SouthEast SAS® Users Group 2008
St. Pete Beach, Florida
October 19-22, 2008

Customized Excel Output Using the Excel Libname

GHSUG 2009-04-24

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Introduction

- Many ways to create Excel output
  - delimited text files
  - ODS HTML
  - ExcelXP tagset
  - DDE (*arghhhh !!!*)
  - Excel libname

- Excel libname can also *read* Excel data
  - no time for that today

Excel Libname – Steps

1. Create customized Excel file
2. Define "named range" in Excel sheet
3. Process SAS data
   - massage into the structure of range created
4. Excel libname
   - clear the Excel named range
   - load the Excel named range
   - done

Not necessary to have Excel on the machine

Excel Libname – Syntax

Typical syntax with addition of <engine name>

```
libname xls <engine-name> physical-file-name;

libname xls excel 'c:\temp\report.xls';
```

- file doesn't exist ?
  - SAS will create

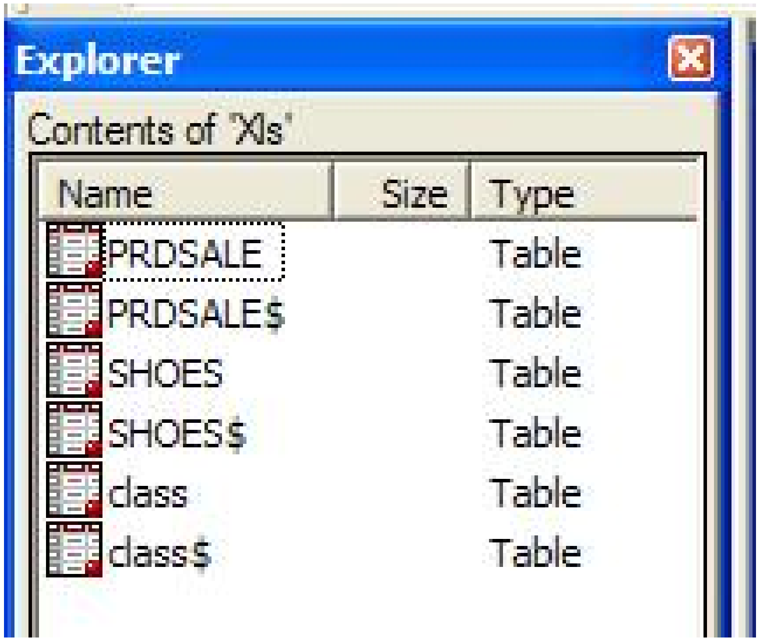
How to Use ?

Excel libname can be used like any other:

```
data xls.class;
  set sashelp.class;
run;
proc copy in    = sashelp
          out   = xls;
  select prdsale shoes;
run;
```

How to Use ?

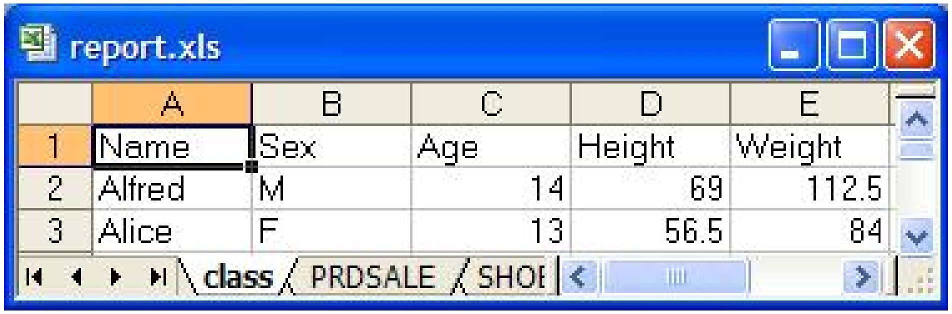
SAS Explorer displays:



Explorer

Contents of 'Xls'

