Importing Data from Excel into SAS

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Whitehorse SAS Users Group, 11/18/2008

YT SUG

Outline

Many Options for Importing Excel into SAS

Many Options:

- Import Wizard
- `PROC IMPORT`
- `LIBNAME` Statement
- DDE
- via a CSV file
- via a TXT file

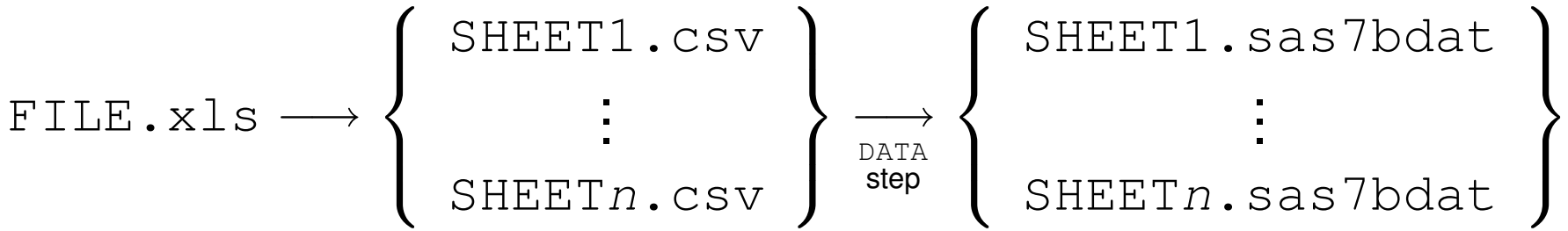
Which is the “best” way?

⇒ Often constrained by programmer abilities, inheritance, etc. But if we can start from scratch or change a project ...

Three Criteria for Defining "Best"

- *Precision*: Are we reading the data correctly?
  - Excel doesn't require each column to have a consistent format.
  - What about "NA" or "-"?
  - What about breaks in the data?
  - What about last observations being summary statistics?
  - I don't trust automated methods, want error messages!
- *Flexibility*: Can it be used in (almost) all situations?
  - Sun and Wong (2005): Doesn't allow for special characters in worksheet names.
  - Rashleigh-Berry (2008): Doesn't allow for spaces in path or file name.
- *Automation*: Can we do everything by pushing F8 (RUN)?

An Almost Optimal Solution

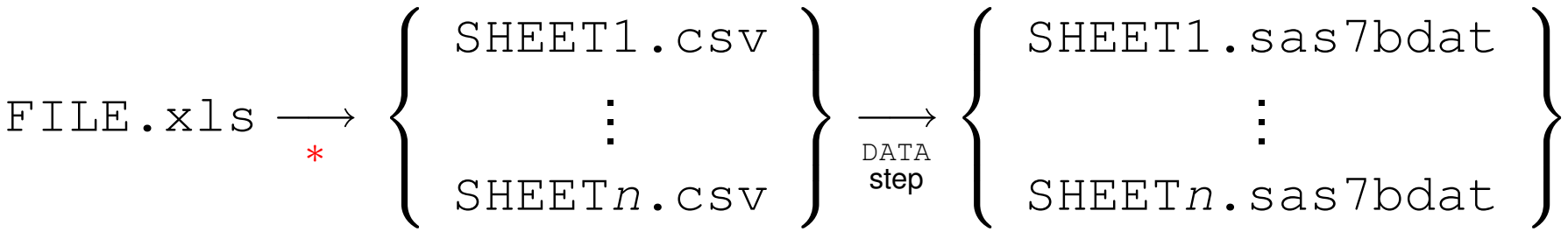


DATA Step (Delwiche and Slaughter (2003), pp. 58-59)

```
DATA reading;
   INFILE 'c:\MyRawData\Books.txt' DLM = '09'x;
   INPUT Name $ Week1 Week2 Week3 Week4 Week5;
RUN;

DATA music;
   INFILE 'c:\MyRawData\Bands.csv' DLM = ',' DSD MISSOVER;
   INPUT BandName :$30. GigDate :MMDDYY10. EightPM NinePM TenPM
     ElevenPM;
RUN;
```

An Almost Optimal Solution



- *Precision*: With a DATA step, written by a programmer.
- *Flexibility*: We can clearly modify it to fit any structure.
- *Automation*: This is not fully automated, because of $*$

Idea: Take care of $*$ via Dynamic Data Exchange.

Dynamic Data Exchange (DDE)

- Def: One application drives another via MS DOS:
  - SAS $\Rightarrow$ Excel/Word/PowerPoint (Vyverman, 2001-2005).
- SAS operates Excel via a `DATA _NULL_` step.
- DDE sometimes a full solution (`%exportToXL`), but here just *part* of solution: XLS $\rightarrow$ CSV/TXT.
  - Common in practice:
    - Van Campen (2007), ExcelXP tagset: XML $\rightarrow$ XLS.
  - Small task, but also important!
    - We don't want to do this manually for 50 worksheets!
- Only available for PC SAS!

