

## Using SAS to generate DDI-Codebook XML from Information Managed in Excel Spreadsheets

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## **Initial Project:**

- Generate DDI-Codebook XML file as intermediate step to producing a codebook.

## **Current Project:**

- Generate DDI-Codebook XML file for subsequent loading of variable metadata into a web-based variable editor.

## Why SAS?

- Data file was a SAS dataset.
- Variable metadata existed in Excel spreadsheets.
- SAS is able to import information directly from Excel.
- SAS is able to format and merge frequencies and descriptive statistics with formatted metadata.
- Allowing processing of metadata as data has been a strength of SAS since Version 6.
- SAS is able generate text streams.

## Some SAS Dataset metadata maps directly to DDI-Codebook elements:

- Name

```
<var name= ></var>
```

- Type

```
<varFormat type= ></varFormat>
```

- Label

```
<labl></labl>
```

#	Variable	Type	Len	Label
3	name	Char	32	Column Name
4	type	Char	4	Column Type
5	length	Num	8	Column Length
6	varnum	Num	8	Column Number in Table
7	label	Char	256	Column Label
8	format	Char	49	Column Format

```
proc contents
  data = user.respondent_data
  out = user._variables_metadata
  varnum
;
run ;
```

VIEWTABLE: User\_variables\_metadata

	name	type	length	varnum	label	format
1	CASEID	num	6	1	Respondent ID Number	
2	RSCRNINF	num	3	2	R is Screener Informant	TE_2F.
3	RSCRAGE	num	3	3	R's Age as Reported in Screener	AGEFF.
4	RSCRHISP	num	3	4	R is Reported as Hispanic in the Screener	TE_2F.
5	RSCRACE	num	3	5	R's Race as Reported in Screener	TE_9F.
6	AGE_A	num	3	6	Aa-1 R's Age at Interview	AGEMF.
7	AGE_R	num	3	7	R's Age at Interview	AGEMF.
8	CMBIRTH	num	4	8	Century Month for R's Birth	CMFMT.
9	AGESCRN	num	3	9	R's Age at Screener	AGEFF.
10	AGESTAT	num	3	10	R's Age at Screener	TE_10F.

#	Variable	Type	Len	Label
3	name	Char	32	Column Name
4	type	Char	4	Column Type
5	length	Num	8	Column Length
6	varnum	Num	8	Column Number in Table
7	label	Char	256	Column Label
8	format	Char	49	Column Format

```
proc sql ;
select name,type,length,varnum...
from dictionary.columns
where
    libname = 'USER'
    and memname = 'RESPONDENT_DATA'
;
quit ;
```

VIEWTABLE: User\_variables\_metadata

	name	type	length	varnum	label	format
1	CASEID	num	6	1	Respondent ID Number	
2	RSCRNINF	num	3	2	R is Screener Informant	TE_2F.
3	RSCRAGE	num	3	3	R's Age as Reported in Screener	AGEFF.
4	RSCRHISP	num	3	4	R is Reported as Hispanic in the Screener	TE_2F.
5	RSCRACE	num	3	5	R's Race as Reported in Screener	TE_9F.
6	AGE_A	num	3	6	Aa-1 R's Age at Interview	AGEMF.
7	AGE_R	num	3	7	R's Age at Interview	AGEMF.
8	CMBIRTH	num	4	8	Century Month for R's Birth	CMFMT.
9	AGESCRN	num	3	9	R's Age at Screener	AGEFF.

## SAS can generate other metadata using value assignments and functions :

- VARNUM

```
id = cats('var',put(varnum,Z5.0)) ;
```

```
id = 'var00001' ;
```

```
var_tag = cats('<var ID="' ,trim(ID),  
              '" name="' ,trim(name),'">') ;
```

```
<var ID="var00001" name="CASEID">
```

## Other metadata must come from other sources:

- Column locations

```
<location StartPos= width= />
```

- Variable groups

```
<varGrp><varGrp>
```

- Question text

```
<qstnLit></qstnLit>
```

- Universe text

```
<universe></universe>
```



FemAp\_qtext.xls [Compatibility Mode] - Microsoft Excel

	A	B	C
1	varname	qnumber	qtext
2	CONF_SC	AA-0a	R Interviewer checkpoint: You are in the Female instrument, Sample ID (SAMPLEID), at the following address.
3	INTRO_1	AA-0b	Now we can begin. I'll begin with some basic questions about your background.
4	AGE_A	AA-1	(First, I'd like to know your age and date of birth.) How old are you?
5	BIRTHDAY	AA-2	What is the date of your birth?
6	MISSBRTH	AA-2a	In order to proceed with this interview, we need to know either your age or your date of birth. I'd like to ask you for
7	AGE_R		R's age at interview (Computed in Flow Check A-2)
8	CMBIRTH		Century month for R's date of birth (Computed in Flow Check A-3)
9	AGESCRN		R's age at screener (Computed in Flow Check A-4)
10	TERM	AA-3	In this survey we are only interviewing women who are between the ages of 15 and 44. Therefore, that's all the
11	TERMAGE	AA-3a	That's all the questions I have for you. Thank you for your time.
12	INTROCARD	AB-0	For many questions on this survey, I'll ask you to look at numbered cards that list answer choices. After you look at
13	MARSTAT	AB-1	Year 1: Now I'd like to ask about your marital status. Please look at Card 1. What is your current marital status?
14	FMARSTAT	AB-2	What is your formal marital status? That is, are you widowed, divorced, separated, or have you never been married?
15	FMARIT		R's formal marital status (Computed in Flow Check A-7)
16	EVRMARRY		R ever married (Computed in Flow Check A-7)
17	HISP	AC-1	Now I have some questions about your ethnic background and your race. (You may have already told me about your
18	INHISPGRP	AC-2	Are you Puerto Rican, Cuban, Mexican, Central or South American, or a member of some other group?
19	HISPGRP	AC-2	Are you Puerto Rican, Cuban, Mexican, Central or South American, or a member of some other group?
20	RRACE1	AC-3	Which of the groups on Card 2 describes your racial background? Please select one or more groups.
21	RRACE2	AC-3	Which of the groups on Card 2 describes your racial background? Please select one or more groups.

