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1  ************************************************************;
2  *  Using the INPUT and PUT Functions to Convert            *;
3  *  Column Types                                            *;
4  ************************************************************;
5  *  Syntax and Example                                      *;
6  *                                                          *;
7  *    DATA output-table;                                    *;
8  *        SET input-table(RENAME=(current-col=new-col));    *;
9  *        ...                                               *;
10 *        column1 = INPUT (source, informat);               *;
11 *        column2 = PUT (source, format);                   *;
12 *        ...                                               *;
13 *    RUN;                                                  *;
14 ************************************************************;
15
16
17 data work.stocks2;
18     set pg2.stocks2;
19     Date2=input(Date,date9.);
20     Volume=input(Volume,comma12.);
21 run;
22
23 data work.stocks2;
24     set pg2.stocks2(rename=(Volume=CharVolume));
25     Date2=input(Date,date9.);
26     Volume=input(CharVolume,comma12.);
27     drop CharVolume;
28 run;
29
30 data work.stocks2;
31     set pg2.stocks2(rename=(Volume=CharVolume Date=CharDate));
32     Volume=input(CharVolume,comma12.);
33     Date=input(CharDate,date9.);
34     Day=put(Date,downame3.);
35     drop Char:;
36 run;
37
38 ************************************************************;
39 *  Demo                                                    *;
40 *  1) Open the PG2.WEATHER_ATLANTA table and notice the    *;
41 *     following:                                           *;
42 *     * ZipCode is a numeric column.                       *;
43 *     * Date and Precip are character columns. A Precip    *;
44 *     value of T means that a trace value was recorded,    *;
45 *     which means a very small amount of precipitation     *;
46 *     that results in no measurable accumulation.          *;
47 *  2) Run the first DATA step.                             *;
48 *  3) View the SAS log. SAS attempts to convert the        *;
49 *     character Precip value to a numeric value using the *;
50 *     w. informat. SAS is successful when the character    *;
51 *     value is a legitimate numeric value such as .27.     *;
52
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*     SAS is unsuccessful when the value is equal to a    *;
*     non-numeric value such as T. A value of T is        *;
*     converted to a missing numeric value.               *;
*  4) View the output table. Notice that TotalPrecip was  *;
*     accurately created for each row. The sum statement  *;
*     ignores the missing values for the Precip values of *;
*     T.                                                  *;
*  5) Add to the DATA step to create a new column named   *;
*     PrecipNum. Use PrecipNum in the assignment          *;
*     statement instead of Precip. Drop the Precip        *;
*     column.                                             *;
*  6) Run the DATA step. Notice that the SAS log no       *;
*     longer contains a note about character values being *;
*     converted to numeric values and no longer contains  *;
*     notes about invalid numeric data for Precip='T'.    *;
*  7) Add to the DATA step to create a numeric column     *;
*     Date from the character column Date. Also, format   *;
*     the numeric Date and drop the character Date.       *;
*  8) Run the DATA step. Confirm that you have a numeric  *;
*     precipitation column and a numeric date column.     *;
*************************************************************;

/* INPUT Function */
data atl_precip;
    set pg2.weather_atlanta(rename=(date=CharDate));
    where AirportCode='ATL';
    drop AirportCode City Temp: ZipCode Precip CharDate;
/*  TotalPrecip+Precip; */
    if Precip ne 'T' then Precipum=input(Precip,6.);
    else PrecipNum=0;
    TotalPrecip+PrecipNum;
    Date=input(CharDate,mmddyy10.);
    format Date date9.;
run;

*************************************************************;
*  9) Run the second DATA step and notice that            *;
*     CityStateZip was accurately created for each row.   *;
*     The CAT functions automatically convert numeric     *;
*     values to character values and remove leading       *;
*     blanks in the converted value. SAS does not write a *;
*     note to the log when values are converted with the  *;
*     CAT functions.                                      *;
* 10) Add to the DATA step to create a character column   *;
*     ZipCodeLast2 that contains the last two digits of   *;
*     the numeric column ZipCode.                         *;
* 11) View the SAS log. SAS converts the numeric ZipCode  *;
*     value to a character value.                         *;
* 12) View the output table. Notice that ZipCodeLast2 is  *;
*     not displaying the last two digits of the ZIP code. *;
*     When SAS automatically converts a numeric value to  *;

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106 *     a character value, the BEST12. format is used, and  *;
107 *     the resulting character value is right-aligned. The *;
108 *     numeric value of 30320 becomes the character value  *;
109 *     of seven leading spaces followed by 30320.          *;
110 * 13) Modify the first argument of the SUBSTR function to *;
111 *     explicitly convert the numeric ZipCode value to a   *;
112 *     character value.                                    *;
113 * 14) View the output table. Notice that ZipCodeLast2 now *;
114 *     displays the last two digits of the ZIP code.       *;
115 ************************************************************;
116 
117 /* PUT Function */
118 data atl_precip;
119     set pg2.weather_atlanta;
```