

CC-274

From Professional Life to Personal Life: SAS® Makes It Easy

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ABSTRACT:

Many people use SAS in their professional life but there are opportunities to use it in personal life as well. This paper describes an innovative way of applying SAS to make our routine tasks more interesting and thus expand our creativity to a new level. Have a grocery list you use weekly or bi-weekly basis? You can use SAS to keep track of what you buy, when, where and print a list when it is needed. This paper will show the use of SAS Output Delivery System along with the use of PROC REPORT and its options, traffic lighting and SAS time function to create a customized grocery database and grocery list.

INTRODUCTION:

SAS has proven to be one of the most powerful tools in various professional industries. We often use SAS to organize, clean, modify data and report results to our clients. SAS can equally be useful to organize our personal life, modify our habits and thus help us to make better choices. Making a grocery list is one those chores that can easily be taken care of by using SAS. This paper will show some basic SAS procedures like PROC REPORT and its options, traffic lighting and time function that can be used to make a customized grocery list.

BACKGROUND & DATASET:

A master grocery list in excel format was imported to SAS studio to make customize grocery list. The master grocery list contained 7 variables named Item, Amount, Group, Brand, Store, Category, and Schedule. Grocery items were listed into six different groups (Carbohydrate, Protein, Fat, Vegetables, Fruits and Others). Stores were reported as Walmart, Publix and Costco. Schedule for grocery items were listed as bi-weekly and monthly and categorized into breakfast, lunch, dinner and snacks. Different brands for each items were also listed under brand variable. The master grocery list and the full SAS was provided through a GitHub link.

SAS TIME FUNCTION:

INTNX(*custom-interval, start-from, increment*)

SAS time function INTNX can be used to calculate an increment of date, time or datetime value by using intervals of day, week, month or any customized interval that was defined by the user. The INTNX function returns the SAS date value same as the beginning date, time or datetime that is used as the start-form value. SAS date format can be applied to express the date as calendar date.

For this project, customized intervals named *CheckOn* were applied to generate two intervals of 14 days' and 28 days' increment. The *start-form* was listed as the variable LastBought. This variable represented the last grocery date and can be changed after doing each week's grocery by using the master grocery list. The *Check1* variable showed the date for 14 days and *Check2* showed the date for 28 days interval (Source Code: 1). Another variable *Today* was created to represent the current date. This variable was used to determine whether to buy a grocery item or wait for next grocery date. For example, if the grocery item was tagged as a biweekly item then it was also listed with *Check1* interval. Next, if the day interval between *Today* and *CheckOn* was greater than or equal to then it would show as 'Y' under a new variable *Buy*. Otherwise, it would show as 'W' under the variable *Buy* (Source Code: 2) (Figure: 1).

SOURCE CODE 1:

```
data grocery.grocery1;
set grocery.gro1;
LastBought = '20AUG2016'd ;
Today = Today();
Check1 = intnx('Day','20AUG2016'd, 14);
```

```
Check2 = intnx('Day','20AUG2016'd, 28);
```

```
put Check1/Check1 Date9.;
```

```
put Check2/Check2 Date9.;
```

```
run;
```

SOURCE CODE 2:

```
data grocery.g1;
```

```
set grocery.grocery1;
```

```
if Schedule in ('Biweekly')then CheckOn = Check1;
```

```
If Schedule in ('Monthly')then CheckOn = Check2;
```

```
If (Today=>CheckOn) then Buy = 'Y';
```

```
If (Today < CheckOn) then Buy= 'W';
```

```
run;
```

RESULT:

	Breakfast	Whole Wheat Bread	1	20AUG2016	Biweekly	07SEP2016	03SEP2016	Y
Walmart	Breakfast	Almond Milk	2	20AUG2016	Biweekly	07SEP2016	03SEP2016	Y
	Dinner	Brown Rice	1	20AUG2016	Monthly	07SEP2016	17SEP2016	W
	Breakfast	Cereal	1	20AUG2016	Biweekly	07SEP2016	03SEP2016	Y
	Breakfast	Coffee	1	20AUG2016	Monthly	07SEP2016	17SEP2016	W
	Breakfast	Egg White	1	20AUG2016	Biweekly	07SEP2016	03SEP2016	Y

Figure:1 SAS INTNX Result

PROC REPORT:

```
PROC REPORT data= <dataset> <option>;
```

```
Column <Variables name>;
```

```
Define <Variable>/ <Attributes>;
```

```
RUN;
```

After converting the excel file into a SAS data file PROC REPORT statement was used to create the customized grocery list. To import and insert an image at the top of the grocery list Preimage option was . In the define statements, variables were listed and different formats were applied to customize the output as an PDF file (Source Code: 3) (Figure: 2).