## There is more than one way to import information from Excel into SAS

- External File Interface
- Import Wizard
- Proc Import
- Excel Library Engine

## **SAS is able to export information to several different file standards**

- MS Access
- MS Excel
- Oracle
- ODBC
- Custom specifications through ODS tagsets and DATA STEP code

## SAS is able to export information to several different file standards

- MS Access
- MS Excel
- Oracle
- ODBC
- Custom specifications through ODS tagsets and **DATA STEP** code

## The Excel Library Engine is the first component for importing Excel values

```
libname
```

```
    metadata
```

```
    excel
```

```
    "C:\worksheets\femjp_qtext.xls"
```

```
;
```

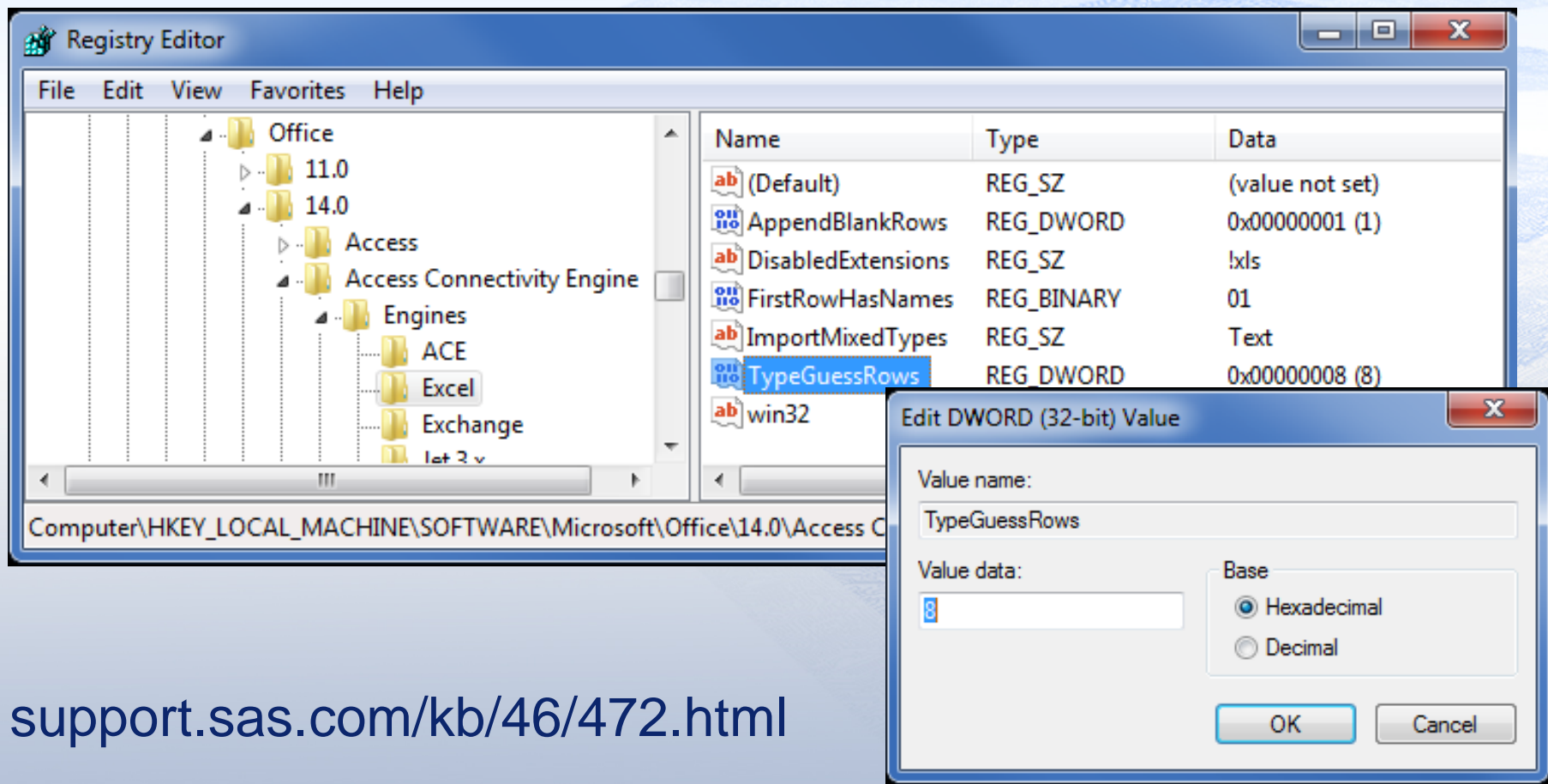
## Initializing the SAS/Access Excel engine as a library provides the most flexibility and access to Excel objects

```
libname  
    metadata  
    excel  
    "C:\worksheets\femjp_qtext.xls"  
;
```

## Initializing the SAS/Access Excel engine as a library provides the most flexibility and access to Excel objects

```
libname  
  metadata  
  excel  
  "C:\worksheets\femjp_qtext.xls"  
  version = 2007  
  msengine = ACE | JET  
  textsize = 32767  
;
```

## Users may want to change a Windows MS Office Registry value





## Users may want to change a Windows MS Office Registry value

The image shows a Windows Registry Editor window with the following structure:

- Office
  - 11.0
  - 14.0
    - Access
      - Access Connectivity Engine
        - Engines
          - ACE
          - Excel
          - Exchange
          - let 3 v

The right pane shows a list of registry values:

Name	Type	Data
(Default)	REG_SZ	(value not set)
AppendBlankRows	REG_DWORD	0x00000001 (1)
DisabledExtensions	REG_SZ	xls
FirstRowHasNames	REG_BINARY	01
ImportMixedTypes	REG_SZ	Text
TypeGuessRows	REG_DWORD	0x00000008 (8)
win32		

An "Edit DWORD (32-bit) Value" dialog box is open, showing:

- Value name: TypeGuessRows
- Value data: 0
- Base:  Hexadecimal,  Decimal
- Buttons: OK, Cancel

Computer\HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Office\14.0\Access C

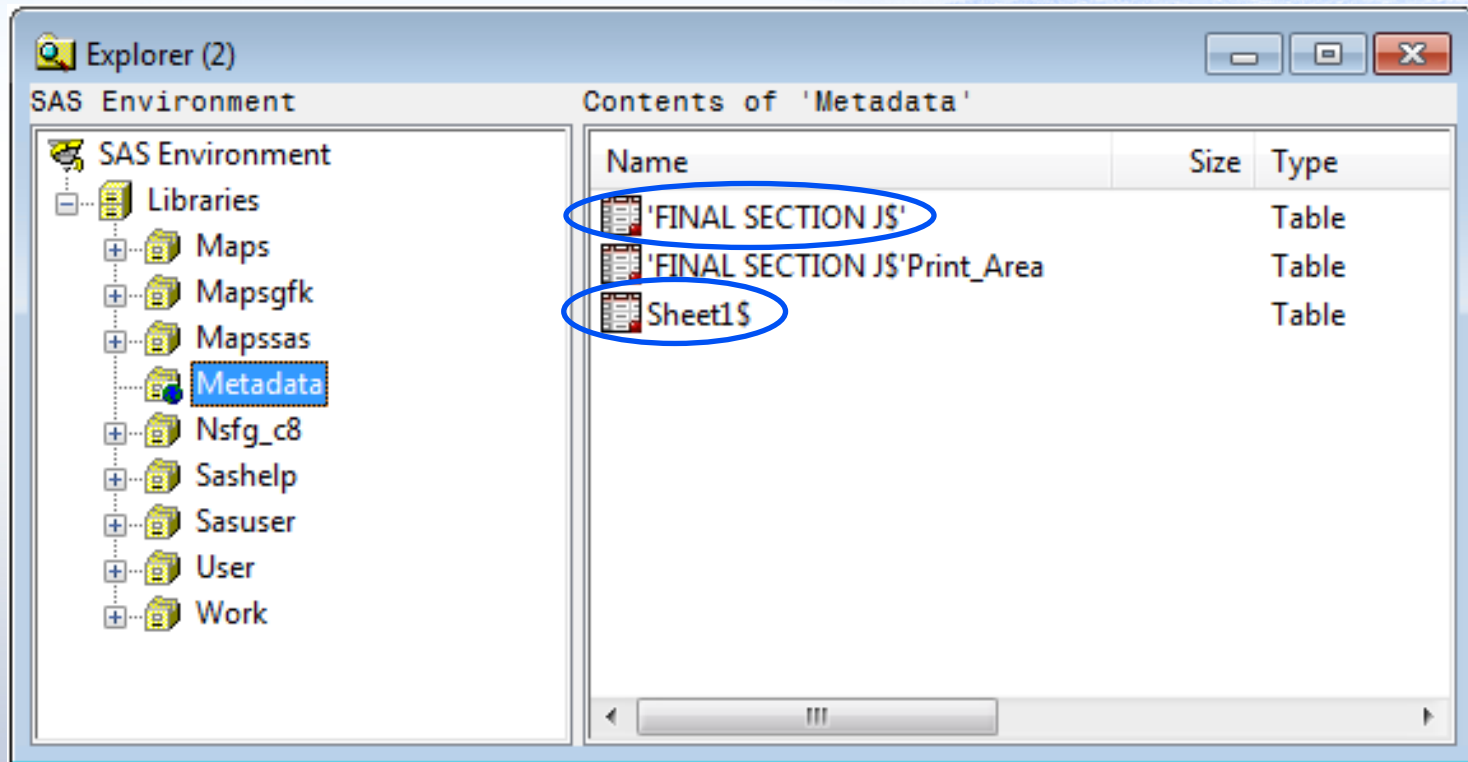
## The Excel engine provides access to each worksheet within a spreadsheet file

