

Yes, We Can... Save SAS® Formats

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Introduction

- A SAS format is a user-friendly way of displaying numeric or character data.
- Without explicit value labels, other users must rely on a codebook or data dictionary to interpret the data, the tables or the charts with which they are working.
- Formats allow you to add meaning to codes, group codes or data points.
- Formats also let you recode and reformat data
 - Please see the SAS Online Documentation for more details.



What is a SAS Format?

- SAS formats are used to make coded information more user-friendly.
 - 1 Yes
 - 0 No

 - 1 Male
 - 2 Female
- SAS allows you to save your formats in a catalog so you can re-use them.



Creating SAS Formats

- You create formats using the FORMAT procedure

```
PROC FORMAT LIBRARY=SASDATA.English;
```

```
VALUE YESNOFMT
```

```
1 = 'YES'
```

```
2 = 'NO'
```

```
OTHER = 'N/A';
```

```
RUN;
```

- You also need the FORMAT statement in a data step to connect a variable to a format.

```
FORMAT Q01-Q03 YESNOFMT.;
```



How to Save a Format

- All formats are stored in a catalog.
 - A catalog is just another term for a collection of formats.
- By default , SAS places your formats in the WORK library
- It is placed in a catalog called FORMATS.
 - temporary formats catalogs.
 - deleted at the end of each session.



What are SAS Libraries?

- Tells SAS where to put the catalog and what to call it.
 - Put your formats in a library other than the default WORK library.
 - So what is a SAS library?
 - » A SAS library is just a "short cut" or a nickname to a sub-directory found somewhere on a hard drive.
 - » The LIBNAME statement defines the nickname.

LIBNAME SASDATA 'C:\SASDATA'



Saving a Format to a SAS Catalog

- The catalog is where the formats are stored.
- The name can be any valid dataset name.
- If you don't specify a file name, SAS will provide one for you.
 - The default name is "FORMATS".
 - If the formats are for a specific file or purpose
 - » use the name of the SAS dataset file
 - » or something meaningful

```
PROC FORMAT LIBRARY=SASDATA.MYFILENAME;
```



How to Save a Format

- Now that you have a SAS format catalog...
 - What order to search catalogs
 - » Base SAS: **WORK LIBRARY**
 - » Enterprise Guide: **WORK LIBRARY EGTASK SASUSER**
 - » Enterprise Guide with BI:
APFMTLIB WORK LIBRARY EGTASK SASUSER
- The default order is always searched first unless you specify a different order.

```
OPTIONS FMTSEARCH = ( SASDATA.MYCAT );
```

```
OPTIONS FMTSEARCH=( SASDATA.MYCAT WORK );
```



Switching languages

- Old school

```
OPTIONS FMTSEARCH=( SASDATA.ENGLISHFMT );
```

```
OPTIONS FMTSEARCH=( SASDATA.FRENCHFMT );
```

- New School

```
OPTIONS LOCALE=en_CA;
```

```
OPTIONS LOCALE=fr_CA;
```

```
OPTIONS FMTSEARCH=( SASDATA.ALLFMT/LOCALE );
```

- The LOCALE= system option is used to specify the locale, which reflects the local conventions, language, and culture a geographical region.

» en_CA English Canada

» fr_CA French Canada



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Switching Languages

- Similar catalog naming

Filename	Filesize	Filetype	Last modified
..			
alldata.sas7bdat	42,336,2...	SAS Data Set	30/09/2015 10:57:00 A...
davetimelinessbyfinancia...	786,432	SAS Data Set	30/09/2015 10:57:00 A...
fielddescription.sas7bdat	212,992	SAS Data Set	30/09/2015 10:57:00 A...
finacialmapping.sas7bdat	2,752,512	SAS Data Set	30/09/2015 10:57:00 A...
finacialmappingkim.sas7...	2,752,512	SAS Data Set	30/09/2015 10:57:00 A...
formats_en_ca.sas7bcat	24,576	SAS Catalog	30/09/2015 10:57:00 A...
kei_daily.sas7bdat	82,944	SAS Data Set	30/09/2015 10:57:00 A...
stubs_en_ca.sas7bcat	471,040	SAS Catalog	30/09/2015 10:57:00 A...
stubs_fr_ca.sas7bcat	344,064	SAS Catalog	30/09/2015 10:57:00 A...
tbl_frc.sas7bdat	443,392	SAS Data Set	30/09/2015 10:57:00 A...
tbl_paa.sas7bdat	181,248	SAS Data Set	30/09/2015 10:57:00 A...
tbl_pe.sas7bdat	2,311,168	SAS Data Set	30/09/2015 10:57:00 A...
tbl_product.sas7bdat	50,176	SAS Data Set	30/09/2015 10:57:00 A...
tbl_timeliness_dtl.sas7bdat	58,368	SAS Data Set	30/09/2015 10:57:00 A...