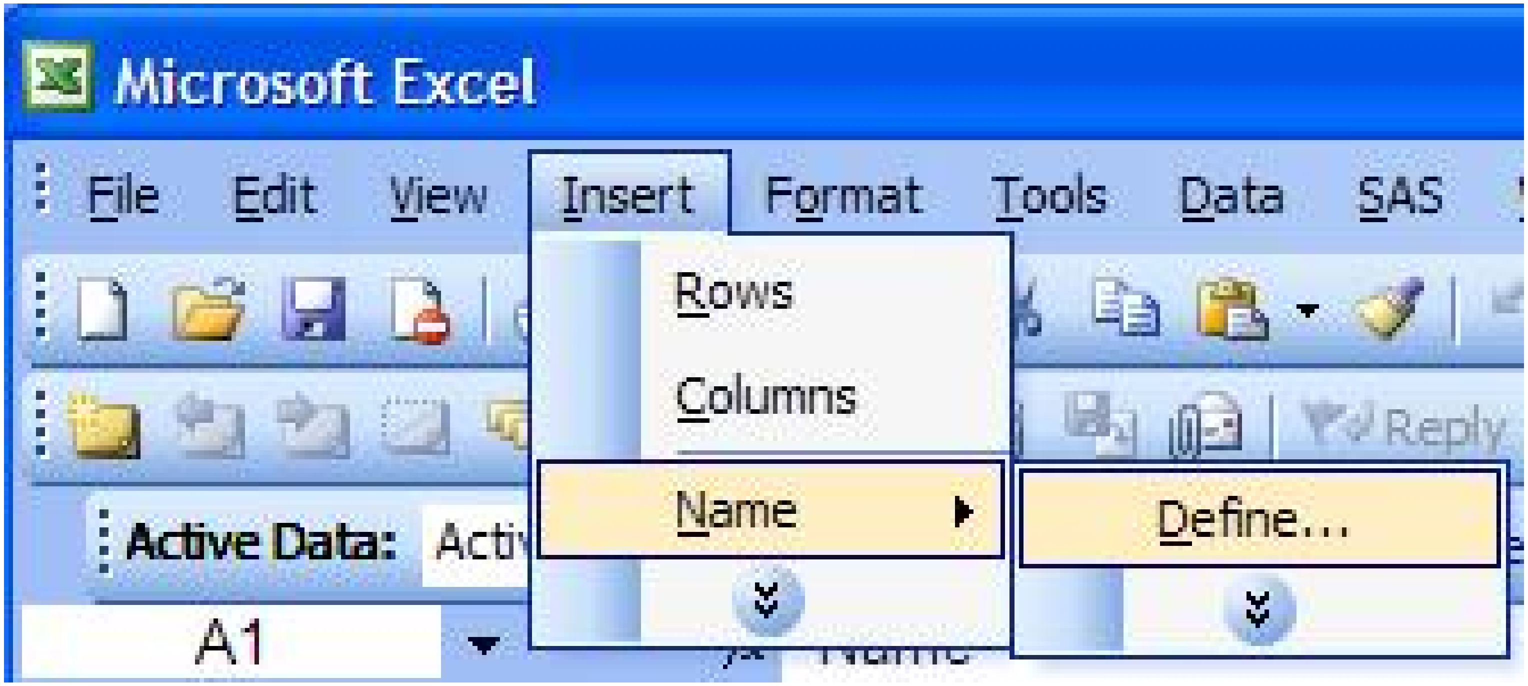
Name	Size	Type
PRDSALE		Table
PRDSALE$		Table
SHOES		Table
SHOES$		Table
class		Table
class$		Table



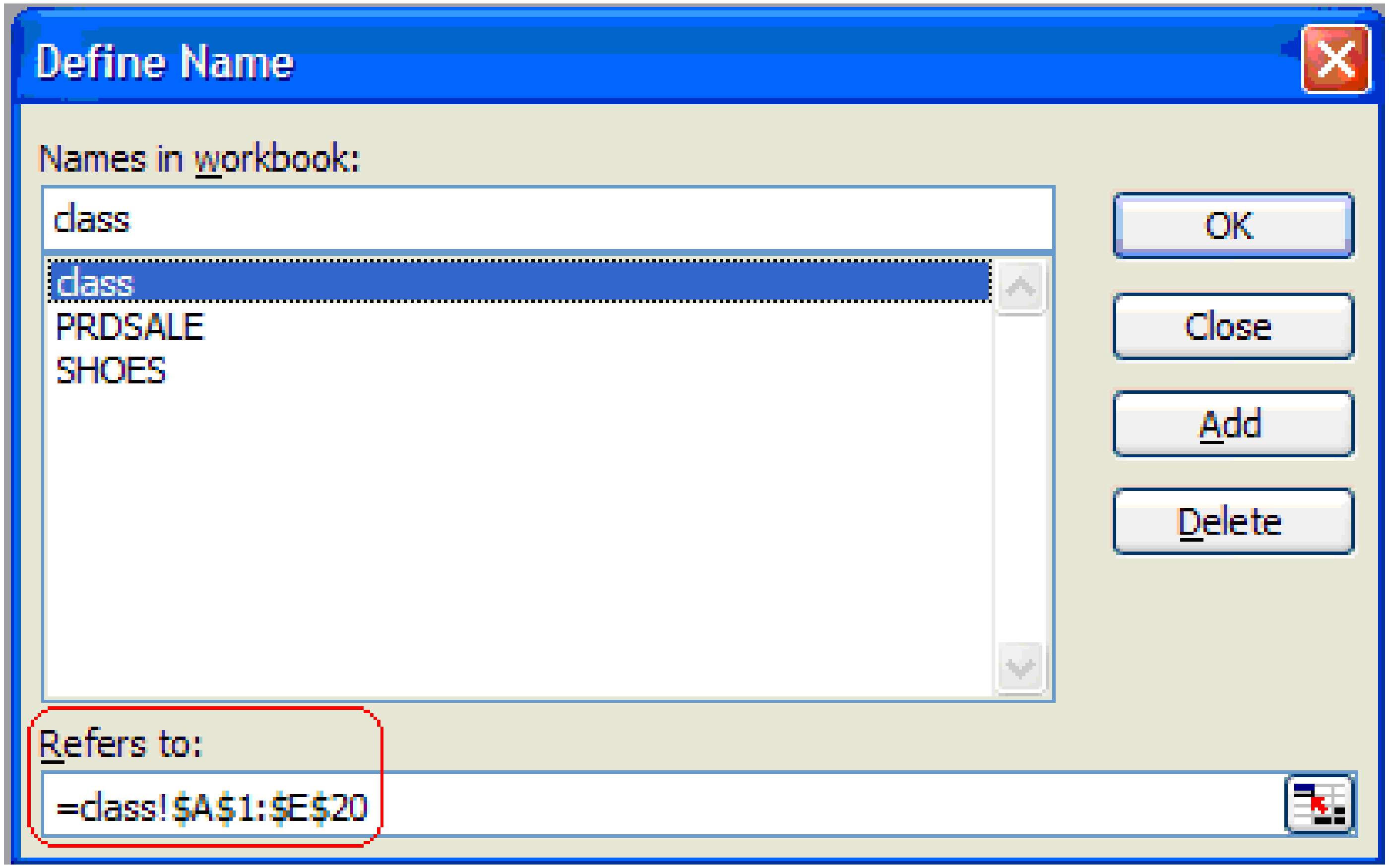
report.xls

	A	B	C	D	E
1	Name	Sex	Age	Height	Weight
2	Alfred	M	14	69	112.5
3	Alice	F	13	56.5	84