The screenshot shows a Microsoft Excel spreadsheet titled 'FemJp\_sl\_full.xls [Read-Only] [Compatibility Mode]'. The spreadsheet contains a table with the following columns: A1 (varlabel), A (varnum), B (subsection), C (varname), D (vardisp), E (vartype), and F (varlabel). The data rows are as follows:

A1	A	B	C	D	E	F		
	varlabel	le	varnum	subsection	varname	vardisp	vartype	varlabel
2	94	92	STD/HIV risk behaviors (JF)	OPPYEARNUM	1	Computed	Number of	
3	87	88	STD/HIV risk behaviors (JF)	OPPLIFENUM	1	Computed	Number of	
4	86	170	Individual earnings and family income and public assistance (JI)	PUBASST	1	Raw	JI-4 Receiv	
5	84	162	Individual earnings and family income and public assistance (JI)	OTHINC	1	Raw	JI-1k In pric	
6	81	172	Individual earnings and family income and public assistance (JI)	INPUBASTYP1	1	Raw	JI-5 Type o	
7	80	180	Individual earnings and family income and public assistance (JI)	HLPJOB	1	Raw	JI-8c In pric	
8	79	157	Individual earnings and family income and public assistance (JI)	SSI	1	Raw	JI-1f In prio	
9	77	161	Individual earnings and family income and public assistance (JI)	DIVIDEND	1	Raw	JI-1j In prio	
10	77	164	Individual earnings and family income and public assistance (JI)	TOTINC	1	Raw	JI-3 Total c	
11	72	179	Individual earnings and family income and public assistance (JI)	HLPCHLDC	1	Raw	JI-8b In pric	
12	71	173	Individual earnings and family income and public assistance (JI)	PUBASTYP2	1	Raw	JI-5 Type o	
13	71	174	Individual earnings and family income and public assistance (JI)	PUBASTYP3	1	Raw	JI-5 Type o	
14	71	175	Individual earnings and family income and public assistance (JI)	PUBASTYP4	1	Raw	JI-5 Type o	
15	70	171	Individual earnings and family income and public assistance (JI)	PUBASTYP1	1	Raw	JI-5 Type o	
16	69	70	Non voluntary intercourse: male - female (JE)	WORDPRES	1	Raw	JE-4d How	

The status bar at the bottom of the window shows 'FINAL SECTION J' circled in blue, along with 'Sheet1' and a zoom level of 100%.

## The Library provides access to each worksheet within a spreadsheet file



## The DATA step allows for the initialization of variable attributes

- Text strings have a length of 200 by default.
- Text strings can be up to 32,767 characters.

```
* INITIALIZE VARIABLE ATTRIBUTES ;
```

```
attrib
```

```
  VARNUM      length =          3      format = 6.0  
  VARNAME     length = $        32      format = $32.  
  QNUMBER     length = $         8      format = $8.  
  QTEXT       length = $ 32767      format = $CHAR32767.
```

```
;
```

## The DATA step's *SET* statement is the second component of importing Excel

- The previously-initialized libname is specified in the *set* statement.

```
* SPECIFY METADATA WORKSHEETS AND RENAME VARIABLES ;
```

```
set
```

```
  metadata.'FINAL SECTIONJ$'n (  
    rename = (  
      qtext = question_text  
      qnumber = cati_specification  
    )  
  )  
;
```

```
;
```

# The DATA step's *SET* statement is the second component of importing Excel

- The desired worksheet is specified in the *set* statement.

\* SPECIFY METADATA WORKSHEETS AND RENAME VARIABLES ;

set

```
metadata.'FINAL SECTIONJ$'n (  
  rename = (  
    qtext = question_text  
    qnumber = cati_specification  
  )  
)
```

;

# The DATA step's *SET* statement is the second component of importing Excel

- The desired worksheet is specified in the *set* statement.

\* SPECIFY METADATA WORKSHEETS AND RENAME VARIABLES ;

set

```
metadata.'FINAL SECTIONJ$'n (  
  rename = (  
    qtext = question_text  
    qnumber = cati_specification  
  )  
)
```

;

# The DATA step's *SET* statement is the second component of importing Excel

- Variable names can be changed with the SET statement's **rename** option.

\* SPECIFY METADATA WORKSHEETS AND RENAME VARIABLES ;

set

```
metadata.'FINAL SECTIONJ$'n (  
  rename = (  
    qtext = question_text  
    qnumber = cati_specification  
  )  
)
```

;



# The DATA step's *SET* statement is the second component of importing Excel

- Variable names can be changed with the SET statement's **rename** option.

\* SPECIFY METADATA WORKSHEETS AND RENAME VARIABLES ;

set

```
metadata.'FINAL SECTIONJ$'n (  
  rename = (  
    qtext = question_text  
    qnumber = cati_specification  
  )  
)  
)
```

;

## The HTMLENCODE function encodes characters using HTML character entity references

- Encodes '<', '>', and '&' by default.

```
markup_string = htmlentities("BIRTHWGT_LB1 < 6");  
"BIRTHWGT_LB1 &lt; 6"
```

## The HTMLENCODE function encodes characters using HTML character entity references

- Can encode specific HTML character entities.

```
markup_string = htmlentities("Don't Know", 'apos');  
"Don&apos;t Know"
```

## The HTMLENCODE function encodes characters using HTML character entity references

- Can encode all HTML character entities.

```
markup_string = 'R did not say "Don' 't Know" ' ;
```

```
      R did not say "Don't Know"
```

```
markup_string = htmlentities(
```

```
    markup_string,
```

```
    'amp apos lt gt quot'
```

```
);
```

```
      R did not say &quot;;Don&amp;t Know&quot;;
```

