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NOTE: This session is executing on the X64_10PRO platform.

NOTE: Updated analytical products:

SAS/STAT 14.3
SAS/ETS 14.3
SAS/OR 14.3
SAS/IML 14.3
SAS/QC 14.3

NOTE: Additional host information:

X64_10PRO WIN 10.0.17763 Workstation

NOTE: SAS initialization used:

real time 6.45 seconds
cpu time 1.60 seconds

WARNING: One or more libraries specified in the concatenated library
SASHELP

WARNING: do not exist. These libraries were removed from the
concatenation.

```
1
/*****
2  /* Program Name: variable creation with arrays
*/
3  /* Program Location: C:\Users\dsingh\Dropbox\Stat_604\Homework\HW6
*/
4  /* Date Created: 6/13/2019
*/
5  /* Author: Dhruv Singh
*/
6  /* Purpose: loops and arrays
*/
7
8  libname hwdata
'C:\Users\dsingh\Dropbox\Tamu\Stat_604\Homework\hwdata' access =
readonly;
NOTE: Libref HWDATA was successfully assigned as follows:
      Engine:          V9
      Physical Name:
C:\Users\dsingh\Dropbox\Tamu\Stat_604\Homework\hwdata
9  libname charity
'C:\Users\dsingh\Dropbox\Tamu\Stat_604\Homework\HW6_DueJune18';
NOTE: Libref CHARITY was successfully assigned as follows:
      Engine:          V9
      Physical Name:
C:\Users\dsingh\Dropbox\Tamu\Stat_604\Homework\HW6_DueJune18
10
11  filename report
11 !
'C:\Users\dsingh\Dropbox\Tamu\Stat_604\Homework\HW6_DueJune18\HW6DSingh_H
W06_PCoutput.pdf';
12
13
14  /* Step 2: reading in chopnjoe data */
15  data chopnjoe;
```

```
16      set hwddata.chopnjoel9;
17  run;
```

NOTE: There were 424 observations read from the data set
HWDATA.CHOPNJOE19.

NOTE: The data set WORK.CHOPNJOE has 424 observations and 24 variables.

NOTE: DATA statement used (Total process time):

```
      real time          0.23 seconds
      cpu time           0.01 seconds
```

```
18
19  * step 2 contd: rotating to narrow form using do loop;
20  data rotate2 (keep=Employee_Id i Organization);
21      set hwddata.chopnjoel9
22          (drop=name department salary amount1-amount10);
23      array contrib{10} $ charity1-charity10;
24      do i=1 to 10;
25          if contrib{i} ne missing then do;
26              Organization=contrib{i};
27              output;
28          end;
29      end;
30  run;
```

NOTE: Variable missing is uninitialized.

NOTE: There were 424 observations read from the data set
HWDATA.CHOPNJOE19.

NOTE: The data set WORK.ROTATE2 has 2243 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```
      real time          0.12 seconds
      cpu time           0.04 seconds
```

```
31
32  /* Step 3: sorting narrow dataset in place */
33  proc sort data = rotate2;
34      by Organization;
35  run;
```

NOTE: There were 2243 observations read from the data set WORK.ROTATE2.

NOTE: The data set WORK.ROTATE2 has 2243 observations and 3 variables.

NOTE: PROCEDURE SORT used (Total process time):

```
      real time          0.10 seconds
      cpu time           0.01 seconds
```

```
36
37
38  /* Step 4: creating sorted charities data in work library */
39  data charities;
40      set hwddata.charities;
41  run;
```

NOTE: There were 256 observations read from the data set
HWDATA.CHARITIES.

NOTE: The data set WORK.CHARITIES has 256 observations and 3 variables.

NOTE: DATA statement used (Total process time):

```
      real time          0.05 seconds
      cpu time           0.04 seconds
```

```

42
43 proc sort data = charities;
44     by Organization;
45 run;

```

NOTE: There were 256 observations read from the data set WORK.CHARITIES.
 NOTE: The data set WORK.CHARITIES has 256 observations and 3 variables.
 NOTE: PROCEDURE SORT used (Total process time):

real time	0.05 seconds
cpu time	0.03 seconds

```

46
47
48 /* Step 5: combining datasets by organization */
49 data combined_data (drop = Org_id);
50     merge rotate2 (in=r)
51         charities (in=c);
52     by organization;
53     if r=1 and c=1;
54 run;

```

NOTE: There were 2243 observations read from the data set WORK.ROTATE2.
 NOTE: There were 256 observations read from the data set WORK.CHARITIES.
 NOTE: The data set WORK.COMBINED_DATA has 2243 observations and 4 variables.
 NOTE: DATA statement used (Total process time):

real time	0.07 seconds
cpu time	0.03 seconds

```

55
56 /* Step 6: transposing marged data from narrow to flat */
57 proc sort data = combined_data;
58     by employee_id;
59 run;

```

NOTE: There were 2243 observations read from the data set WORK.COMBINED_DATA.
 NOTE: The data set WORK.COMBINED_DATA has 2243 observations and 4 variables.
 NOTE: PROCEDURE SORT used (Total process time):

real time	0.06 seconds
cpu time	0.04 seconds