Named Ranges



Named Ranges



Names in workbook: class

- class
- PRDSALE
- SHOES

Refers to: =class!$A$1:$E$20

Capabilities / Limitations

Capabilities:

- create workbooks, sheets
- named ranges
  - delete contents, populate, append, read

Limitations:

- formatting
- delete entire workbook, sheets, named ranges
- deal with formulas

Formatted Excel Report

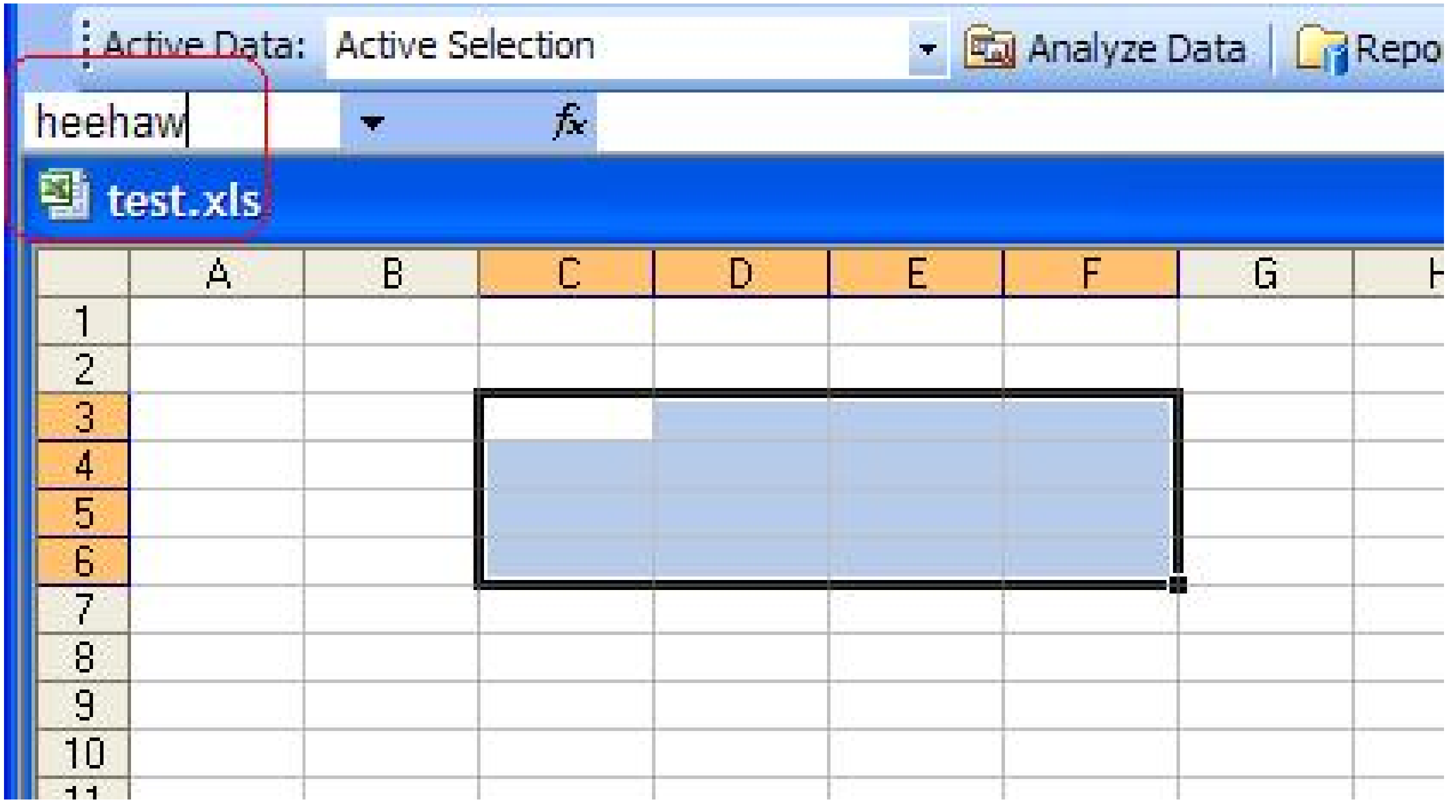
Separate processing from presentation!