## Other functions can be used as necessary

- Unwanted changes can be reversed.

```
markup_string = tranwrd(  
    markup_string,  
    '&lt;nolink&gt;',  
    '<nolink>'  
);
```

## Other functions can be used as necessary

- NULL strings can be replaced as necessary.

```
if missing(markup_string) then  
    markup_string = 'Intentionally blank'  
;
```

## Regular Expressions

```
if prxmatch('/<.*>/',qtext) then  
  put 'NOTE: HTML Encoding?' _N_ = qtext=  
;
```

## SAS provides several means to standardize vocabulary and terms

- FORMATS (labels)
- HASH Tables



## Formats/Label metadata

VIEWTABLE: Work.Formats\_info

	FMTNAME	TYPE	START	END	LABEL	LENGTH	DECSEP	DIG3SEP
1	O_TE_10F	N	1	1	Person(s) came into the room and you paused the interview until they left	115		
2	O_TE_10F	N	2	2	Person(s) came into the room, you or R answered their question or explained that privacy was needed, and they left	115		
3	O_TE_10F	N	3	3	Person(s) stayed in the room but did not participate in interview	115		
4	O_TE_10F	N	4	4	Person(s) stayed in the room and offered R help with answers	115		
5	O_TE_10F	N	5	5	Person(s) stayed but was too young to understand the interview	115		
6	O_TE_10F	N	6	6	Other (Specify)	115		
7	O_TE_11F	N	1	1	Monthly contraceptive method history (Female interview only)	60		
8	O_TE_11F	N	2	2	# of sexual partners	60		
9	O_TE_11F	N	3	3	Detailed questions about previous partners	60		
10	O_TE_11F	N	4	4	None of these sections	60		
11	O_TE_12F	N	1	1	Extremely chaotic and noisy; disruptive to interview	66		
12	O_TE_12F	N	2	2	Some noise or interruptions but interview went reasonably smoothly	66		
13	O_TE_12F	N	3	3	Very quiet and calm, ideal for interview	66		

**run ;**



## Variable metadata

#	Variable	Type	Len	Format	Informat	Label
1	VARNAME	Char	32	\$32.	\$10.	Variable Name
2	source	Char	32	\$32.		Source File
3	columns	Char	16	\$16.	\$5.	Columns
4	start	Num	4	8.		Column Start
5	width	Num	4	8.		Column Width

## Question text

#	Variable	Type	Len	Format	Informat	Label
1	VARNAME	Char	15	\$32.	\$CHAR12.	Variable Name
3	QTEXT	Char	1145	\$CHAR32767.	\$CHAR1143.	Question Text

## Frequencies

#	Variable	Type	Len	Format	Label
1	VARNAME	Char	32	\$32.	Variable Name
2	VALUE	Num	8	BEST32.	Variable Value
3	VALUE_LABEL	Char	256	\$CHAR256.	Value Label
4	COUNT	Num	8	BEST32.	Frequency Count
5	PERCENT	Num	8		Percent of Total Frequency

## Universe text

#	Variable	Type	Len	Format	Informat	Label
1	VARNAME	Char	15	\$32.	\$CHAR12.	Variable Name
3	UNIVERSE	Char	896	\$CHAR2048.	\$CHAR1102.	Universe

## Notes text

#	Variable	Type	Len	Format	Informat	Label
1	VARNAME	Char	32	\$32.	\$CHAR10.	Variable Name
3	VARNOTES	Char	2048	\$CHAR2048.	\$CHAR62.	Variable Note

## Integrity constraints can be added once SAS generates datasets for each group of XML elements

```
proc datasets library = work nolist ;  
modify qtext ;  
ic create primary_key =  
    primary key (varname)  
;  
run ; quit ;
```

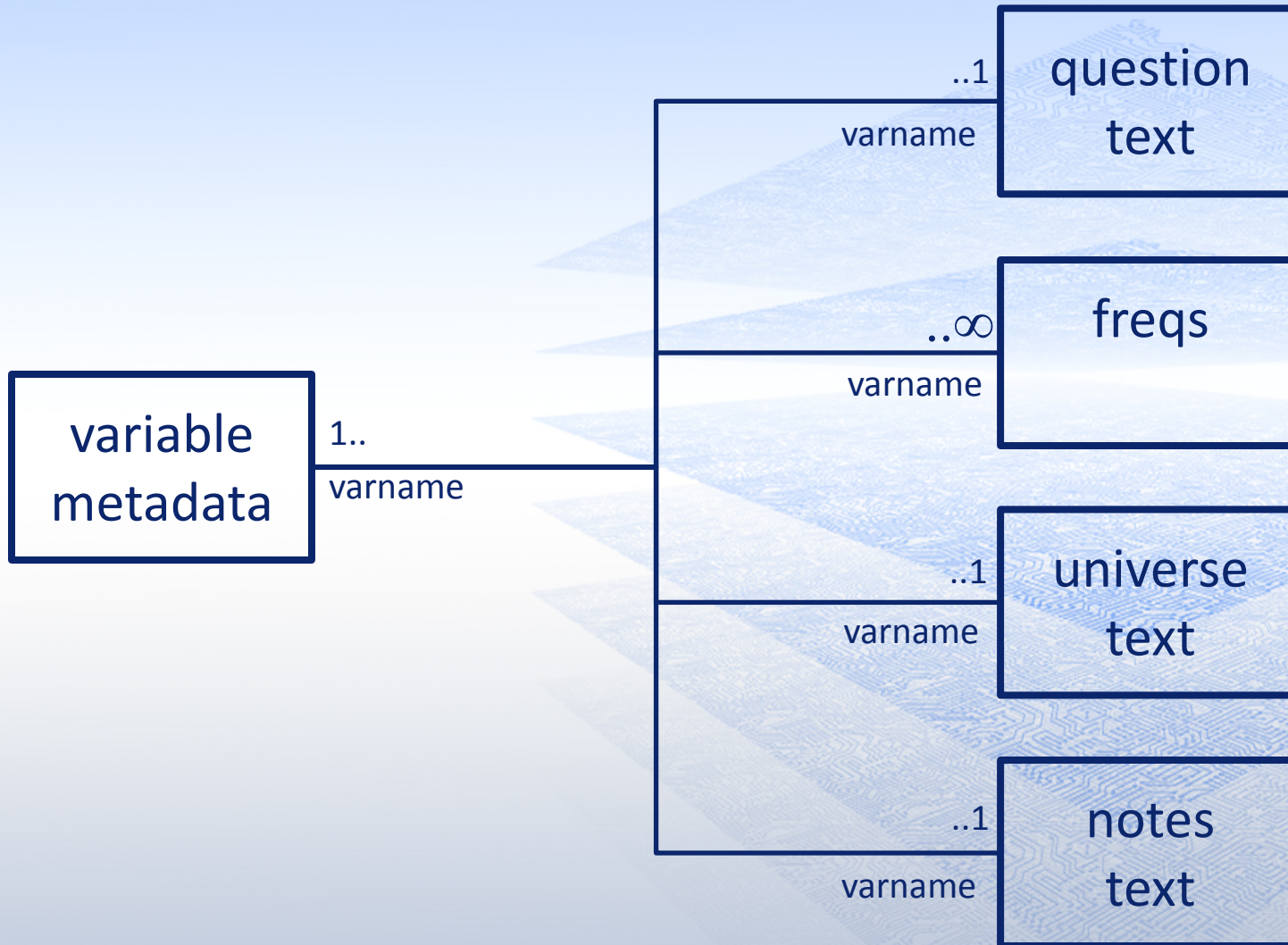
## Integrity constraints can be added once SAS generates datasets for each group of XML elements

```
proc datasets library = work nolist ;  
  modify qtext ;  
  ic create primary_key =  
    primary key (varname)  
  ;  
  modify universe_text ;  
  ic create common_varname =  
    foreign key (varname)  
    references WORK.QTEXT  
  ;
```