```

60
61 proc transpose data = combined_data
62     out = charity_data (drop = _NAME_ _LABEL_)
63     prefix = Donee_Type;
64     var category;
65     by employee_id;
66     id i;
67 run;

```

NOTE: There were 2243 observations read from the data set WORK.COMBINED_DATA.

NOTE: The data set WORK.CHARITY_DATA has 424 observations and 11 variables.

NOTE: PROCEDURE TRANSPOSE used (Total process time):
real time 0.14 seconds
cpu time 0.07 seconds

```
68
69 * reordering columns ;
70 data charity_data;
71     retain employee_id donee_type1-donee_type10;
72     set charity_data;
73 run;
```

NOTE: There were 424 observations read from the data set WORK.CHARITY_DATA.

NOTE: The data set WORK.CHARITY_DATA has 424 observations and 11 variables.

NOTE: DATA statement used (Total process time):
real time 0.06 seconds
cpu time 0.03 seconds

```
74
75 /* Step 7: final merge, summary variables */
76 proc sort data = charity_data;
77     by employee_id;
78 run;
```

NOTE: There were 424 observations read from the data set WORK.CHARITY_DATA.

NOTE: The data set WORK.CHARITY_DATA has 424 observations and 11 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 0.06 seconds
cpu time 0.01 seconds

```
79
80 * sort employee id for merge ;
81 proc sort data = chopnjoe;
82     by employee_id;
83 run;
```

NOTE: There were 424 observations read from the data set WORK.CHOPNJOE.

NOTE: The data set WORK.CHOPNJOE has 424 observations and 24 variables.

NOTE: PROCEDURE SORT used (Total process time):
real time 0.06 seconds
cpu time 0.04 seconds

```
84
85 * merging;
86 data giving_analysis (drop = relief_amt1-relief_amt10 hunger_amt1-
87     hunger_amt10 i);
87     merge chopnjoe (in=chop)
88         charity_data (in=char); /* org types wide*/
89     by employee_id;
90     if chop=1 and char=1;
91
```

```

92      * creating array for amount contributions;
93      array contrib{*} amount1-amount10;
94
95      * creating a char array for org type;
96      array org_type{10} $ donee_type1-donee_type10;
97
98      * creating empty arrays to record relief hunger amounts;
99      array relief_amt{10};
100     array hunger_amt{10};
101
102     * populating amt arrays;
103     do i=1 to 10;
104         if org_type{i}='Relief' then relief_amt{i}=contrib{i};
105         else relief_amt{i}=0;
106
107         if org_type{i}='Hunger' then hunger_amt{i}=contrib{i};
108         else hunger_amt{i}=0;
109     end;
110
111     * computing decomposed sums;
112     chrty1_amt= sum(of relief_amt{*});
113     chrty2_amt = sum(of hunger_amt{*});
114
115     * creates total contribution variable;
116     total = sum(of contrib{*});
117
118     * percent column;
119     gift_pct = total/salary;
120
121     label chrty1_amt = "Relief Amount"
122           chrty2_amt = "Hunger Amount"
123           total      = "Total Contributions"
124           gift_pct   = "% of Salary Given";
125
126     format gift_pct percent6.1;
127
128     run;

```

NOTE: There were 424 observations read from the data set WORK.CHOPNJJOE.

NOTE: There were 424 observations read from the data set
WORK.CHARITY_DATA.

NOTE: The data set WORK.GIVING_ANALYSIS has 424 observations and 38
variables.

NOTE: DATA statement used (Total process time):

real time	0.20 seconds
cpu time	0.07 seconds

```

129
130 /* Step 8: printing descriptor and data portions of final dataset */
131 ods pdf file = report;
NOTE: Writing ODS PDF output to DISK destination "REPORT", printer "PDF".
132 title 'Step 8: Descriptor Portion of Giving Analysis Data Set';
133 proc contents data = giving_analysis;
NOTE: Writing HTML Body file: sashtml.htm
134 run;

```

NOTE: PROCEDURE CONTENTS used (Total process time):

real time	1.43 seconds
cpu time	0.35 seconds

```
135
136 title 'Step 8: Data Portion of Giving Analysis Data Set';
137 proc print data = giving_analysis noobs label;
138     var employee_id name department salary chrty1_amt chrty2_amt
total gift_pct;
139 run;
```

NOTE: There were 424 observations read from the data set
WORK.GIVING_ANALYSIS.

NOTE: At least one W.D format was too small for the number to be printed.
The decimal may be

shifted by the "BEST" format.

NOTE: PROCEDURE PRINT used (Total process time):

real time	0.58 seconds
cpu time	0.51 seconds

```
140 ods pdf close;
```

NOTE: ODS PDF printed 14 pages to

C:\Users\dsingh\Dropbox\Tamu\Stat_604\Homework\HW6_DueJune18\HW6DSingh_HW
06_PCoutput.pdf.