Search across format libraries in FMTSEARCH option
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ABSTRACT

Often times, programmers want to,

- Search for a particular format that the program uses (Primary Objective)
- Look for existence of the format in all possible format catalogs
- List all available formats in a particular catalog

With the increasing standardization and association of formats into multiple format catalogs, it becomes quite difficult to search for a particular format across all the format libraries. In this paper, we review an approach of developing a company level macro for implementing the above tasks.

INTRODUCTION

Typically, FMTSEARCH system option is used to associate various format catalogs to be searched while executing a SAS program.

If you specify fmtsearch=(protfmt globfmt prodfmt meddra), SAS searches for requested formats or informats in the following order.

- work.formats, library.formats, protfmt.formats, prodfmt.formats, meddra.formats

If we know the format (eg: $dcrsnl) exists in prodfmt library, we run the following to view the format.

```sas
proc format lib=prodfmt fmtlib;
  select $dcrsnl;
run;
```

What if we do not know in which library, the particular format exists or if it exists in multiple libraries, which one is currently being used? Especially, if each library has over 100 formats stored in the catalog.

In this paper, we would like to identify the key programming steps to develop a utility macro.

READ FMTSEARCH OPTION

Assuming format catalog libraries and FMTSEARCH option are defined in AUTOEXEC.sas,

We can and look if a format catalog exists in WORK library and append it in the beginning.

```sas
%let fmtpath = %upcase(%cmpres(%sysfunc(getoption(fmtsearch)) ));
%if %sysfunc(fileexist(work.formats)) %then %do;
  %let fixfmtp = %str(WORK) || " " || %sysfunc(compress(&fmtpath, '()'));
%end;
%else %do;
  %let fixfmtp = %sysfunc(compress(&fmtpath, '()'));
%end;
```

FIXFMTP macro variable will have all the catalog libraries separated by a space.
ACCESS FORMAT LIBRARIES ONE AT A TIME IN THE SAME ORDER

Access each format catalog, one at a time to look for the format.

```sas
%let j=1;
%do %while(%scan(&fixfmtp,&j,%str( )) ne );
  %let fmtone = %scan(&fixfmtp,&j,%str( )); *** Single catalog is read;
  **** Logic to process each format goes here ****;
  %let j = %eval(&j+1);
%end;
```

PROCESS EACH FORMAT CATALOG

1. Using CNTLOUT option, read all the formats in the selected format library in the above do loop, into a dataset.

   ```sas
   proc format lib=&fmtone cntlout=fmtdata;
   ```
   Here is how the FMTDARA dataset looks like, with some key variables:

<table>
<thead>
<tr>
<th>FMTNAME</th>
<th>START</th>
<th>END</th>
<th>LABEL</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEBSOC</td>
<td>0001</td>
<td>0001</td>
<td>2130</td>
<td>C</td>
</tr>
<tr>
<td>AEBSOC</td>
<td>0002</td>
<td>0002</td>
<td>2100</td>
<td>C</td>
</tr>
<tr>
<td>AEPRESL</td>
<td>0</td>
<td>0</td>
<td>ABSENT</td>
<td>N</td>
</tr>
<tr>
<td>AEPRESL</td>
<td>1</td>
<td>1</td>
<td>PRESENT</td>
<td>N</td>
</tr>
</tbody>
</table>

2. For Character formats, $AEBSOC is passed to the macro for search. So, we should look for TYPE variable to see if this is a character format.

   ```sas
   data fmtdata;
   set fmtdata
   %if %index(&fmtin, '$') %then %do;
   where upcase(type)='C';
   %end;
   run;
   ```

3. Search for the format in the above dataset. $ Sign should be compressed while doing the comparison.

4. Retain a variable, FLAG to see if there is a match any where in the dataset for the format we are searching.

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6. At the end of the dataset, create a macro variable to find out whether the format was found.

   ```sas
   if last then call symput('exflag', put(flag, 1.));
   ```

7. Print the format from the current format library, if the exflag is 1 and exit the macro. We do not need to search for the other format catalogs.

   ```sas
   %if %cmpres(&exflag)=1 %then %do;
   proc format cntlin=fmtdata fmtlib;
   title "Format was found in %upcase(&fmtone) Library";
   select &fmtin;
   run;
   %goto exit;
   %end;
   ```
8. To look for existence of the format in all format libraries, we can pass another macro parameter, such as prtall=y. The logic for exflag will be eliminated and it prints the format from all available format catalogs.

9. To list all available formats from a particular format, along with number of values.

```sql
proc sql;
   Select fmtname, count(*) as values from fmtdata group by fmtname;
quit;
```

CONCLUSION

This paper identifies the key steps in creating a macro for searching a particular format across multiple format catalogs. The scope of the macro will be to search all the format catalogs defined in the FMTSEARCH option, which is used extensively.

CONTACT INFORMATION

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