## PROC SQL can be used to merge variable metadata with variable frequencies

```
proc sql ;  
create table work.ddi21_cdbk_records  
as select  
    columns.*,  
    freqs.value, freqs.value_label, freqs.count,...  
    questions.question_text,  
    universe.universe_text,  
    notes.varnotes  
from  
    ...
```







#	Variable	Type	Len	Format	Informat	Label
1	VARNUM	Num	8			Column Number in Table
2	NAME	Char	32	\$32.		Column Name
3	VARIABLE_LABEL	Char	256			Column Label
4	VARIABLE_TYPE	Char	4			Column Type
5	COLUMN_START	Num	4	8.		Column Start
6	COLUMN_WIDTH	Num	4	8.		Column Width
7	FORMAT	Char	49			Column Format
8	CODE_RANK	Num	8			Code Rank
9	CHAR_START	Char	16			
10	CHAR_END	Char	16			
11	NUM_START	Num	8			Numeric Start Value
12	NUM_END	Num	8			Numeric End Value
13	JOIN_STRING	Char	256	\$CHAR256.		Statistics join string
14	VALUE_STRING	Char	256	\$CHAR256.		Format value label
15	LISTING_RANK	Num	8	BEST12.		
16	LABEL_STRING	Char	256			Format value label
17	FREQUENCY	Num	8	COMMA12.		
18	PERCENT	Num	8	5.1		

## The XML file is generated in sections

- The `<studyDscr>` and `<fileDscr>` elements
- 'by' processing

by

`varnum`

`code_rank`

`;`

## The DATA step can generate mark-up strings quite easily

```
markup_string = cats(  
    '<universe>',  
    universe,  
    '</universe>'  
);  
markup_len = length(trim(markup_string)) ;  
put @tag_col markup_string $VARYING. markup_len ;
```

## The DATA step can generate mark-up strings quite easily

```
markup_string = cats(  
    '<universe>',  
    htmlencode(universe, 'amp apos lt gt quot'),  
    '</universe>'  
);  
markup_len = length(trim(markup_string));  
put @tag_col markup_string $VARYING. markup_len ;
```

```
<universe>Applicable for all respondents</universe>
```

## The DATA step can generate mark-up strings quite easily

```
id = 'var00052' ;  
name = 'BIRTHWGT_OZ1' ;
```

```
var_tag = cats(  
    '<var ID="' ,  
    trim(ID) ,  
    '" name="' ,  
    trim(name) ,  
    '">' ,  
    ) ;
```

```
<var ID="var00052" name="BIRTHWGT_OZ1">
```

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The National Survey of Family Growth (NSFG) gathers information on family life, marriage and divorce, pregnancy, infertility, use of contraception, and men's and women's health. The survey results are used by the U.S. Department of Health and Human Services and others to plan health services and health education programs, and to do statistical studies of families, fertility, and health. Links to some of those studies are included on this web site, under "[Publications and Information Products](#)."

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- [Female Pregnancy File Codebook](#) ▶
- [Male Respondent File Codebook](#) ▶
- [Public Use Data Files, Codebooks, and Documentation](#) ▶

### National Survey of Family Growth, 2006-2010

Search:  in all files ▼

   [\(search tips\)](#)

## Webdoc:

### Online Codebook Documentation

This online documentation tool permits interactive access to the 2006-2010 NSFG codebook documentation for all 3 public use files. Links are provided to supplementary information, such as recode definitions (specifications) for each recoded variable. See the User's Guide for NSFG 2006-2010 for more information. To begin, click on the item of interest in the left-hand menu, or enter a search term in the box above.

**Continuous NSFG, 2006-2010:**

[CDC Home](#) | [NCHS Home](#) | [NSFG Home](#)

## NSFG 2006-2010

Female Respondent File Codebook ▶  
Female Pregnancy File Codebook ▶  
Male Respondent File Codebook ▶  
Public Use Data Files, Codebooks, and Documentation ▶

### National Survey of Family Growth, 2006-2010

Search:  in   ([search tips](#))

[NSFG 2006-2010](#)

## Female Respondent File

[Respondent ID and Screener Items](#)

- [Section A](#)
- [Section B](#)
- [Section C](#)
- [Section D](#)
- [Section E](#)
- [Section F](#)
- [Section G](#)
- [Section H](#)
- [Section I](#)
- [Section J](#)
- [Recodes](#)
- [Weights](#)

CDC Home | NCHS Home | NSFG Home

## NSFG 2006-2010

Female Respondent  
File Codebook ▶

Female Pregnancy  
File Codebook ▶

Male Respondent  
File Codebook ▶

Public Use Data Files,  
Codebooks, and  
Documentation ▶

**National Survey of Family Growth, 2006-2010**

Search:  in all files ▼

([search tips](#))

[NSFG 2006-2010 :: Female File](#)

## Respondent ID and Screener Items

[Respondent ID and screener items](#)

[next](#)

[Create codebook for Respondent ID and Screener Items](#)

[CDC Home](#) | [NCHS Home](#) | [NSFG Home](#)

## NSFG 2006-2010

Female Respondent File Codebook ▶  
Female Pregnancy File Codebook ▶  
Male Respondent File Codebook ▶  
Public Use Data Files, Codebooks, and Documentation ▶

**National Survey of Family Growth, 2006-2010**

Search:  in all files ▼

([search tips](#))

[NSFG 2006-2010](#) :: [Female File](#) :: [Respondent ID and Screener Items](#)

### Respondent ID and screener items

[CASEID](#) -- Respondent ID number  
[RSCRNINF](#) -- R is screener informant  
[RSCRAGE](#) -- R's age as reported in screener  
[RSCRHISP](#) -- R is reported as Hispanic in the screener  
[RSCRACE](#) -- R's race as reported in screener

[next](#)

[Create codebook for Respondent ID and screener items](#)

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## NSFG

### 2006-2010

- [Female Respondent File Codebook](#) ▶
- [Female Pregnancy File Codebook](#) ▶
- [Male Respondent File Codebook](#) ▶
- [Public Use Data Files, Codebooks, and Documentation](#) ▶

### National Survey of Family Growth, 2006-2010

Search:

in

all files
▼

[\(search tips\)](#)

[NSFG 2006-2010](#) :: [Female File](#) :: [Respondent ID and Screener Items](#) :: [Respondent ID and screener items](#)

## RSCRRACE ( 10-10 )

**Variable Type :** Raw

**Description :** R's race as reported in screener

value	label	Total
1-3	Other race groups	863
4	Black or African American	2606
5	White	6964
6	Hispanic	1846
<b>Total</b>		<b>12279</b>

