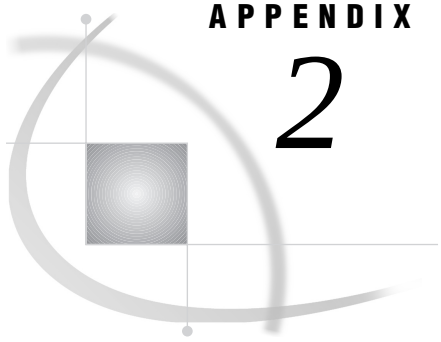

APPENDIX

2

SAS Programs

Creating the Charity Data Set

```
data Charity;
input School $ 1-7 Year 9-12 Name $ 14-20 moneyRaised 22-26
   hoursVolunteered 28-29;
   format moneyRaised dollar8.2;
   format hoursVolunteered f3.0;
   format Year yrFmt.;
   format School schFmt.;
   label School = "Schools";
   label Year = "Years";
datalines;
Monroe  1992 Allison 31.65 19
Monroe  1992 Barry   23.76 16
Monroe  1992 Candace 21.11  5
Monroe  1992 Danny    6.89 23
Monroe  1992 Edward  53.76 31
Monroe  1992 Fiona   48.55 13
Monroe  1992 Gert    24.00 16
Monroe  1992 Harold  27.55 17
Monroe  1992 Ima      5.98  9
Monroe  1992 Jack    20.00 23
```

```
Monroe  1992 Katie   22.11  2
Monroe  1992 Lisa    18.34 17
Monroe  1992 Tonya   55.16 40
Monroe  1992 Max     26.77 34
Monroe  1992 Ned     28.43 22
Monroe  1992 Opal    32.66 14
Monroe  1993 Patsy   18.33 18
Monroe  1993 Quentin 16.89 15
Monroe  1993 Randall 12.98 17
Monroe  1993 Sam     15.88  5
Monroe  1993 Tyra    21.88 23
Monroe  1993 Myrtle  47.33 26
Monroe  1993 Frank   41.11 22
Monroe  1993 Cameron 65.44 14
Monroe  1993 Vern    17.89 11
Monroe  1993 Wendell 23.00 10
Monroe  1993 Bob     26.88  6
Monroe  1993 Leah    28.99 23
Monroe  1994 Becky   30.33 26
Monroe  1994 Sally   35.75 27
Monroe  1994 Edgar   27.11 12
Monroe  1994 Dawson  17.24 16
Monroe  1994 Lou      5.12 16
Monroe  1994 Damien  18.74 17
Monroe  1994 Mona    27.43  7
Monroe  1994 Della   56.78 15
Monroe  1994 Monique 29.88 19
Monroe  1994 Carl    31.12 25
Monroe  1994 Reba    35.16 22
Monroe  1994 Dax     27.65 23
Monroe  1994 Gary    23.11 15
Monroe  1994 Suzie   26.65 11
Monroe  1994 Benito  47.44 18
Monroe  1994 Thomas  21.99 23
Monroe  1994 Annie   24.99 27
Monroe  1994 Paul    27.98 22
Monroe  1994 Alex    24.00 16
Monroe  1994 Lauren  15.00 17
Monroe  1994 Julia   12.98 15
Monroe  1994 Keith   11.89 19
Monroe  1994 Jackie  26.88 22
Monroe  1994 Pablo   13.98 28
Monroe  1994 L.T.    56.87 33
Monroe  1994 Willard 78.65 24
Monroe  1994 Kathy   32.88 11
Monroe  1994 Abby    35.88 10
Kennedy 1992 Arturo  34.98 14
Kennedy 1992 Grace   27.55 25
Kennedy 1992 Winston 23.88 22
Kennedy 1992 Vince   12.88 21
Kennedy 1992 Claude  15.62  5
Kennedy 1992 Mary    28.99 34
Kennedy 1992 Abner   25.89 22
Kennedy 1992 Jay     35.89 35
```

```
Kennedy 1992 Alicia  28.77 26
Kennedy 1992 Freddy  29.00 27
Kennedy 1992 Eloise  31.67 25
Kennedy 1992 Jenny   43.89 22
Kennedy 1992 Thelma  52.63 21
Kennedy 1992 Tina    19.67 21
Kennedy 1992 Eric    24.89 12
Kennedy 1993 Bubba   37.88 12
Kennedy 1993 G.L.    25.89 21
Kennedy 1993 Bert    28.89 21
Kennedy 1993 Clay    26.44 21
Kennedy 1993 Leeann  27.17 17
Kennedy 1993 Georgia 38.90 11
Kennedy 1993 Bill    42.23 25
Kennedy 1993 Holly   18.67 27
Kennedy 1993 Benny   19.09 25
Kennedy 1993 Cammie  28.77 28
Kennedy 1993 Amy     27.08 31
Kennedy 1993 Doris   22.22 24
Kennedy 1993 Robbie  19.80 24
Kennedy 1993 Ted     27.07 25
Kennedy 1993 Sarah   24.44 12
Kennedy 1993 Megan   28.89 11
Kennedy 1993 Jeff    31.11 12
Kennedy 1993 Taz     30.55 11
Kennedy 1993 George  27.56 11
Kennedy 1993 Heather 38.67 15
Kennedy 1994 Nancy   29.90 26
Kennedy 1994 Rusty   30.55 28
Kennedy 1994 Mimi    37.67 22
Kennedy 1994 J.C.    23.33 27
Kennedy 1994 Clark   27.90 25
Kennedy 1994 Rudy    27.78 23
Kennedy 1994 Samuel  34.44 18
Kennedy 1994 Forrest 28.89 26
Kennedy 1994 Luther  72.22 24
Kennedy 1994 Trey     6.78 18
Kennedy 1994 Albert  23.33 19
Kennedy 1994 Che-Min 26.66 33
Kennedy 1994 Preston 32.22 23
Kennedy 1994 Larry   40.00 26
Kennedy 1994 Anton   35.99 28
Kennedy 1994 Sid     27.45 25
Kennedy 1994 Will    28.88 21
Kennedy 1994 Morty   34.44 25
;
```