%exportFromXL

Solution: `%exportFromXL`.

What does it do?

- Does ***File*** → ***Save As...*** → CSV/TXT.
- Uses DDE.
- Automatically finds all worksheets, exports all/some of them.
- Useful if regularly importing many worksheets into SAS.

Example 1

One Worksheet into SAS via CSV

```
%exportFromXL(
  inpath=&inroot,
  inname=Example 1-7,
  sheets=Class,
  outpath=&outroot );
```

	A	B	C	D	E
1	Name	Sex	Age	Height	Weight
11	John	M	12	59.00	99.50
12	Joyce	F	11	51.30	50.50
13	Judy	F	14	64.30	90.00
14	Louise	F	12	56.30	77.00
15	Mary	F	15	66.50	112.00
16	Philip	M	16	72.00	150.00
17	Robert	M	12	64.80	128.00
18	Ronald	M	15	67.00	133.00
19	Thomas	M		57.50	85.00
20	William	M	15	66.50	112.00
21					
22					
23	MEAN:		13	62.34	100.03
24					
25	MIN:		11	51.30	50.50
26	1st QUAD:		12	58.25	84.25
27	MEDIAN:		14	62.80	99.50
28	3rd QUAD:		15	65.90	112.25
29	MAX:		16	72.00	150.00

Class

Example 1

One Worksheet into SAS via CSV

```
Alice,F,13,56.50,84.00
Barbara,F,13,65.30,98.00
Carol,F,14,62.80,102.50
Henry,M,14,63.50,102.50
James,M,12,57.30,83.00
Jane,F,12,59.80,84.50
Janet,F,15,62.50,112.50
Jeffrey,M,13,62.50,84.00
John,M,12,59.00,99.50
Joyce,F,11,51.30,50.50
Judy,F,14,64.30,90.00
Louise,F,12,56.30,77.00
Mary,F,15,66.50,112.00
Philip,M,16,72.00,150.00
Robert,M,12,64.80,128.00
Ronald,M,15,67.00,133.00
Thomas,M,,57.50,85.00
William,M,15,66.50,112.00
,,,,
,,,,
MEAN:,,13,62.34,100.03
,,,,
MIN:,,11,51.30,50.50
1st QUAD:,,12,58.25,84.25
MEDIAN:,,14,62.80,99.50
3rd QUAD:,,15,65.90,112.25
MAX:,,16,72.00,150.00
```

⇐

	A	B	C	D	E
1	Name	Sex	Age	Height	Weight
11	John	M	12	59.00	99.50
12	Joyce	F	11	51.30	50.50
13	Judy	F	14	64.30	90.00
14	Louise	F	12	56.30	77.00
15	Mary	F	15	66.50	112.00
16	Philip	M	16	72.00	150.00
17	Robert	M	12	64.80	128.00
18	Ronald	M	15	67.00	133.00
19	Thomas	M		57.50	85.00
20	William	M	15	66.50	112.00
21					
22					
23	MEAN:		13	62.34	100.03
24					
25	MIN:		11	51.30	50.50
26	1st QUAD:		12	58.25	84.25
27	MEDIAN:		14	62.80	99.50
28	3rd QUAD:		15	65.90	112.25
29	MAX:		16	72.00	150.00

Class

Example 1

One Worksheet into SAS via CSV

```
%exportFromXL(
  inpath=&inroot,
  inname=Example 1-7,
  sheets=Class,
  outpath=&outroot );

DATA class;
  INFILE "&outroot\Class.csv"
    DSD MISSOVER
    FIRSTOBS=2 OBS=20;
  INPUT name :$10. sex :$2. age
    height weight;
RUN;
```

	A	B	C	D	E
1	Name	Sex	Age	Height	Weight
11	John	M	12	59.00	99.50
12	Joyce	F	11	51.30	50.50
13	Judy	F	14	64.30	90.00
14	Louise	F	12	56.30	77.00
15	Mary	F	15	66.50	112.00
16	Philip	M	16	72.00	150.00
17	Robert	M	12	64.80	128.00
18	Ronald	M	15	67.00	133.00
19	Thomas	M		57.50	85.00
20	William	M	15	66.50	112.00
21					
22					
23	MEAN:		13	62.34	100.03
24					
25	MIN:		11	51.30	50.50
26	1st QUAD:		12	58.25	84.25
27	MEDIAN:		14	62.80	99.50
28	3rd QUAD:		15	65.90	112.25
29	MAX:		16	72.00	150.00

Class

Example 2

One Worksheet into SAS via tab-delimited TXT

```
%exportFromXL(
  inpath=&inroot,
  inname=Example 1-7,
  sheets=Class,
  outpath=&outroot,
  filetype=txt,
  delimiter=tab );

DATA class;
  INFILE "&outroot\Class.txt"
    DSD MISSOVER dlm='09'x
    FIRSTOBS=2 OBS=20;
  INPUT name :$10. sex :$2. age
    height weight;
RUN;
```