**Universe :** Year 1: Applicable for all respondents Starting in [Quarter 6](#), Year 2: Applicable for all non-Hispanic respondents

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[CDC Home](#) | [NCHS Home](#) | [NSFG Home](#)

## NSFG 2006-2010

[Female Respondent File Codebook](#) ▶  
[Female Pregnancy File Codebook](#) ▶  
[Male Respondent File Codebook](#) ▶  
[Public Use Data Files, Codebooks, and Documentation](#) ▶

**National Survey of Family Growth, 2006-2010**

Search:  in all files ▼

   [\(search tips\)](#)

[NSFG 2006-2010](#) :: [Female File](#) :: [Weights](#) :: [Date of interview and questionnaire model timepoints](#)

## Quarter ( 6243-6244 )

**Variable Type :** Raw

**Description :** Quarter when case was sampled

value	label	Total
1-2	2006	1647
3-6	2007	2804
7-10	2008	2905
11-14	2009	3233
15-16	2010	1690
<b>Total</b>		<b>12279</b>

**Universe :** Applicable for all respondents

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## NSFG 2006-2010

Female Respondent File Codebook ▶  
Female Pregnancy File Codebook ▶  
Male Respondent File Codebook ▶  
Public Use Data Files, Codebooks, and Documentation ▶

**National Survey of Family Growth, 2006-2010**

Search:  in all files ▼

([search tips](#))

[NSFG 2006-2010](#) :: [Female File](#) :: [Respondent ID and Screener Items](#)

### Respondent ID and screener items

[CASEID](#) -- Respondent ID number  
[RSCRNINF](#) -- R is screener informant  
[RSCRAGE](#) -- R's age as reported in screener  
[RSCRHISP](#) -- R is reported as Hispanic in the screener  
[RSCRACE](#) -- R's race as reported in screener

[next](#)

[Create codebook for Respondent ID and screener items](#)

## NSFG 2006-2010

Female Respondent  
File Codebook ▶

Female Pregnancy  
File Codebook ▶

Male Respondent  
File Codebook ▶

Public Use Data Files,  
Codebooks, and  
Documentation ▶

[CDC Home](#) | [NCHS Home](#) | [NSFG Home](#)

### National Survey of Family Growth, 2006-2010

Search:

in all files

[\(search tips\)](#)

#### Female File :: Section W :: Date of interview and questionnaire model timepoints

##### cmintvw(6226-6229)

Variable Type : Computed

Description : Century month for date of interview (Computed in Flow Check A-1)

value	label	Total
1278-1326	June 2006-June 2010	12279
<b>Total</b>		<b>12279</b>

**Universe :** Applicable for all respondents

##### cmlstyr(6230-6233)

Variable Type : Computed

Description : Century month for month/year of interview minus one year (Computed in Flow Check A-1)

value	label	Total
1266-1278	JUNE 2005-JUNE 2006	3106
1279-1290	JULY 2006-JUNE 2007	2761



1291-1302 JULY 2007-JUN 2008	4722
1303-1326 JULY 2008-JUN 2010	1690
<b>Total</b>	<b>12279</b>

**Universe :** Applicable for all respondents

**cmjan3yr(6234-6237)**

Variable Type : Computed

Description : Century month for month/year of interview minus 3 years (Computed in Flow Check A-1)

value label	Total
1237-1285 Jan 2003-Jan 2007	12279
<b>Total</b>	<b>12279</b>

**Universe :** Applicable for all respondents

**cmjan5yr(6238-6241)**

Variable Type : Computed

Description : Century month for month/year of interview minus 5 years (Computed in Flow Check A-1)

value label	Total
1213-1261 Jan 2001-Jan 2005	12279
<b>Total</b>	<b>12279</b>

**Universe :** Applicable for all respondents

## questyear(6242-6242)

Variable Type : Computed

Description : Questionnaire version year (1, 2, 3, or 4)

value label		Total
1	Questionnaire version year 1	3073
2	Questionnaire version year 2	2778
3-4	Questionnaire version year 3	6428
<b>Total</b>		<b>12279</b>

**Universe :** Applicable for all respondents

## Quarter(6243-6244)

Variable Type : Raw

Description : Quarter when case was sampled

value label	Total	
1-2	2006	1647
3-6	2007	2804
7-10	2008	2905
11-14	2009	3233
15-16	2010	1690
<b>Total</b>	<b>12279</b>	

**Universe :** Applicable for all respondents

## NSFG Variable Editor

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Edit

Log out pawright

### Main Menu

Manage Studies

Manage Datasets

Manage Variable Groups

Manage Variables













Manage Categories

### Filters

Archive

ICPSR

### Manage Studies for 'ICPSR'

Number ▲	Title	Status	
4157	National Survey of Family Growth, Cycle 6	Submitted	     
9998	National Survey of Family Growth, 2011-2020	In Process	     

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## NSFG Variable Editor

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### Main Menu

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Manage Categories

### Filters

#### Archive

ICPSR


#### Study

National Survey of Family Growth, 2011-2

### Manage Datasets for 'National Survey of Family Growth, 2011-2020'

Number ▲	Title	Status	Population	Restricted
2	NSFG Female Respondent Pregnancies, 2011-2013	In Process	1	false
4	NSFG Female Respondents, 2011-2013	In Process	1	false
5	NSFG Male Respondents, 2011-2013	In Process	1	false

Page 1 of 1 |< < 1 > >|

 Import Dataset

Edit

Log out pawright

## Main Menu

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### Study

National Survey of Family Growth, 2011-2






### Dataset

NSFG Female Respondent Pregnancies,

### Level 1 Variable Group

-- None --

## Manage VariableGroups for 'NSFG Female Respondent Pregnancies, 2011-2013'

Name	Parent	
Pregnancy Variables	-- None --	    

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Edit

Log out pawright

## Main Menu

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National Survey of Family Growth, 2011-2














































### Dataset

NSFG Female Respondent Pregnancies,

### Level 1 Variable Group

Pregnancy Variables

## Manage VariableGroups for 'NSFG Female Respondent Pregnancies, 2011-2013'

Name	Parent	
Date of interview and questionnaire model timepoints	Pregnancy Variables	    
Pregnancy recode imputation flags	Pregnancy Variables	    
Respondent ID and Section B raw variables	Pregnancy Variables	    
Respondent recode imputation flags included on pregnancy file	Pregnancy Variables	    
Section B pregnancy-based recodes	Pregnancy Variables	    
Section E pregnancy-based recodes	Pregnancy Variables	    
Section E raw variables	Pregnancy Variables	    
Selected respondent file variables	Pregnancy Variables	    
Weights and related variables	Pregnancy Variables	    

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### Dataset

NSFG Female Respondent Pregnancies,

### Level 1 Variable Group

Pregnancy Variables

### Level 2 Variable Group

Date of interview and questionnaire mode

### Error State

None

## Manage Variables

## Bulk Edit Variables

### Limit Results by Variable Name

To only view variables of a certain name, type a name or partial name of a variable and then press ENTER.

To view ALL variables within the context of the current filters, clear out this field and then press ENTER.