- SAS crunches data
- Excel to develop pretty, useful output

- create an Excel "template"
- populate the "template" with SAS

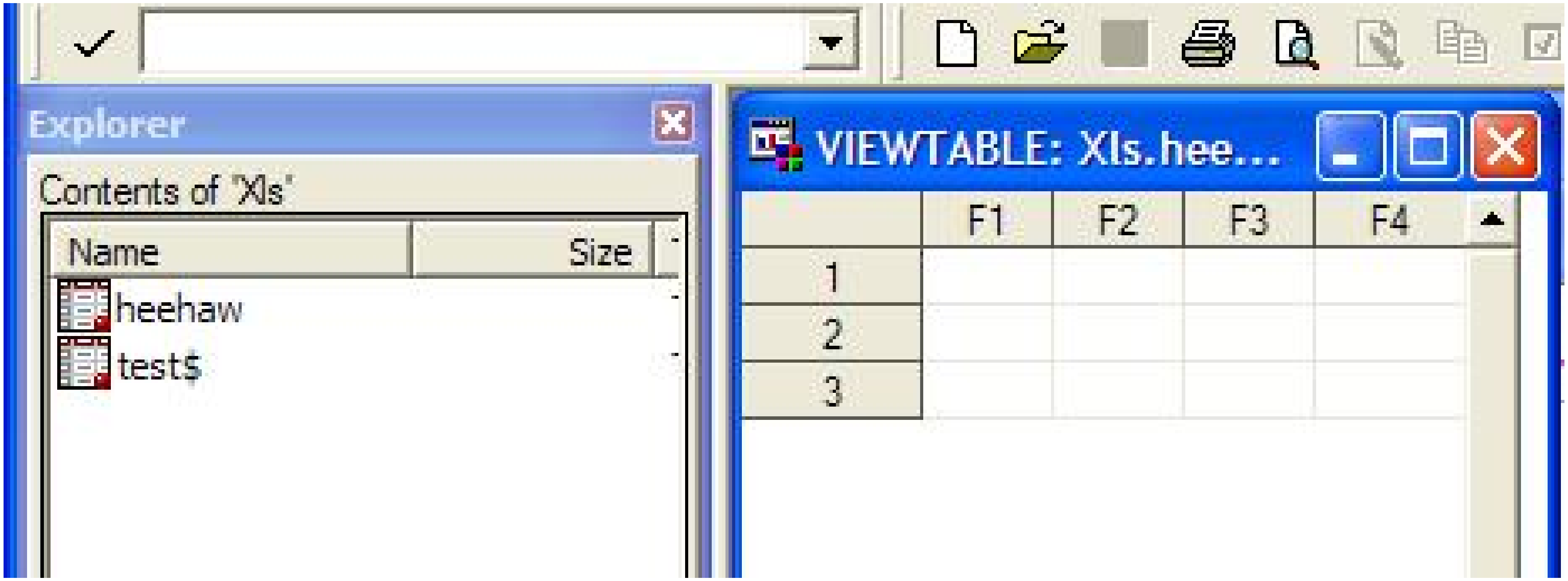
Defining Named Ranges

- could use Insert, Name, Define
- easier to use mouse



Defining Named Ranges

```
libname xls excel 'c:\temp\test.xls' ver=2003;
```



Contents of 'Xls'