▸ Example 1

	A	B	C	D	E
1	Name	Sex	Age	Height	Weight
11	John	M	12	59.00	99.50
12	Joyce	F	11	51.30	50.50
13	Judy	F	14	64.30	90.00
14	Louise	F	12	56.30	77.00
15	Mary	F	15	66.50	112.00
16	Philip	M	16	72.00	150.00
17	Robert	M	12	64.80	128.00
18	Ronald	M	15	67.00	133.00
19	Thomas	M		57.50	85.00
20	William	M	15	66.50	112.00
21					
22					
23	MEAN:		13	62.34	100.03
24					
25	MIN:		11	51.30	50.50
26	1st QUAD:		12	58.25	84.25
27	MEDIAN:		14	62.80	99.50
28	3rd QUAD:		15	65.90	112.25
29	MAX:		16	72.00	150.00

Class

Example 2

One Worksheet into SAS via tab-delimited TXT

Alice	F	13	56.50	84.00	
Barbara	F	13	65.30	98.00	
Carol	F	14	62.80	102.50	
Henry	M	14	63.50	102.50	
James	M	12	57.30	83.00	
Jane	F	12	59.80	84.50	
Janet	F	15	62.50	112.50	
Jeffrey	M	13	62.50	84.00	
John	M	12	59.00	99.50	
Joyce	F	11	51.30	50.50	
Judy	F	14	64.30	90.00	
Louise	F	12	56.30	77.00	
Mary	F	15	66.50	112.00	
Philip	M	16	72.00	150.00	
Robert	M	12	64.80	128.00	
Ronald	M	15	67.00	133.00	
Thomas	M		57.50	85.00	
William	M	15	66.50	112.00	
MEAN:		13	62.34	100.03	
MIN:		11	51.30	50.50	
1st QUAD:			12	58.25	84.25
MEDIAN:		14	62.80	99.50	
3rd QUAD:			15	65.90	112.25
MAX:		16	72.00	150.00	

⇐

	A	B	C	D	E
1	Name	Sex	Age	Height	Weight
11	John	M	12	59.00	99.50
12	Joyce	F	11	51.30	50.50
13	Judy	F	14	64.30	90.00
14	Louise	F	12	56.30	77.00
15	Mary	F	15	66.50	112.00
16	Philip	M	16	72.00	150.00
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18	Ronald	M	15	67.00	133.00
19	Thomas	M		57.50	85.00
20	William	M	15	66.50	112.00
21					
22					
23	MEAN:		13	62.34	100.03
24					
25	MIN:		11	51.30	50.50
26	1st QUAD:		12	58.25	84.25
27	MEDIAN:		14	62.80	99.50
28	3rd QUAD:		15	65.90	112.25
29	MAX:		16	72.00	150.00

Class

▸ Example 1

Example 3

Many Worksheets into SAS via CSV/TXT

	A	B	C	D	E
1	**Name**	**Sex**	**Age**	**Height**	**Weight**
2	Alfred	M	14	69.00	112.50
3	Alice	F	13	56.50	84.00
4	Barbara	F	13	65.30	98.00
5	Carol	F	14	62.80	102.50
6	Henry	M	14	63.50	102.50
7	James	M	12	57.30	83.00
8	Jane	F	12	59.80	84.50
9	Janet	F	15	62.50	112.50
10	Jeffrey	M	13	62.50	84.00
11	John	M	12	59.00	99.50
12	Joyce	F	11	51.30	50.50
13	Judy	F	14	64.30	90.00
14	Louise	F	12	56.30	77.00
15	Mary	F	15	66.50	112.00
16	Philip	M	16	72.00	150.00
17	Robert	M	12	64.80	128.00
18	Ronald	M	15	67.00	133.00
19	Thomas	M	11	57.50	85.00
20	William	M	15	66.50	112.00
21					
22					

Gowan | Sturge

	A	B	C	D	E
1	**Name**	**Sex**	**Age**	**Height**	**Weight**
2	Amanda	F	13	60.21	84.42
3	Becky	F	13	59.92	69.93
4	Ben	M	13	64.91	117.27
5	Chris	M	11	56.94	64.34
6	Dan	M	13	66.45	89.24
7	Edward	M	15	65.32	108.53
8	Jason	M	13	65.46	100.16
9	Jill	F	11	59.74	58.32
10	Joshua	M	12	54.28	100.41
11	Juan	M	14	64.19	119.69
12	Katrina	F	16	69.92	131.86
13	Mark	M	15	66.89	143.22
14	Maryanne	F	11	51.12	38.61
15	Melody	F	15	67.76	111.16
16	Scott	M	14	69.06	121.59
17	Sharon	F	13	62.31	91.47
18	Steve	M	14	65.52	123.56
19	Tami	F	11	54.07	57.11
20	Theresa	F	15	62.16	110.62
21	Tim	M	13	64.24	117.80
22	Tracy	F	12	55.66	72.42