Using the OPTIONS LOCALE=

- The LOCALE= system option is used to specify the locale, which reflects the local conventions, language, and culture a geographical region.
 - » en_CA English_Canada
 - » fr_CA French_Canada
- Affects OS encoding, default language, date style and papersize.
- For more information see the SAS OnlineDoc
 - » LOCALE System Option
 - » Values for the LOCALE= System Option



Tips on Using Formats

- Drop the formats all together
OPTIONS FMTSEARCH=(WORK LIBRARY) NOFMterr;
- Listing the format search order in the SAS log
PROC OPTIONS OPTION=FMTSEARCH; RUN;
- Sharing formats with other users by creating a SAS library with format catalogs on a common LAN drive.



Sample Example – Prepare you data

```
data work.ValueLabels;
```

```
length label $250 start end 8
```

```
      fmtname $30 type hlo   $1;
```

```
keep label start end fmtname type hlo;
```

```
set DictLib.ValueSetValue;
```

```
start = code;
```

```
end   = code;
```

```
fmtname = cats(ValueSetID,"&Year.", "&Form.");
```

```
type = 'n';
```

```
hlo   = "";
```

```
run;
```



Sample Example – Load, Check & Clean-up

```
proc format library=fmtlib.Stubs1976.locale  
cntlin=work.valuelabels;  
  
run;
```

```
proc catalog catalog=fmtlib.Stubs1976.en_CA;  
contents;  
  
run;
```

```
proc datasets library=work nodetails nolist nowarn;  
delete ValueLabels;  
  
quit;  
  
run;
```



Sample Example – Switching Language

```
%macro setlang;
```

```
  %if &Language. = none
```

```
    %then %do;
```

```
      options locale=en_CA;
```

```
      options fmtsearch=(work library apfmtlib) nofmtterr;
```

```
    %end;
```

```
  %else %do;
```

```
    libname fmtlib '/sas/sasdata/proj/census/Tabulation/EI_Formats';
```

```
    options locale=&language.;
```

```
    options fmtsearch=(fmtlib.Stubs2016/locale
```

```
      fmtlib.Stubs2011/locale
```

```
      ...
```

```
      fmtlib.Stubs1981/locale
```

```
      fmtlib.Stubs1976/locale
```

```
      work library apfmtlib) fmtterr;
```

```
  %end;
```

```
%mend setlang;
```

```
%setlang
```



Sample Example – Closer look

```
libname fmtlib '/sas/.../Tabulation/EI_Formats';
```

```
options locale=&language.;
```

```
options fmtsearch=(fmtlib.Stubs2016/locale  
                    fmtlib.Stubs2011/locale  
                    ...  
                    fmtlib.Stubs1981/locale  
                    fmtlib.Stubs1976/locale
```

```
work library apfmtlib) fmterr;
```



Enterprise Guide – Prompts - &language.

General Prompt Type and Values

Prompt type:
Text

Method for populating prompt:
User selects values from a static list

Number of values:
Single value

Minimum length:
Maximum length:

Include Special Values
 All possible values Missing values

Append formatted values with unformatted values

List of values:

Unformatted Value	Formatted (Displayed) Value	Default
en_CA	English	<input checked="" type="radio"/>
fr_CA	French	<input type="radio"/>
none	Remove variable and valu...	<input type="radio"/>

Allow user to specify additional (unformatted) values

Add
Get Values...
Delete
Clear Default
Move up
Move down



Summary and Questions

- Easy to do
- Create once, use over and over again.
- Versatile
 - Multi-lingual applications
- Sharable
 - Base SAS and Enterprise Guide (stand alone)
 - » Common LAN drives
 - Enterprise Guide using a Business Intelligent (BI) Server
 - » **APFMTLIB** library
 - » common to all users using the same profile



For more information ...

- SAS Global Forum 2012
 - 048-2012 Yes, We Can... Save SAS® Formats – John Ladds
- www.OASUS.ca
 - Localized Messages – Lihsin Hwang May 28, 2015
- SAS OnlineDoc v9.3
 - LOCALE System Option
 - Values for the LOCALE= System Option





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Thank You

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