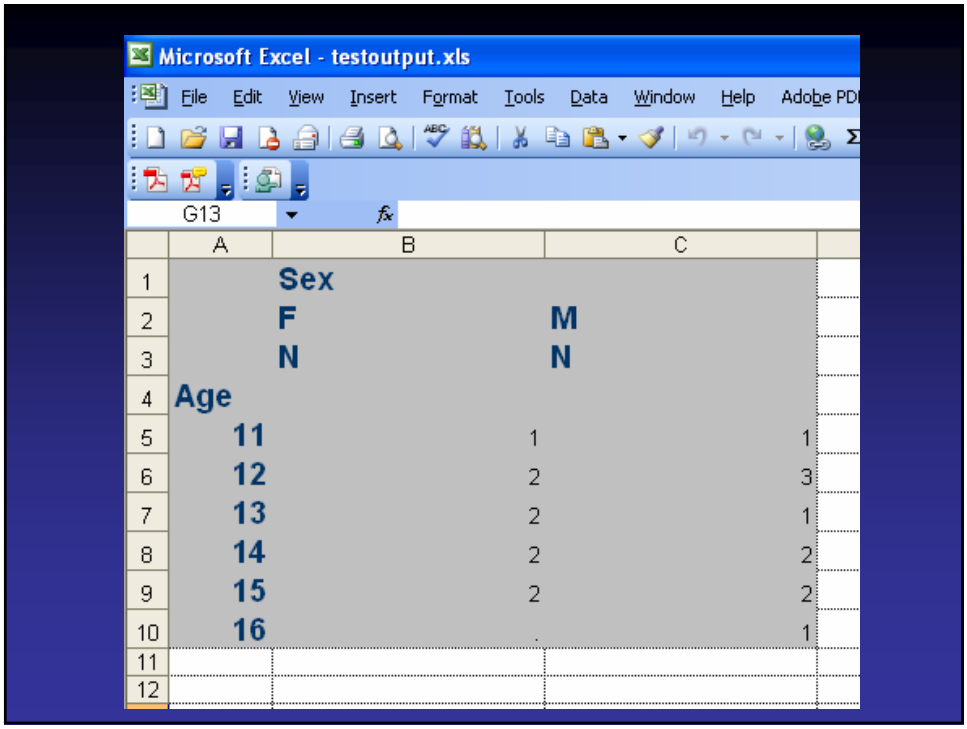
- Excel destination is created by a tagset
  - A tagset tells the Markup destination what text should be printed for each part of the report

Creating Microsoft Excel Output

```
ods tagsets.excelxp
                file='testoutput.xls';

  Proc Tabulate data=sashelp.class;
    Class age sex;
    Table age, sex;
  run;

ods tagsets.excelxp close;
```



Creating Microsoft Excel Output

```
ods tagsets.excelxp
        file='testoutput.xls';
```

- If Multiple tables
  - SAS will put each table in a separate sheet

OR

Creating Microsoft Excel Output

```
ods tagsets.excelxp
        file='testoutput.xls'
 options( sheet_interval = 'none' );
```

- If Multiple tables
  - SAS will put all tables on a single sheet

Creating Microsoft Excel Output

Other Options you can control

- Worksheet Generation
- Tables of content
- Table and title spacing
- Column widths
- Autofiltering
- Formulas
- Formats
- And more …..

Creating Listing, HTML, & PDF Output

```
ods listing file='testoutput.txt'
ods html file='testoutput.html';
ods pdf  file='testoutput.pdf';
    Proc Tabulate data=sashelp.class;
      Class age sex;
      Table age, sex;
    run;
ods listing close;
ods html close;
ods pdf close;
```

Creating Listing, HTML, & PDF Output

```
ods listing file='testoutput.txt'
ods html file='testoutput.html';
ods pdf  file='testoutput.pdf';
    Proc Tabulate data=sashelp.class;
      Class age sex;
      Table age, sex;
    run;
ods _all_ close;
ods listing;
```

Output Types

HTML & XHTML

XML

PDF

LaTeX

ODS = Output Delivery System

RTF

Data Sets

PostScript

Excel

The Basics of ODS

Questions?