Sturge | Valerio

	A	B	C	D	E
1	**Name**	**Sex**	**Age**	**Height**	**Weight**
2	Anita	F	16	68.68	115.00
3	Antoine	M	15	67.36	103.36
4	Béatrice	F	15	64.70	116.87
5	Benjamin	M	16	74.55	126.10
6	Christophe	M	12	62.63	91.17
7	Colette	F	11	56.55	48.45
8	Danielle	F	15	62.97	104.71
9	Éliane	F	15	68.64	114.74
10	Gabrielle	F	12	56.19	70.37
11	Guillaume	M	15	68.61	116.26
12	Jacques	M	16	70.94	138.60
13	Jérôme	M	14	66.20	86.33
14	Joseph	M	15	65.68	75.88
15	Monique	F	11	50.89	62.37
16	Noëlle	F	12	55.57	85.65
17	Pierre	M	14	64.12	120.58
18	Serge	M	16	71.35	143.50
19					
20					
21					
22					

Valerio

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Example 3

Many Worksheets into SAS via CSV/TXT

```
%exportFromXL(
  inpath=&inroot,
  inname=Example 3,
  sheets=Gowan,
  outpath=&outroot,
  endclose=no );

DATA gowan;
  INFILE "&outroot\Gowan.csv"
    DSD MISSOVER FIRSTOBS=2;
  INPUT name :$10. sex :$2. age
    height weight;
RUN;
```

▸ Example 1

	A	B	C	D	E
1	**Name**	**Sex**	**Age**	**Height**	**Weight**
2	Alfred	M	14	69.00	112.50
3	Alice	F	13	56.50	84.00
4	Barbara	F	13	65.30	98.00
5	Carol	F	14	62.80	102.50
6	Henry	M	14	63.50	102.50
7	James	M	12	57.30	83.00
8	Jane	F	12	59.80	84.50
9	Janet	F	15	62.50	112.50
10	Jeffrey	M	13	62.50	84.00
11	John	M	12	59.00	99.50
12	Joyce	F	11	51.30	50.50
13	Judy	F	14	64.30	90.00
14	Louise	F	12	56.30	77.00
15	Mary	F	15	66.50	112.00
16	Philip	M	16	72.00	150.00
17	Robert	M	12	64.80	128.00
18	Ronald	M	15	67.00	133.00
19	Thomas	M	11	57.50	85.00
20	William	M	15	66.50	112.00
21					
22					

Gowan | Sturge

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Example 3

Many Worksheets into SAS via CSV/TXT

```
%exportFromXL(
  inpath=&inroot,
  inname=Example 3,
  sheets=Sturge,
  outpath=&outroot,
  endclose=no );

DATA sturge;
  INFILE "&outroot\Sturge.csv"
    DSD MISSOVER FIRSTOBS=2;
  INPUT name :$10. sex :$2. age
    height weight;
RUN;
```

▸ Example 1

	A	B	C	D	E
1	**Name**	**Sex**	**Age**	**Height**	**Weight**
2	Amanda	F	13	60.21	84.42
3	Becky	F	13	59.92	69.93
4	Ben	M	13	64.91	117.27
5	Chris	M	11	56.94	64.34
6	Dan	M	13	66.45	89.24
7	Edward	M	15	65.32	108.53
8	Jason	M	13	65.46	100.16
9	Jill	F	11	59.74	58.32
10	Joshua	M	12	54.28	100.41
11	Juan	M	14	64.19	119.69
12	Katrina	F	16	69.92	131.86
13	Mark	M	15	66.89	143.22
14	Maryanne	F	11	51.12	38.61
15	Melody	F	15	67.76	111.16
16	Scott	M	14	69.06	121.59
17	Sharon	F	13	62.31	91.47
18	Steve	M	14	65.52	123.56
19	Tami	F	11	54.07	57.11
20	Theresa	F	15	62.16	110.62
21	Tim	M	13	64.24	117.80
22	Tracy	F	12	55.66	72.42

Sturge | Valerio

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Example 3

Many Worksheets into SAS via CSV/TXT

```
%exportFromXL(
  inpath=&inroot,
  inname=Example 3,
  sheets=Valerio,
  outpath=&outroot );

DATA valerio;
  INFILE "&outroot\Valerio.csv"
    DSD MISSOVER FIRSTOBS=2;
  INPUT name :$10. sex :$2. age
    height weight;
RUN;
```