Creating the STATEPOP Data Set

```
data statepop;
   input State $ CityPop_80 CityPop_90
         NonCityPop_80 NonCityPop_90 Region;
   format region 1.;
   label citypop_80=   '1980 metropolitan pop in millions'
         noncitypop_80='1980 nonmetropolitan pop in millions'
         citypop_90=   '1990 metropolitan pop in millions'
         noncitypop_90='1990 nonmetropolitan pop in million'
         region='Geographic region';
  datalines;
ME    .405    .443   .721   .785  1
NH    .535    .659   .386   .450  1
VT    .133    .152   .378   .411  1
MA   5.530   5.788   .207   .229  1
RI    .886    .938   .061   .065  1
CT   2.982   3.148   .126   .140  1
NY  16.144  16.515  1.414  1.475  1
NJ   7.365   7.730    .A     .A   1
PA  10.067  10.083  1.798  1.799  1
DE    .496    .553   .098   .113  2
MD   3.920   4.439   .297   .343  2
DC    .638    .607      .      .  2
VA   3.966   4.773  1.381  1.414  2
WV    .796    .748  1.155  1.045  2
NC   3.749   4.376  2.131  2.253  2
SC   2.114   2.423  1.006  1.064  2
GA   3.507   4.352  1.956  2.127  2
FL   9.039  12.023   .708   .915  2
KY   1.735   1.780  1.925  1.906  2
TN   3.045   3.298  1.546  1.579  2
AL   2.560   2.710  1.334  1.331  2
MS    .716    .776  1.805  1.798  2
AR    .963   1.040  1.323  1.311  2
LA   3.125   3.160  1.082  1.060  2
OK   1.724   1.870  1.301  1.276  2
TX  11.539  14.166  2.686  2.821  2
OH   8.791   8.826  2.007  2.021  3
IN   3.885   3.962  1.605  1.582  3
IL   9.461   9.574  1.967  1.857  3
MI   7.719   7.698  1.543  1.598  3
WI   3.176   3.331  1.530  1.561  3
MN   2.674   3.011  1.402  1.364  3
IA   1.198   1.200  1.716  1.577  3
MO   3.314   3.491  1.603  1.626  3
ND    .234    .257   .418   .381  3
SD    .194    .221   .497   .475  3
NE    .728    .787   .842   .791  3
KS   1.184   1.333  1.180  1.145  3
MT    .189    .191   .598   .608  4
ID    .257    .296   .687   .711  4
```

```
WY    .141    .134   .329   .319  4
CO   2.326   2.686   .563   .608  4
NM    .675    .842   .628   .673  4
AZ   2.264   3.106   .453   .559  4
UT   1.128   1.336   .333   .387  4
NV    .666   1.014   .135   .183  4
WA   3.366   4.036   .776   .830  4
OR   1.799   1.985   .834   .858  4
CA  22.907  28.799   .760   .961  4
AK    .174    .226   .227   .324  4
HI    .763    .836   .202   .272  4
;
```