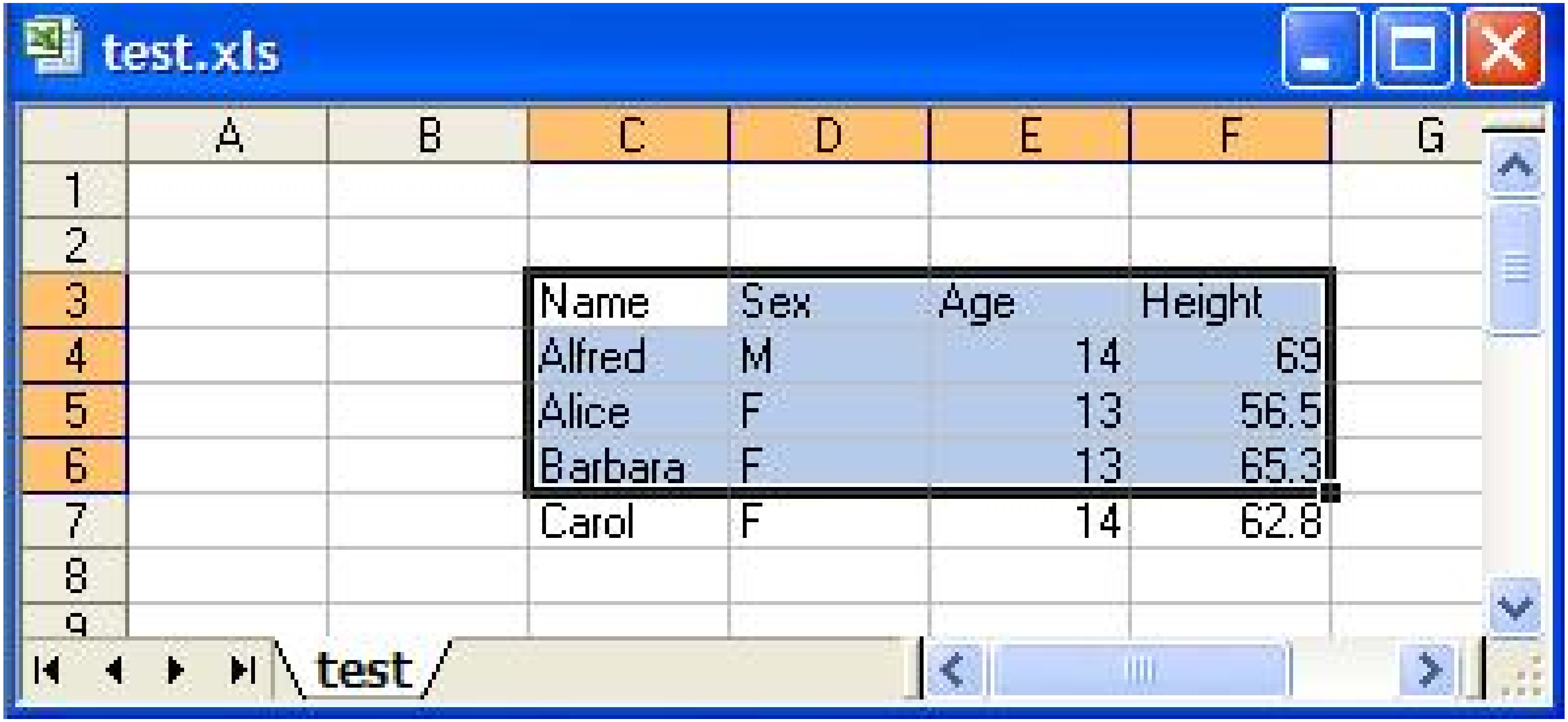
Name	Size
heehaw	
test$	

	F1	F2	F3	F4
1				
2				
3				

Populate Named Range

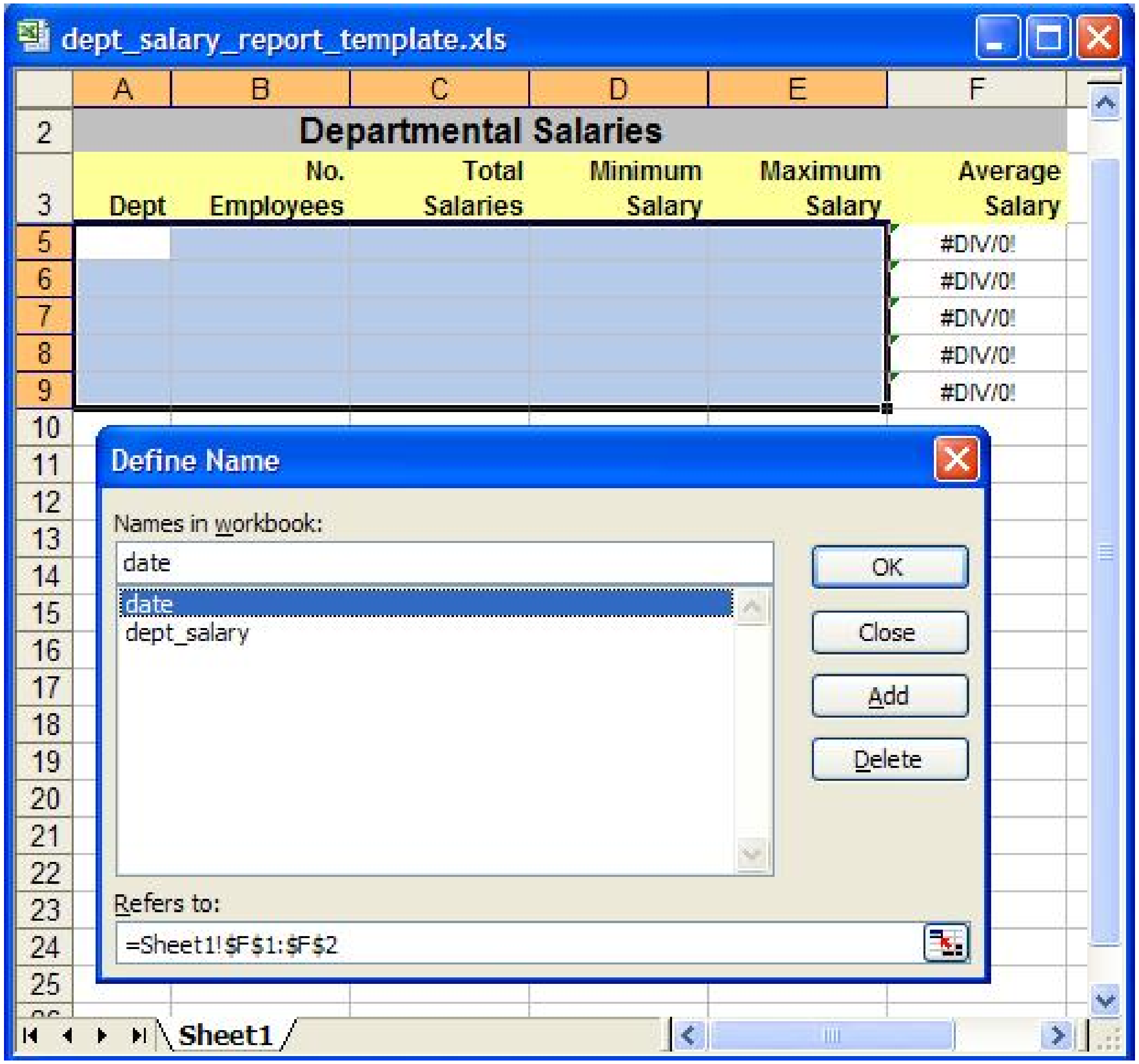
```
proc datasets lib = xls nolist;
    delete heehaw;
quit;

data xls.heehaw;
      set sashelp.class ( obs  = 4
              keep = name sex age height );
run;

libname xls clear;  * very important !! ;
```

Populate Named Range



	A	B	C	D	E	F	G
1							
2							
3			Name	Sex	Age	Height	
4			Alfred	M	14	69	
5			Alice	F	13	56.5	
6			Barbara	F	13	65.3	
7			Carol	F	14	62.8	
8							
9							

Formatted Report



	A	B	C	D	E	F
2	Departmental Salaries					
3	Dept	No. Employees	Total Salaries	Minimum Salary	Maximum Salary	Average Salary
5						#DIV/0!
6						#DIV/0!
7						#DIV/0!
8						#DIV/0!
9						#DIV/0!