	Sort Value ▲	Name	Edited Label	Type
▲ ▼	436	CMINTVW	Century month of interview date	compu
▲ ▼	437	CMLSTYR	Century month of interview minus 1 year (cmintw-12)	compu
▲ ▼	438	CMJAN3YR	Century month for the January three years prior to cmintw	compu
▲ ▼	439	CMJAN5YR	Century month for the January five years prior to cmintw	compu
▲ ▼	440	QUESTYEAR	Questionnaire version year (1, 2, 3 or 4)	compu
▲ ▼	441	QUARTER	Quarter when case was sampled	raw
▲ ▼	442	PHASE	Regular- or double-sample portion of the quarter	raw
▲ ▼	443	YEAR	Calendar year of fieldwork	raw

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Select All For Bulk Edit

## Main Menu

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### Level 1 Variable Group

Pregnancy Variables

### Level 2 Variable Group

Date of interview and questionnaire mode

### Error State

-- None --

## Manage Variables

## Bulk Edit Variables

### Edit Variable

#### Sort Value

440

A numeric value that reflects the sort order that the variable appears in relation to others. (mandatory, numeric)

#### Name

QUESTYEAR

The variable name, unique within the dataset. (mandatory, text, must be unique within the dataset)

#### Label

Questionnaire version year (1, 2, 3 or 4)

The original label on the variable. (optional, text)

#### Edited Label

Questionnaire version year (1, 2, 3 or 4)

The edited label on the variable. (optional, text)

#### Type

computed

The variable's type. (optional)

#### Question Number

The question number associated to the variable. (optional, text)

#### Question

Questionnaire version year (1, 2, 3, or 4)

#### Universe Statement

Applicable for all pregnancies (respondent-level variable)

The universe statement for the variable. (optional, text)

#### Notes

No VARNOTES string.

The notes associated to the variable. (optional, text)

#### Comments

Any comments an editor may want to attach to the variable. (optional, text)

#### Minimum Value

The minimum value measurement describing the response to this variable. Only specify this when there are no categories associated to this variable. (optional, numeric)

#### Maximum Value

The maximum value measurement describing the response to this variable. Only specify this when there are no categories associated to this variable. (optional, numeric)



## Editable Editor

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### Manage Datasets for 'National Survey of Family Growth, 2011-2020'

Number ▲	Title	Status	Population	Restricted	
2	NSFG Female Respondent Pregnancies, 2011-2013	In Process	1	false	
4	NSFG Female Respondents, 2011-2013	In Process	1	false	
5	NSFG Male Respondents, 2011-2013	In Process	1	false	

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Import Dataset

roups

Family Growth, 2011-2

The NSFG Variable Editor uses Grails as a framework utilizing the Groovy language. Grails utilizes several common open source frameworks such as Spring (for decoupling web/db layers), Hibernate (object-relational mapping), Velocity (HTML templates), and many others. Underneath it all, Java technology is utilized as it runs in a Tomcat 7 web container. Apache Shiro is used as the authentication/authorization framework, authentication is done against UM's Active Directory instance, and the AD instance is also used to govern user access to the application (through group associations). Oracle is used at the back end to store most of the data, while the Compass framework abstracts a Lucene index for search capabilities. While the Lucene index and database entries are mostly kept in sync per update, it is necessary to disable the synchronization during bulk updates (i.e., DDI imports) for optimal performance. In this case, the index is updated shortly after the database when these bulk updates occur.

The screenshot displays the SAS XML Mapper application window. The main interface is divided into several sections:

- Top Panel:** Contains menu options (File, Tools, Help) and a toolbar with icons for file operations and mapping.
- Left Panel:** Shows the current mapping configuration as `<no data> [1] {1}`.
- Right Panel (Properties):** Configures the `AUTO_GEN` mapping. Fields include:
  - Name: `AUTO_GEN`
  - Description: (empty)
  - Path: (empty)
  - End Path: (empty) with a `Begin/End` dropdown menu.
  - Options:  Retain,  Replace.
- Tree View:** A hierarchical tree showing the mapping structure:
  - `AUTO_GEN` (selected)
  - `[None]`
  - `Namespaces`
  - `codeBook`
  - `stdyDscr`
  - `citation`
  - `titlStmt`
- Bottom Panel (XMLMap):** Shows the generated SAS code for the mapping. The code includes:
 

```
XMLMap: R:\FIXES\NSFG Cycle 8\xml2ds.map
<?xml version="1.0" encoding="UTF-8"?>
<!-- ##### -->
<!-- 2013-03-22T17:58:04 -->
<!-- SAS XML Libname Engine Map -->
<!-- Generated by XML Mapper, 903000.0.0.20110518190000_v930 -->
<!-- ##### -->
<SXLEMAP name="AUTO_GEN" version="2.1">
  <NAMESPACES count="0"/>
  <!-- ##### -->
  <TABLE description="codeBook" name="codeBook">
```
- Status Bar:** Displays `XMLMap loaded: xml2ds.map` and system icons (0 errors, 1 info, 13 warnings, 50 messages).

The screenshot displays the SAS XML Mapper application window. The title bar reads "SAS XML Mapper" and the menu bar includes "File", "Tools", and "Help". The toolbar contains icons for opening, saving, and other file operations. Below the toolbar, there are tabs for "Condensed", "Full", and "Schema". The main interface is divided into several sections:

- Left Panel:** Shows a tree view with a single node: `<no data> [1] {1}`.
- Properties Panel:** Contains fields for:
  - Name:** AUTO\_GEN
  - Description:** (empty)
  - Path:** (empty)
  - End Path:** (empty) with a "Begin/End" dropdown menu.
  - Retain:**
  - Replace:**
- Right Panel:** Shows a tree view for the selected "AUTO\_GEN" node, listing various elements:
  - [None]
  - Namespaces
  - codeBook
  - stdyDscr
  - citation
  - titlStmt
  - fileDscr
  - fileTxt
  - dataDscr
  - varGrp
  - var
  - location
  - qstn
  - catgry
  - catStat

At the bottom of the window, a status bar indicates "XMLMap loaded: xml2ds.map" and shows system icons for error, warning, and refresh, along with a taskbar showing the number of items (1) and a page number (50).

The screenshot displays the SAS XML Mapper application window. The title bar reads "SAS XML Mapper". The menu bar includes "File", "Tools", and "Help". Below the menu bar is a toolbar with icons for file operations and mapping. The main interface is divided into several panes:

- Left Pane:** Shows a tree view with a single node: `<no data> [1] {1}`.
- Top Right Pane:** Contains a tabbed interface with the following tabs: "Properties", "Format", "Condition", "Enumeration", "Class", "XMLMap Settings", "Namespaces", and "Output". The "Properties" tab is active.
- Properties Pane:** Contains the following fields:
  - Name:** A text box containing "AUTO\_GEN".
  - Description:** An empty text box.
  - Path:** An empty text box.
  - End Path:** An empty text box followed by a dropdown menu set to "Begin/End".
  - Retain:** An unchecked checkbox.
  - Replace:** An unchecked checkbox.
- Bottom Right Pane:** Shows a hierarchical tree view of the XML schema. The root node is "AUTO\_GEN", which is highlighted. Underneath it are several child nodes:
  - [None]
  - Namespaces
  - codeBook
    - codeBook\_ORDINAL
  - stdyDscr
  - citation
  - titlStmt
  - fileDscr
  - fileTxt
  - dataDscr
  - varGrp
  - var
  - location
  - qstn
  - catgry
  - catStat

- Status Bar:** At the bottom, it displays "XMLMap loaded: xml2ds.map" on the left and system tray icons on the right, including a taskbar showing 13 open windows and 50 active processes.