▸ Example 1

	A	B	C	D	E
1	**Name**	**Sex**	**Age**	**Height**	**Weight**
2	Anita	F	16	68.68	115.00
3	Antoine	M	15	67.36	103.36
4	Béatrice	F	15	64.70	116.87
5	Benjamin	M	16	74.55	126.10
6	Christophe	M	12	62.63	91.17
7	Colette	F	11	56.55	48.45
8	Danielle	F	15	62.97	104.71
9	Éliane	F	15	68.64	114.74
10	Gabrielle	F	12	56.19	70.37
11	Guillaume	M	15	68.61	116.26
12	Jacques	M	16	70.94	138.60
13	Jérôme	M	14	66.20	86.33
14	Joseph	M	15	65.68	75.88
15	Monique	F	11	50.89	62.37
16	Noëlle	F	12	55.57	85.65
17	Pierre	M	14	64.12	120.58
18	Serge	M	16	71.35	143.50
19					
20					
21					
22					

Valerio

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Example 3

Many Worksheets into SAS via CSV/TXT

```
%exportFromXL( inpath=&inroot, inname=Example 3,
  sheets=Gowan:Sturge:Valerio, outpath=&outroot );

DATA gowan;
  INFILE "&outroot\Gowan.csv" DSD MISSOVER FIRSTOBS=2;
  INPUT name :$10. sex :$2. age height weight;

DATA sturge;
  INFILE "&outroot\Sturge.csv" DSD MISSOVER FIRSTOBS=2;
  INPUT name :$10. sex :$2. age height weight;

DATA valerio;
  INFILE "&outroot\Valerio.csv" DSD MISSOVER FIRSTOBS=2;
  INPUT name :$10. sex :$2. age height weight;
RUN;
```

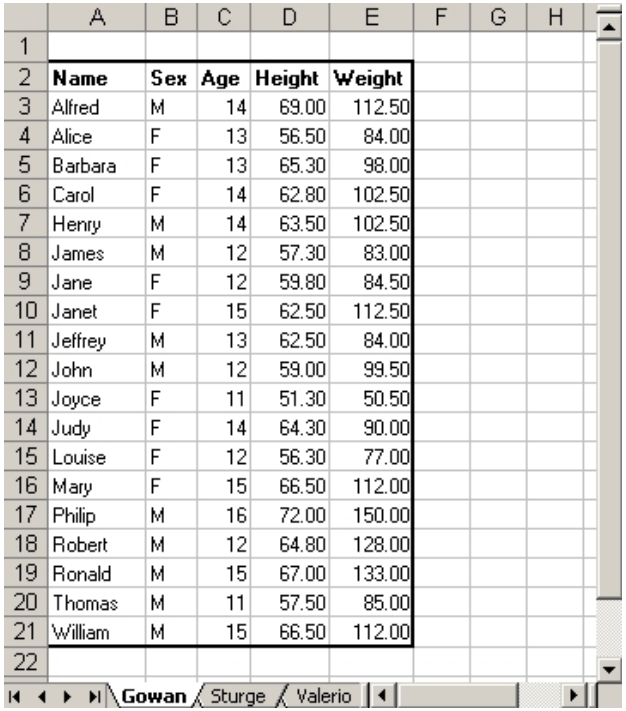
Example 3

Many Worksheets into SAS via CSV/TXT

```
%exportFromXL( inpath=&inroot, inname=Example 3,
  sheets=Gowan:Sturge:Valerio, outpath=&outroot );

%MACRO makeSASData( teacher );

  DATA &teacher;
    INFILE "&outroot\...csv" DSD MISSOVER FIRSTOBS=2;
    INPUT name :$10. sex :$2. age height weight;
  RUN;

%MEND makeSASData;

%makeSASData( gowan );
%makeSASData( sturge );
%makeSASData( valerio );
```

Example 4

Many Worksheets, Structural Variations



	A	B	C	D	E
1					
2	**Name**	**Sex**	**Age**	**Height**	**Weight**
3	Alfred	M	14	69.00	112.50
4	Alice	F	13	56.50	84.00
5	Barbara	F	13	65.30	98.00
6	Carol	F	14	62.80	102.50
7	Henry	M	14	63.50	102.50
8	James	M	12	57.30	83.00
9	Jane	F	12	59.80	84.50
10	Janet	F	15	62.50	112.50
11	Jeffrey	M	13	62.50	84.00
12	John	M	12	59.00	99.50
13	Joyce	F	11	51.30	50.50
14	Judy	F	14	64.30	90.00
15	Louise	F	12	56.30	77.00
16	Mary	F	15	66.50	112.00
17	Philip	M	16	72.00	150.00
18	Robert	M	12	64.80	128.00
19	Ronald	M	15	67.00	133.00
20	Thomas	M	11	57.50	85.00
21	William	M	15	66.50	112.00
22					