Programs that Illustrate Inheritance

The programs in this section show the PROC TEMPLATE steps that were used in "How Do Style-Definition Inheritance and Style-Element Inheritance Work?" on page 139 to illustrate inheritance in style definitions. These programs also show the SAS code that uses the style definitions.

SAS Program for a Style with One Style Element

This program generates the HTML output in Display 5.1 on page 141.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
   input country $ 1-13 grain $ 15-18 kilotons;
   datalines;
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z;
      define x;
         style=celldatasimple;
         dataname=country;
         header='Country';
      end;
      define y;
           style=celldatasimple;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatasimple;
```

```
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;

proc template;
   define style concepts.style1;
      style celldatasimple /
         font_face=arial
         background=very light vivid blue
         foreground=white;
   end;
run;

ods html body='display1-body.htm'
         style=concepts.style1;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
ods html close;
```

SAS Program for a Style with Two Style Elements (Independently Defined)

This program generates the HTML output in Display 5.2 on page 142. In this version of the code, the style element **celldataemphasis** is created independently of **celldatasimple**.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
   input country $ 1-13 grain $ 15-18 kilotons;
   datalines;
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z;
      define x;
```

```
         style=celldatasimple;
         dataname=country;
         header='Country';
      end;
      define y;
           style=celldataemphasis;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatasimple;
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;
proc template;
   define style concepts.style1;
      style celldatasimple /
         font_face=arial
         background=very light vivid blue
         foreground=white;
      style celldataemphasis from celldatasimple /
         foreground=blue
         font_style=italic;
   end;
run;

ods html body='display2-body.htm'
         style=concepts.style1;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
ods html close;
```

SAS Program for a Style with Two Style Elements (Defined with Inheritance)

This program generates the HTML output in Display 5.2 on page 142. In this version of the code, the style element **celldataemphasis** is created as a child of **celldatasimple**.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
```

```
   input country $ 1-13 grain $ 15-18 kilotons;
   datalines;
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z;
      define x;
         style=celldatasimple;
         dataname=country;
         header='Country';
      end;
      define y;
           style=celldataemphasis;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatasimple;
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;
proc template;
   define style concepts.style1;
      style celldatasimple /
         font_face=arial
         background=very light vivid blue
         foreground=white;
      style celldataemphasis from celldatasimple /
         foreground=blue
         font_style=italic;
   end;
run;

ods html body='display2-body.htm'
         style=concepts.style1;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
```

```
ods html close;
```

SAS Program for Changing the Font Face in Only One Style Element

This program generates the HTML output in Display 5.3 on page 143.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
   input country $ 1-13 grain $ 15-18 kilotons;
   datalines;
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z;
      define x;
         style=celldatasimple;
         dataname=country;
         header='Country';
      end;
      define y;
           style=celldataemphasis;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatasimple;
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;
proc template;
   define style concepts.style1;
      style celldatasimple
        'The change to FONT_FACE does not
         affect celldataemphasis.'
      /  font_face=times
         background=very light vivid blue
         foreground=white;
      style celldataemphasis /
```

```
         font_face=arial
         background=very light vivid blue
         foreground=blue
         font_style=italic;
   end;
run;

ods html body='display3-body.htm'
         style=concepts.style1;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
ods html close;
```