SOURCE CODE 3:

```
Title 'GROCERY LIST' font= Arial bold height=4;
```

```
footnote 'Y=Yes W= Wait';
```

```
proc report data =grocery.g1
```

```
style (report) = {preimage = '/home/nushrat1.alam/Mycontent/Grocery.jpg'}
```

```
style (summary) = Header center;
```

```

columns store category item Amount LastBought Schedule Today CheckOn Buy;
define store/order width = 20 style (column) =[font_weight=bold color = Blue];
define category/ display width= 250 style (column) =[font_weight=bold color = Black];

```

RESULT:

GROCERY LIST								
								
Store	Category	Item	Amount	LastBought	Schedule	Today	CheckOn	Buy
Costco	Dinner	Balsamic Vinegar	1	20AUG2016	Monthly	08SEP2016	17SEP2016	W
	Dinner	Chicken Breast	2	20AUG2016	Monthly	08SEP2016	17SEP2016	W

Figure: 2 PROC REPORT Output (Partial)**TRAFFIC LIGHTING:**

For this project, traffic-lighting was applied by using two already known SAS statements: PROC FORMAT and DEFINE statement with options. The first step of traffic lighting was to use PROC FORMAT statement to apply background color on different food groups. For example, group listed as protein was coded as yellow, fat was coded as light orange (Source Code: 4). The next step was to apply this format in the option statement of PROC REPORT step (Source Code: 5) (Figure:3).

SOURCE CODE 4:

```

/*Traffic Lighting*/

proc format;

    value $Dietvalue

    'Protein' ='Yellow'

    'Carbohydrate' = 'Dark Red'

    'Fat'= 'light Orange'

    'Others' = 'Very lightPurple'

    'Vegetables' = 'Green'

    'Fruit' = 'Very light Blue';

```

```
run;
```

SOURCE CODE 5:

```

Title 'GROCERY LIST' font= Arial bold height=4;
footnote 'Y=Yes W= Wait';
proc report data =grocery.g1
    style (report) = {preimage = '/home/nushrat1.alam/Mycontent/Grocery.jpg'}
    style (summary) = Header center ;

```

```

columns store category item Amount Group LastBought Schedule Today CheckOn Buy;
define store/order width = 20 style (column) =[font_weight=bold color = Blue];
define category/ display width= 250 style (column) =[font_weight=bold color = Black];
define item /order width=50;
define amount/ format=2.;
define Group/ style (column) =[font_weight=bold background=$Dietvalue.];

```

RESULT:

Costco	Dinner	Balsamic Vinegar	1	Others	20AUG2016	Monthly	08SEP2016	17SEP2016	W
	Dinner	Chicken Breast	2	Protein	20AUG2016	Monthly	08SEP2016	17SEP2016	W
	Dinner	Olive Oil	1	Fat	20AUG2016	Monthly	08SEP2016	17SEP2016	W
	Dinner	Salmon Fillet	1	Protein	20AUG2016	Monthly	08SEP2016	17SEP2016	W
	Dinner	White Rice	1	Carbohydrate	20AUG2016	Monthly	08SEP2016	17SEP2016	W
	Dinner	Whole Chicken	2	Protein	20AUG2016	Monthly	08SEP2016	17SEP2016	W

Figure: 3 Traffic-lighting**Conclusion:**

The SAS procedures used in this project were some of the basic steps. These can easily be applied by the beginner SAS users to enjoy learning SAS and organizing their personal life. SAS has more advanced procedures and can be performed to create more customizable reports. This paper only described some of the procedures of SAS to keep learning SAS easy, simple and enjoyable for the basic SAS learner.

GitHub Link:

<https://github.com/nushratalam/SESUG-2016>

REFERENCE:

INTNX Function. Retrieved from
<http://support.sas.com/documentation/cdl/en/proc/61895/HTML/default/viewer.htm#a002473627.htm>

CONTACT INFORMATION:

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