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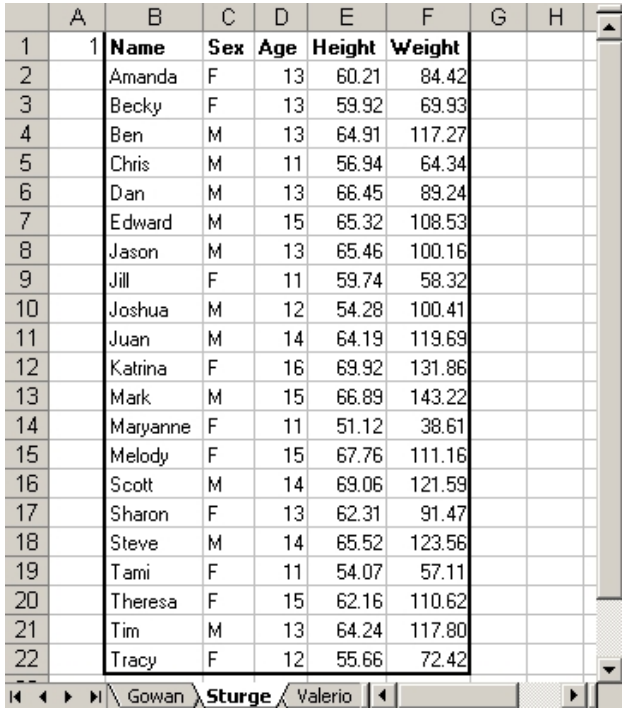
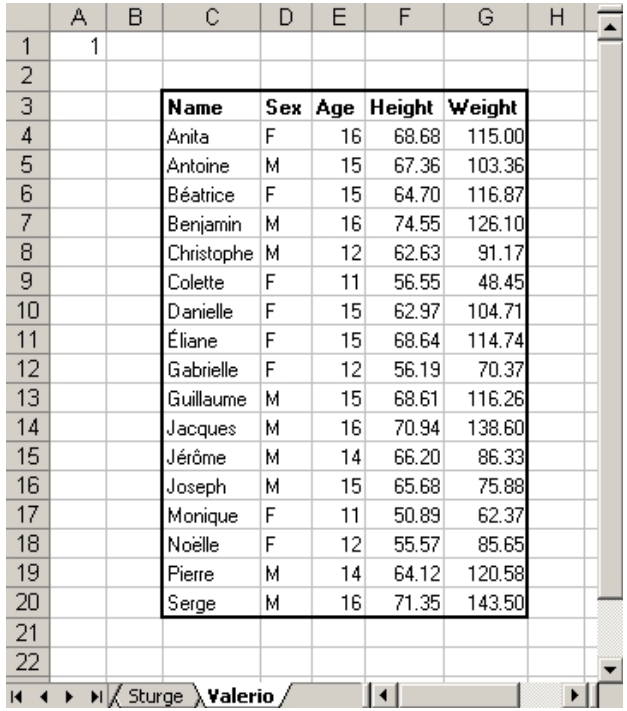


	A	B	C	D	E	F
1	1	**Name**	**Sex**	**Age**	**Height**	**Weight**
2		Amanda	F	13	60.21	84.42
3		Becky	F	13	59.92	69.93
4		Ben	M	13	64.91	117.27
5		Chris	M	11	56.94	64.34
6		Dan	M	13	66.45	89.24
7		Edward	M	15	65.32	108.53
8		Jason	M	13	65.46	100.16
9		Jill	F	11	59.74	58.32
10		Joshua	M	12	54.28	100.41
11		Juan	M	14	64.19	119.69
12		Katrina	F	16	69.92	131.86
13		Mark	M	15	66.89	143.22
14		Maryanne	F	11	51.12	38.61
15		Melody	F	15	67.76	111.16
16		Scott	M	14	69.06	121.59
17		Sharon	F	13	62.31	91.47
18		Steve	M	14	65.52	123.56
19		Tami	F	11	54.07	57.11
20		Theresa	F	15	62.16	110.62
21		Tim	M	13	64.24	117.80
22		Tracy	F	12	55.66	72.42

Gowan | Sturge | Valerio



	A	B	C	D	E	F	G
1	1						
2							
3			**Name**	**Sex**	**Age**	**Height**	**Weight**
4			Anita	F	16	68.68	115.00
5			Antoine	M	15	67.36	103.36
6			Béatrice	F	15	64.70	116.87
7			Benjamin	M	16	74.55	126.10
8			Christophe	M	12	62.63	91.17
9			Colette	F	11	56.55	48.45
10			Danielle	F	15	62.97	104.71
11			Éliane	F	15	68.64	114.74
12			Gabrielle	F	12	56.19	70.37
13			Guillaume	M	15	68.61	116.26
14			Jacques	M	16	70.94	138.60
15			Jérôme	M	14	66.20	86.33
16			Joseph	M	15	65.68	75.88
17			Monique	F	11	50.89	62.37
18			Noëlle	F	12	55.57	85.65
19			Pierre	M	14	64.12	120.58
20			Serge	M	16	71.35	143.50
21							
22							

