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1  /*****
2  /* Program Name: DSmith_HW12_prog.sas
3  /* Date Created: 4/8/2023
4  /* Author: Dustin Smith
5  /* Purpose: To complete Homework 12 of stats 604. It seems that we will be creating
6      a new format.
7  /*
8  /* Inputs: July 21 sas file at /home/u63307645/STAT_604_Folder/mylib
9      Outputs: DSmith_HW12_output.pdf at /home/u63307645/STAT_604_Folder/STAT_604_Howework/DSmith_HW12_output.pdf
10 /*
11 /*
12 /*****/
13
14 /*1 Housekeeping*/
15 title;
16 footnote;
17 ods noproctitle;
18
19 /*Assigning Filerefs and librefs*/
20 libname mylib "/home/u63307645/STAT_604_Folder/mylib";
21 filename output "/home/u63307645/STAT_604_Folder/STAT_604_Howework/DSmith_HW12_output.pdf";
22
23 ods pdf file=output;
24
25 /*4 Create a permanent Format*/
26 proc format lib=mylib; /*Works better without the mylib reference*/
27     value tempword
28         33<-HIGH = 'Extreme'
29         28<-33 = 'High'
30         22<-28 = 'Normal'
31         10-22 = 'Low'
32         LOW-<10 = 'Minimal'
33         OTHER = 'N/A';
34 run;
35
36
37 /*5 Create a new data set from the July 2021 data*/
38 data mylib.july21_edit;
39     set mylib.july21(rename=(NAME=dropname));
40     drop TAVG dropname;
41     length NAME $51;
42     NAME = propcase(trim(substr(dropname,1,length(dropname)-7)));
43     TChange = (TMAX - TMIN);
44     label TChange='Daily Change';
45 run;
46
47 /*6 Sort the data by Name and then by date*/
48 proc sort data=mylib.july21_edit;
49     by NAME DATE;
50 run;
51
52
53 /*7 Use the Proc Print to print a matched report to the Assignment*/
54 Options NOFMterr; /*I do not think that I needed this?? My format seemed to work without it as well.*/
55
56 title1 "College Station and Waco Rainfall";
57 title2 "July 2021";
58
59 proc print data=mylib.july21_edit label noobs;
60     where Name='College Station Easterwood Field' or Name='Waco Regional Airport';
61     by STATION NAME;
62     ID STATION NAME;
63     var DATE PRCP TChange;
64     label STATION='Station' NAME='Name' DATE='Date' PRCP='Precipitation';
65     format TChange tempword.;
66     sum PRCP;
67 run;
68
69 /*8 Create a reordered TMAX data set.*/
70 proc sort data=mylib.july21_edit out=byTMAX;
71     by descending TMAX;
72 run;
73
74 /*9 Create a report of the hottest 10 days in July 2021*/
75 title1 "HOT HOT HOT";
76 title2 "July 2021";
77

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78 proc print data=work.byTMAX (obs=10) noobs label;
79     Var STATION NAME DATE TMAX;
80     label TMAX='High Temp' STATION='Station' NAME='Name' DATE='Date';
81     format DATE weekdate32.;
82 run;
83
84 /*10 Display the objects in mylib without the descriptor portion*/
85 title1 "Contents of Mylib Library:";
86
87 proc contents data=mylib._ALL_ nods;
88 run;
89
90 title2 "July21 edited file";
91 title3 "Sorted by Name and Date";
92 proc contents data=mylib.july21_edit;
93 run;
94
95 title2 "Work.byTMAX";
96 title3 "Sorted by Max Temp.";
97 proc contents data=work.byTMAX;
98 run;
99
100 /*Close the ods file*/
101 ods pdf close;
102
103
104 /* Questions
105 A) College Station contained only 'LOW' temperature differences. Whereas Waco had 4 Normal days in temperature change ;
106     2 days with minimal temperature change.
107
108 B) The difference was 4.46-4.01 or .45 in precipitation.
109
110 C) There is also a Formats in the Member Type of Catalog. That is because we created a Format and placed it into the myl
111     (However, I seemed to have more success placing the format in the Work Library.
112
113 D) The highest temperature was 111 on Sunday, July 25, 2021 at Rio Grande Village.
114
115 E) As eight of the top 10 hottest days are at Rio Grande Village, I would guess that is the hottest city in Texas.
116
117 F) There is a new box with SORT information. It includes SORTBY, Validated, and Character Set*/
```