Define Name

Names in workbook: date

- date
- dept_salary

Refers to: =Sheet1!$F$1:$F$2

Formatted Report

```
options noxwait xsync;
x 'copy c:\temp\dept_salary_report_template.xls
  c:\temp\dept_salary_report.xls';

libname xls excel 'c:\temp\dept_salary_report.xls'
  ver=2003;

proc datasets lib = xls nolist;
  delete date dept_salary;    * case sensitive ;
quit;
data xls.date;
  format t yymmddd10.;
  t = today();
run;
```

Formatted Report

```
* RETAIN used to ensure variables are in
  correct order for Excel report;

data xls.dept_salary;
  retain dept employees total_salary
  min_salary max_salary;
  set dept_salaries_sum;
run;

libname xls clear;
```

Formatted Report

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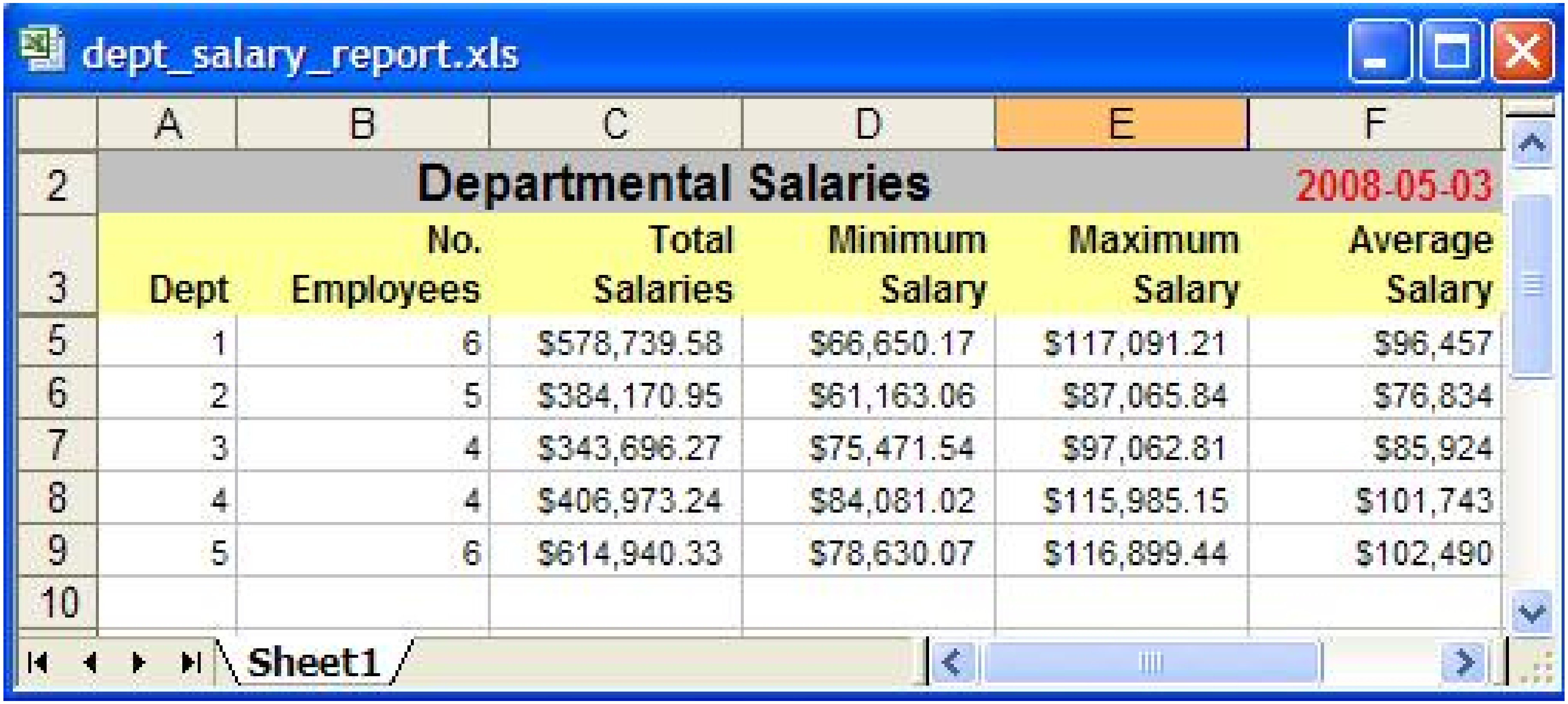


Departmental Salaries 2008-05-03

Dept	No. Employees	Total Salaries	Minimum Salary	Maximum Salary	Average Salary
1	6	$578,739.58	$66,650.17	$117,091.21	$96,457
2	5	$384,170.95	$61,163.06	$87,065.84	$76,834
3	4	$343,696.27	$75,471.54	$97,062.81	$85,924
4	4	$406,973.24	$84,081.02	$115,985.15	$101,743
5	6	$614,940.33	$78,630.07	$116,899.44	$102,490

