Disclaimer

I'm not a native speaker but I'm doing my best.

If I say something that may be interpreted as either negative or positive (e.g. a joke vs. an offense) I always, always, mean the positive.



Macro Variable Arrays Made Easy with macroArray Sas Package

AP-108



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mva



Macro Variable Arrays

A Macro Variable Array (also, MVA or macro array) is a jargon term for a list of macro variables with a common prefix and numerical sequential suffixes.

```
code: simple MVA

%let a1 = Macro;
%let a2 = Variables;
%let a3 = Array;
```

Usually to get values of an MVA a technique called indirect referencing is used.

&&prefix&suffix



Indirect Reference

- double ampersands (&&) are replaced with a single one (&),
- macro variables (&macVar) are resolved to the value (value),
- any non-macro text is kept "as is",
- repeat until there are no more macrotriggers.

```
code: call to MVA value _____ _ the log - indirect referencing
1 %let a1 = Macro;
3 %let i=1;
5 %put &&a&i;
```

1 &&a&i 3 && a &i 5 & a 1 7 &a1

9 Macro



Macro Variable Arrays

"Standing on the shoulders of giants" ■ Ted Clay ■ David Katz code: %array() ARRAY (days, VALUES=Monday Wednesday Friday Sunday) 2 %put _user_; the log - result global days1 Monday global days2 Wednesday 3 global days3 Friday 4 global days4 Sunday 5 global daysN 4



Macro Variable Arrays

"Standing on the shoulders of giants"

- Ted Clay
- David Katz

set Have;

5 run;

total + value;

```
data Want;
set Have;
where dayName in ( %DO_OVER(days, PHRASE="?"));
total + value;
run;

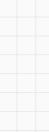
the log - result
data Want;
```

where dayName in ("Monday" "Wednesday" "Friday" "Sunday");

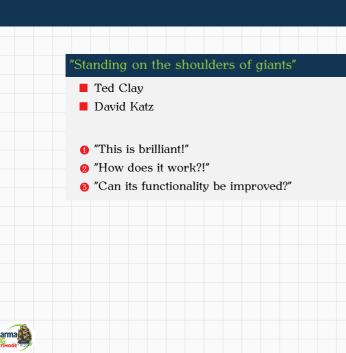
















January 18, 2019

- Can we have %array() working as "pure macro code" (even for creating macro arrays from data sets)?
- MVAs are "one based". Can an MVA created by %array() start indexing from an arbitrary non-negative integer (e.g., 0, 2, 3, etc.)?
- **6** We can create multiple MVAs from multiple variables from a data set. Can we also create MVAs with lists of unique values?
- On we make indirect referencing call to the macro array values more "convenient", e.g., similar to the data step array, like: (prefix[suffix])?
- 6 Can we use SAS functions to alter, modify, or generate MVA values?
- **6** Can we have syntax similar to the one known form 4GL to create MVAs?
- Ocan all those extension be added keeping backward compatibility?

All the answers are: yes we can!

And now, our little internal "Bob the Builder" wants details.



macroArray



The macroArray SAS Package

At the moment the package contains the following macros:

- () %appendArray(),
- 2 %appendCell(),
- 6 %array(),
- %concatArrays(),
- 6 %deleteMacArray(),
- 6 %do_over(),
- 0 %do_over2(),

- 9 %do_over3(),
- 0 %make_do_over(),
- (1) %mcHashTable(),
- @ %mcDictionary(),
- %QzipArrays(),
- %zipArrays(), and
- %sortMacroArray().





SAS Packages Framework

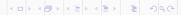


the way to share

github.com/yabwon/SAS_PACKAGES

ORLY?





macroArray in SASPAC



the way to share

github.com/SASPAC/macroarray

ORLY?





Workshop Materials



the way to share

github.com/yabwon/HoW-SASPackages

ORLY?





code used for the demo



the way to share

github.com/SASPAC/macroarray/extras

ORLY?





dziękuję