The screenshot displays the SAS XML Mapper application window. The title bar reads "SAS XML Mapper". The menu bar includes "File", "Tools", and "Help". Below the menu bar is a toolbar with icons for opening, saving, and other functions. The main interface is divided into several panes:

- Left Pane:** Shows a tree view with a single node: `<no data> [1] {1}`.
- Top Right Pane:** Contains tabs for "Properties", "Format", "Condition", "Enumeration", "Class", "XMLMap Settings", "Namespaces", and "Output". The "Properties" tab is active, showing fields for:
  - Name: `AUTO_GEN`
  - Description: (empty)
  - Path: (empty)
  - End Path: (empty) with a "Begin/End" dropdown menu.
  - Options:  Retain,  Replace
- Bottom Right Pane:** Shows a hierarchical tree view of the XML map structure:
  - AUTO\_GEN** (selected)
    - [None]
    - Namespaces
    - codeBook
      - codeBook\_ORDINAL
    - stdyDscr
      - codeBook\_ORDINAL
      - stdyDscr\_ORDINAL
    - ID
    - citation
    - titlStmt
    - fileDscr
    - fileTxt
    - dataDscr
    - varGrp
    - var
    - location
    - qstn
    - catgry
    - catStat

The status bar at the bottom indicates "XMLMap loaded: xml2ds.map" and shows system icons for error, warning, and information, along with a taskbar showing 13 windows and 50 tasks.

The screenshot displays the SAS XML Mapper application window. The title bar reads "SAS XML Mapper". The menu bar includes "File", "Tools", and "Help". Below the menu bar is a toolbar with icons for opening, saving, and other functions. The main interface is divided into several panes:

- Left Pane:** Shows a tree view of the XML schema. The current view is "Condensed", showing a single node: `<no data> [1] {1}`.
- Properties Pane:** Displays configuration for the selected element, "AUTO\_GEN". Fields include:
  - Name: `AUTO_GEN`
  - Description: (empty)
  - Path: (empty)
  - End Path: (empty) with a "Begin/End" dropdown menu.
  - Options:  Retain,  Replace
- Tree View:** A detailed tree view of the XML schema structure. The root node is "AUTO\_GEN". It contains several child elements:
  - [None]
  - Namespaces
  - codeBook
    - codeBook\_ORDINAL
  - stdyDscr
    - codeBook\_ORDINAL
    - stdyDscr\_ORDINAL
  - ID
  - citation
    - stdyDscr\_ORDINAL
    - citation\_ORDINAL
  - titlStmt
  - fileDscr
  - fileTxt
  - dataDscr
  - varGrp
  - var
  - location
  - qstn

At the bottom of the window, a status bar indicates "XMLMap loaded: xml2ds.map". On the far right, there are system tray icons showing 0 errors, 0 warnings, 0 messages, 1 information icon, and a taskbar showing 13 windows and 50 items.

The screenshot displays the SAS XML Mapper application window. The title bar reads "SAS XML Mapper". The menu bar includes "File", "Tools", and "Help". Below the menu bar is a toolbar with icons for opening, saving, and other functions. The main interface is divided into several sections:

- Left Panel:** Shows a tree view of the XML document. The root node is "<no data> [1] {1}".
- Properties Panel:** Located on the right, it shows the configuration for the selected element, "AUTO\_GEN". The fields are:
  - Name: AUTO\_GEN
  - Description: (empty)
  - Path: (empty)
  - End Path: (empty) with a "Begin/End" dropdown menu.
  - Retain:
  - Replace:
- Tree View:** A detailed tree view of the XML structure. The root is "AUTO\_GEN", which contains:
  - [None]
  - Namespaces
  - codeBook
    - codeBook\_ORDINAL
  - stdyDscr
    - codeBook\_ORDINAL
    - stdyDscr\_ORDINAL
  - ID
  - citation
    - stdyDscr\_ORDINAL
    - citation\_ORDINAL
  - titlStmt
    - citation\_ORDINAL
    - titlStmt\_ORDINAL
    - titl
  - fileDscr
  - fileTxt
  - dataDscr
  - varGrp

- Bottom Status Bar:** Displays "XMLMap loaded: xml2ds.map" and system icons for error, warning, and information, along with page numbers 13 and 50.



The screenshot displays the SAS XML Mapper application window. The title bar reads "SAS XML Mapper". The menu bar includes "File", "Tools", and "Help". Below the menu bar is a toolbar with icons for file operations and schema management. The main interface is divided into several panes:

- Left Pane:** Shows a tree view with a single node: `<no data> [1] {1}`.
- Properties Pane:** Contains fields for:
  - Name:** AUTO\_GEN
  - Description:** (empty)
  - Path:** (empty)
  - End Path:** (empty) with a "Begin/End" dropdown menu.
  - Retain:**
  - Replace:**
- Tree View:** A hierarchical tree structure starting with **AUTO\_GEN**. It includes:
  - [None]
  - Namespaces
  - codeBook
    - codeBook\_ORDINAL
  - stdyDscr
    - codeBook\_ORDINAL
    - stdyDscr\_ORDINAL
  - ID
  - citation
    - stdyDscr\_ORDINAL
    - citation\_ORDINAL
  - titlStmt
    - citation\_ORDINAL
    - titlStmt\_ORDINAL
    - titl
  - fileDscr
    - codeBook\_ORDINAL
    - fileDscr\_ORDINAL
    - ID

The status bar at the bottom indicates "XMLMap loaded: xml2ds.map" and shows system icons for error (0), warning (0), and information (1), along with page numbers 13 and 50.

The screenshot shows the SAS XML Mapper application window. The title bar reads "SAS XML Mapper". The menu bar includes "File", "Tools", and "Help". Below the menu bar is a toolbar with icons for opening, saving, and other functions. The main interface is divided into several sections:

- Left Panel:** Shows a tree view with a single node: `<no data> [1] {1}`.
- Properties Panel:** Contains fields for "Name" (set to "AUTO\_GEN"), "Description", "Path", and "End Path". There are also checkboxes for "Retain" and "Replace".
- Right Panel:** Displays a hierarchical tree of XML elements. The root is "var", which contains:
  - dataDscr\_ORDINAL
  - var\_ORDINAL
  - ID
  - name
  - labl
  - imputation
  - universe
  - notesThe "location" element contains:
  - var\_ORDINAL
  - location\_ORDINAL
  - StartPos
  - widthThe "qstn" element contains:
  - var\_ORDINAL
  - qstn\_ORDINAL
  - qstnLit
  - seqNoThe "catgry" element is also visible at the bottom.

At the bottom of the window, a status bar indicates "XMLMap loaded: xml2ds.map" and shows system tray icons for 0 errors, 0 warnings, 0 messages, 1 information, 13 windows, and 50 objects.

## Using SAS to generate DDI-Codebook XML from Information Managed in Excel Spreadsheets

Philip A. Wright