Appending Pivot Data

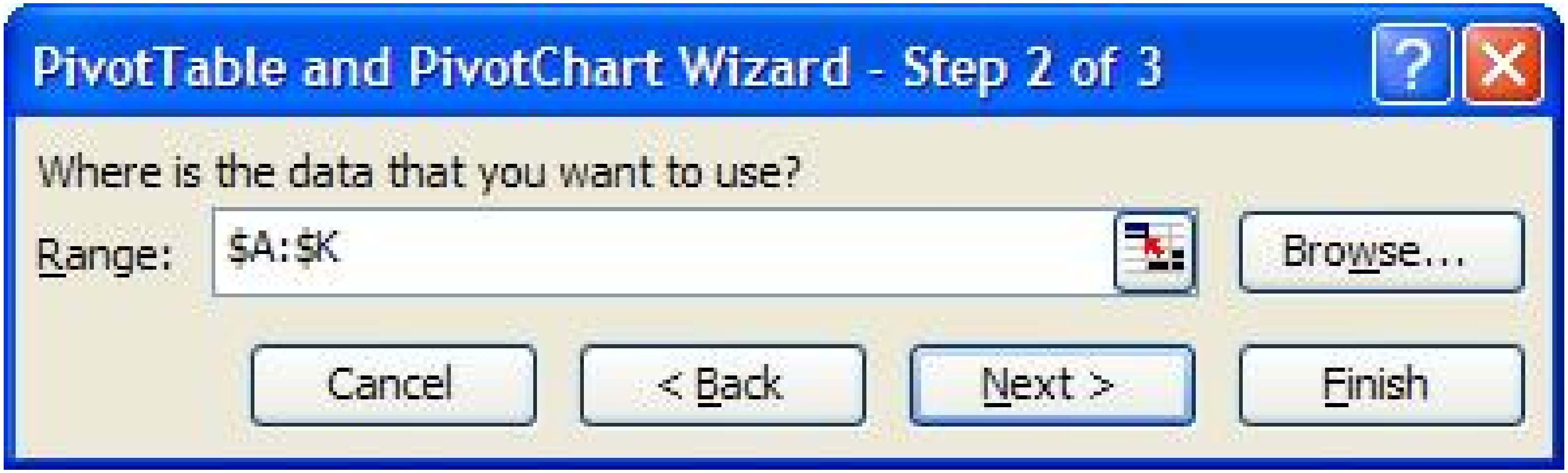
- not all reports are created from scratch
- monthly process
  - calculates a number of metrics
  - appends it to previously existing Excel data
  - refresh the pivot sourced from the data

Appending Pivot Data

```
libname xls excel 'c:\temp\append.xls' ver=2003;

proc datasets lib = xls nolist;
  delete output;
quit;

data xls.output;
  set sashelp.prdsale
      ( where = ( put(month,yymmn6.) ne '199412' ));
  mm = month(month);
run;

libname xls clear;
```

Appending Pivot Data

- open append.xls when initial load completes
- use the PivotTable wizard to define:
  - source of the PivotTable data
  - dimension & fact variables


PivotTable and PivotChart Wizard - Step 2 of 3

Where is the data that you want to use?

Range: $A:$K

Appending Pivot Data

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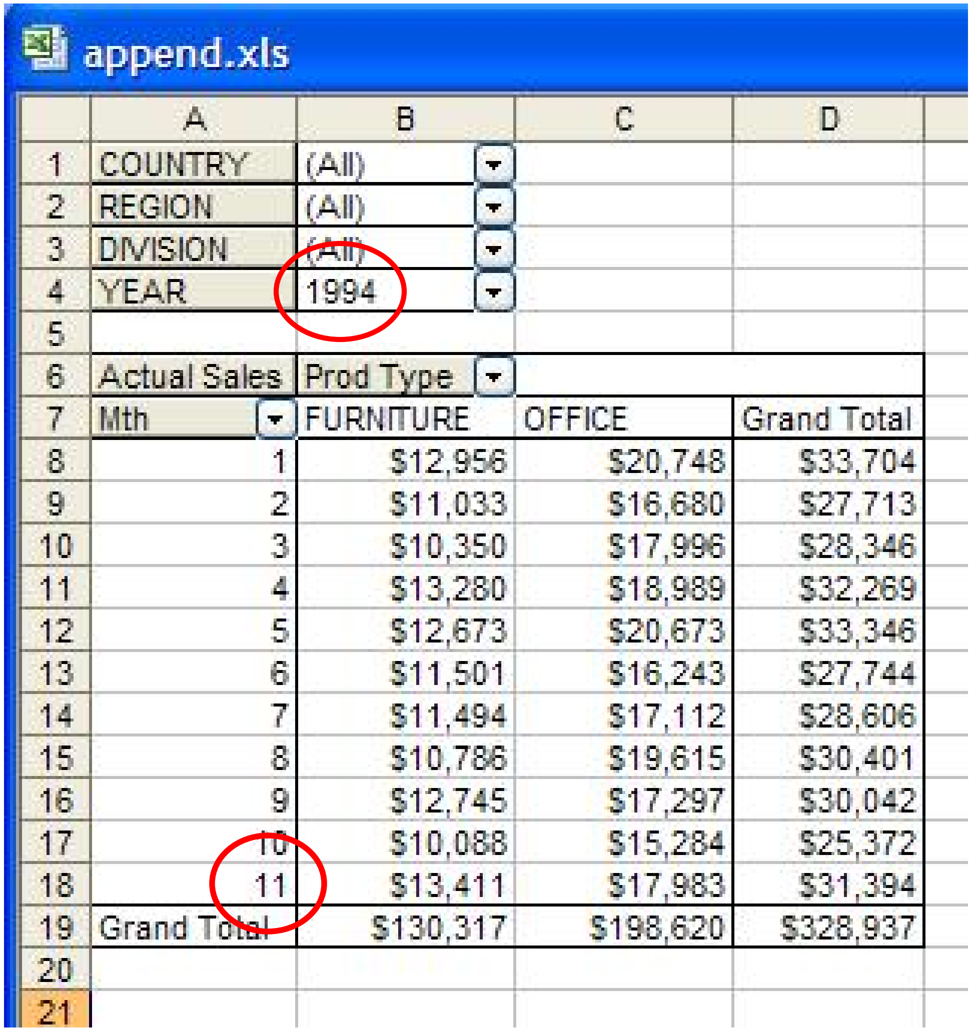


append.xls

	A	B	C	D
1	COUNTRY	(All)		
2	REGION	(All)		
3	DIVISION	(All)		
4	YEAR	1994		
5				
6	Actual Sales	Prod Type		
7	Mth	FURNITURE	OFFICE	Grand Total
8	1	$12,956	$20,748	$33,704
9	2	$11,033	$16,680	$27,713
10	3	$10,350	$17,996	$28,346
11	4	$13,280	$18,989	$32,269
12	5	$12,673	$20,673	$33,346
13	6	$11,501	$16,243	$27,744
14	7	$11,494	$17,112	$28,606
15	8	$10,786	$19,615	$30,401
16	9	$12,745	$17,297	$30,042
17	10	$10,088	$15,284	$25,372
18	11	$13,411	$17,983	$31,394
19	Grand Total	$130,317	$198,620	$328,937
20				
21				