Sturge | Valerio

▸ Example 3

Example 4

Many Worksheets, Structural Variations

,,,,
Name,Sex,Age,Height,Weight
Alfred,M,14,69.00,112.50
Alice,F,13,56.50,84.00
Barbara,F,13,65.30,98.00
Carol,F,14,62.80,102.50
Henry,M,14,63.50,102.50
James,M,12,57.30,83.00
Jane,F,12,59.80,84.50
Janet,F,15,62.50,112.50
Jeffrey,M,13,62.50,84.00
John,M,12,59.00,99.50
Joyce,F,11,51.30,50.50
Judy,F,14,64.30,90.00
Louise,F,12,56.30,77.00
Mary,F,15,66.50,112.00
Philip,M,16,72.00,150.00
Robert,M,12,64.80,128.00
Ronald,M,15,67.00,133.00
Thomas,M,11,57.50,85.00
William,M,15,66.50,112.00

1,Name,Sex,Age,Height,Weight
,Amanda,F,13,60.21,84.42
,Becky,F,13,59.92,69.93
,Ben,M,13,64.91,117.27
,Chris,M,11,56.94,64.34
,Dan,M,13,66.45,89.24
,Edward,M,15,65.32,108.53
,Jason,M,13,65.46,100.16
,Jill,F,11,59.74,58.32
,Joshua,M,12,54.28,100.41
,Juan,M,14,64.19,119.69
,Katrina,F,16,69.92,131.86
,Mark,M,15,66.89,143.22
,Maryanne,F,11,51.12,38.61
,Melody,F,15,67.76,111.16
,Scott,M,14,69.06,121.59
,Sharon,F,13,62.31,91.47
,Steve,M,14,65.52,123.56
,Tami,F,11,54.07,57.11
,Theresa,F,15,62.16,110.62
,Tim,M,13,64.24,117.80
,Tracey,F,12,55.66,72.42

1,,,,,,
,,,,,,
,,Name,Sex,Age,Height,Weight
,,Anita,F,16,68.68,115.00
,,Antoine,M,15,67.36,103.36
,,Béatrice,F,15,64.70,116.87
,,Benjamin,M,16,74.55,126.10
,,Christophe,M,12,62.63,91.17
,,Colette,F,11,56.55,48.45
,,Danielle,F,15,62.97,104.71
,,Éliane,F,15,68.64,114.74
,,Gabrielle,F,12,56.19,70.37
,,Guillaume,M,15,68.61,116.26
,,Jacques,M,16,70.94,138.60
,,Jérôme,M,14,66.20,86.33
,,Joseph,M,15,65.68,75.88
,,Monique,F,11,50.89,62.37
,,Noëlle,F,12,55.57,85.65
,,Pierre,M,14,64.12,120.58
,,Serge,M,16,71.35,143.50

Example 4

Many Worksheets, Structural Variations

```
%exportFromXL( inpath=&inroot, inname=Example 4, outpath=&outroot );

%MACRO makeSASData( teacher );

  ...

  DATA &teacher;
    INFILE "&outroot\...csv" DSD MISSOVER FIRSTOBS=%EVAL(&cell1row+1);
    INPUT %IF &cell1col > 1 %THEN %DO j=1 %TO %EVAL( &cell1col - 1 );
      input&j %END; name :$10. sex :$2. age height weight;
    %IF &cell1col > 1 %THEN %DO j=1 %TO %EVAL( &cell1col - 1 );
      DROP input&j; %END;
  RUN;
%MEND makeSASData;

%makeSASData( gowan );
%makeSASData( sturge );
%makeSASData( valerio );
```

Example 3

	A	B	C	D	E	F	G	H	I
1									
2									
3		WA		OR		UT		ID	
4	Tier	Rate	Yield	Rate	Yield	Rate	Yield	Rate	Yield
5	<$10,000	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%
6	$10,000-24,999	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%
7	$25,000-49,999	0.98%	0.98%	0.98%	0.98%	0.98%	0.98%	0.98%	0.98%
8	$50,000-99,999	1.98%	2.00%	2.02%	2.04%	2.08%	2.10%	2.08%	2.10%
9	$100,000-$149,999	2.98%	3.02%	2.98%	3.02%	2.98%	3.02%	2.98%	3.02%
10	$150,000-$249,999	3.15%	3.20%	3.12%	3.17%	3.18%	3.23%	3.18%	3.23%
11	$250,000-$499,999	3.23%	3.28%	3.25%	3.30%	3.23%	3.28%	3.24%	3.29%
12	500,000 +	3.28%	3.33%	3.28%	3.33%	3.28%	3.33%	3.33%	3.39%
13									
14		CA		CO		FL		IL	
15	Tier	Rate	Yield	Rate	Yield	Rate	Yield	Rate	Yield
16	<$10,000	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%
17	$10,000-24,999	0.48%	0.48%	0.48%	0.48%	0.38%	0.38%	0.38%	0.38%
18	$25,000-49,999	0.98%	0.98%	0.98%	0.98%	1.35%	1.36%	1.35%	1.36%
19	$50,000-99,999	2.08%	2.10%	2.08%	2.10%	2.08%	2.10%	2.08%	2.10%
20	$100,000-$149,999	3.08%	3.13%	3.04%	3.09%	2.98%	3.02%	2.98%	3.02%
21	$150,000-$249,999	3.18%	3.23%	3.18%	3.23%	3.18%	3.23%	3.14%	3.19%
22	$250,000-$499,999	3.23%	3.28%	3.24%	3.29%	3.22%	3.27%	3.16%	3.21%
23	500,000 +	3.28%	3.33%	3.26%	3.31%	3.25%	3.30%	3.22%	3.27%
24									
25		TX		NV		AZ		GA	