Appending Pivot Data

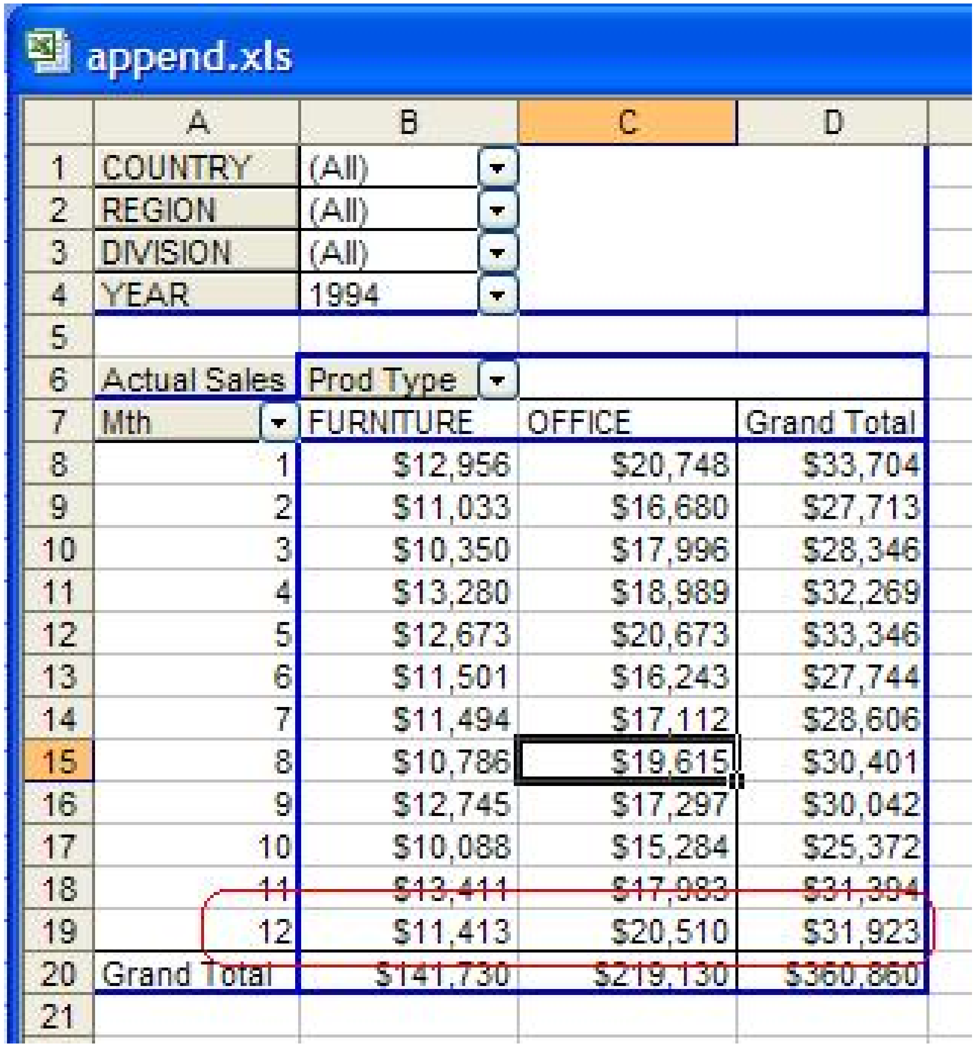
```
libname xls excel 'c:\temp\append.xls' scan_text = no
  ver=2003;

data this_month;
  set sashelp.prdsale
      ( where = ( put(month,yymmn6.) eq '199412' ));
  mm = month(month);
run;

proc append base = xls.output
            data = this_month;
run;

libname xls clear;
```

Appending Pivot Data



append.xls

	A	B	C	D
1	COUNTRY	(All)		
2	REGION	(All)		
3	DIVISION	(All)		
4	YEAR	1994		
5				
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15	8	$10,786	$19,615	$30,401
16	9	$12,745	$17,297	$30,042
17	10	$10,088	$15,284	$25,372
18	11	$13,411	$17,983	$31,394
19	12	$11,413	$20,510	$31,923
20	Grand Total	$141,730	$219,130	$360,860
21				

Odds and Sods

- Excel libname engine options
  - – dslabels=yes, see Online Docs for more
- Excel97 is default
  - – 9.1.3
    - for latest available functionality use VER=2003
  - – 9.2
    - supports Excel 2007 and .xlsx & .xlsb
    - defaults to VER=2007 for .xlsx & .xlsb
- RETAIN *before* the SET to re-order columns

Wrap

- Excel libname engine is versatile
  - Excel need not be installed, eg. servers
  - PC File Server on UNIX
- separates processing from presentation
  - leverage the strengths of each
  - not limited to ODS options

Credits

See the paper:

- Paul Choate and Carol Martel
- Winfried Jakob
- SAS Online Docs

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