Cat1 | Cat2 | Cat3 | Cat4 | Cat5 | Cat6 | Cat7 | Cat8 | Cat9 | Cat10

Tier	NY Rate	NY Yield	NJ Rate	NJ Yield
<$10,000	0.10%	0.10%	0.10%	0.10%
$10,000-24,999	0.25%	0.25%	0.25%	0.25%
$25,000-49,999	1.25%	1.26%	1.25%	1.26%
$50,000-99,999	1.85%	1.87%	1.95%	1.97%
$100,000-$149,999	2.25%	2.28%	2.15%	2.17%
$150,000-$249,999	2.45%	2.48%	2.46%	2.49%
$250,000-$499,999	2.76%	2.80%	2.87%	2.91%
500,000 +	3.04%	3.09%	3.03%	3.08%

Tier	CT Rate	CT Yield
<$10,000	0.10%	0.10%
$10,000-24,999	0.25%	0.25%
$25,000-49,999	1.35%	1.36%
$50,000-99,999	1.87%	1.89%
$100,000-$149,999	2.25%	2.28%
$150,000-$249,999	2.48%	2.51%
$250,000-$499,999	2.94%	2.98%
500,000 +	3.02%	3.07%

Cat1 | Cat2 | Cat3 | Cat4 | Cat5 | Cat6 | Cat7 | Cat8 | Cat9 | Cat10

YT SUG

	A	B	C	D	E	F	G	H	I
1									
2									
3		WA		OR		UT		ID	
4	Tier	Rate	Yield	Rate	Yield	Rate	Yield	Rate	Yield
5	<$2500	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
6	$2,500-9,999	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
7	$10,000-24,999	0.77%	0.77%	0.77%	0.77%	0.87%	0.87%	0.77%	0.77%
8	$25,000-49,999	1.76%	1.78%	1.87%	1.89%	1.54%	1.55%	1.35%	1.36%
9	$50,000-99,999	2.23%	2.25%	2.57%	2.60%	2.02%	2.04%	2.23%	2.25%
10	$100,000 +	2.28%	2.31%	2.65%	2.69%	2.23%	2.25%	2.35%	2.38%
11									
12		CA		CT		FL		MA	
13	Tier	Rate	Yield	Rate	Yield	Rate	Yield	Rate	Yield
14	<$2500	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
15	$2,500-9,999	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
16	$10,000-24,999	0.85%	0.85%	0.85%	0.85%	0.97%	0.97%	0.84%	0.84%
17	$25,000-49,999	1.46%	1.47%	1.56%	1.57%	1.48%	1.49%	1.46%	1.47%
18	$50,000-99,999	2.38%	2.41%	2.35%	2.38%	2.32%	2.35%	2.32%	2.35%
19	$100,000+	2.67%	2.71%	2.56%	2.59%	2.67%	2.71%	2.46%	2.49%
20									
21		TX		NV		AZ		GA	
22	Tier	Rate	Yield	Rate	Yield	Rate	Yield	Rate	Yield
23	<$2500	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
24	$2,500-9,999	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
25	$10,000-24,999	0.68%	0.68%	0.87%	0.87%	0.78%	0.78%	0.65%	0.65%

Cat1 | Cat2 | **Cat3** | Cat4 | Cat5 | Cat6 | Cat7 | Cat8 | Cat9 | Cat10

YT SUG

Parameters

```
%exportFromXL(
  inpath = ,
  inname = ,
  outpath = ,
  filetype = csv,
  delimiter = comma,
  sheets = [ALL],
  skipsheets = [NONE],
  lang = en,
  endclose = yes
  );
```

input path
file name
output path
output type — `csv` or `txt`
delimiter — `comma` or `tab`
included sheets
excluded sheets
Excel language — `en` or `fr` or `es` or `de` or ...
close Excel at end? — `yes` or `no`

- No `.xls` in `inname`.
- Commas/semicolons: `inname=%bquote(One, Two), sheets=%bquote(One; Two:Three, Four),`

Ideas for Further Development

Overcome current limitations:

- Bypassing Dialogue Boxes.
- Accessing Hidden Worksheets.
- Compatibility with Enterprise Guide.
- Compatibility with OpenOffice.org Calc.

%exportFromXL Website

http://exportFromXL.sf.net

(or just Google exportFromXL)

Nate Derby: http://nderby.org

nderby@sprodata.com