SAS Program for Inheriting a Change to a Style Element

This program generates the HTML output in Display 5.4 on page 144. In this version of the code, the style element **celldataemphasis** is created as a child of**celldatasimple**.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
   input country $ 1-13 grain $ 15-18 kilotons;
   datalines;
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z;
      define x;
         style=celldatasimple;
         dataname=country;
         header='Country';
      end;
      define y;
           style=celldataemphasis;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatasimple;
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
```

```
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;
proc template;
   define style concepts.style1;
      style celldatasimple
        'The change to FONT_FACE is passed to
         celldataemphasis, which inherits all the
         attributes of celldatasimple.'
      /  font_face=times
         background=very light vivid blue
         foreground=white;
      style celldataemphasis from celldatasimple /
         foreground=blue
         font_style=italic;
   end;
run;

ods html body='display4-body.htm'
         style=concepts.style1;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
ods html close;
```

SAS Program for Creating the Style Element *celldatalarge*

This program generates the HTML output in Display 5.5 on page 146.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
   input country $ 1-13 grain $ 15-18 kilotons;
   datalines;
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z;
      define x;
         style=celldatasimple;
         dataname=country;
```

```
         header='Country';
      end;
      define y;
           style=celldataemphasis;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatalarge;
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;
proc template;
   define style concepts.style1;
      style celldatasimple /
         font_face=arial
         background=very light vivid blue
         foreground=white;
      style celldataemphasis from celldatasimple /
         foreground=blue
         font_style=italic;
      style celldatalarge from celldataemphasis /
         font_weight=bold
         font_size=5;
   end;
run;

ods html body='display5-body.htm'
         style=concepts.style1;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
ods html close;
```

SAS Program for Creating a New Style Element from a Style Element in the Parent Style Definition

This program generates the HTML output in Display 5.6 on page 149.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
   input country $ 1-13 grain $ 15-18 kilotons;
```

```
   datalines;
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z w;
      define x;
         style=celldatasimple;
         dataname=country;
         header='Country';
      end;
      define y;
           style=celldataemphasis;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatalarge;
         dataname=kilotons;
         header='Kilotons';
      end;
      define w;
         style=celldatasmall;
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;

proc template;
   define style concepts.style1;
      style celldatasimple /
         font_face=arial
         background=very light vivid blue
         foreground=white;
      style celldataemphasis from celldatasimple /
         foreground=blue
         font_style=italic;
      style celldatalarge from celldataemphasis /
         font_weight=bold
         font_size=5;
   end;
run;
```

```
proc template;
   define style concepts.style2;
      parent=concepts.style1;
      style celldatasmall from celldatalarge /
         font_size=2;
   end;
run;
ods html body='display6-body.htm'
         style=concepts.style2;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
ods html close;
```

SAS Program for Inheriting Changes to the Parent Style Definition

This program generates the HTML output in Display 5.7 on page 150.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
   input country $ 1-13 grain $ 15-18 kilotons;
   datalines;
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z w;
      define x;
         style=celldatasimple;
         dataname=country;
         header='Country';
      end;
      define y;
           style=celldataemphasis;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatalarge;
         dataname=kilotons;
         header='Kilotons';
      end;
      define w;
         style=celldatasmall;
```

```
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;

proc template;
   define style concepts.style1;
      style celldatasimple /
         font_face=times
         background=very light vivid blue
         foreground=white;
      style celldataemphasis from celldatasimple /
         foreground=black
         font_style=italic;
      style celldatalarge from celldataemphasis /
         font_weight=bold
         font_size=5;
   end;
run;

proc template;
   define style concepts.style2;
      parent=concepts.style1;
      style celldatasmall from celldatalarge /
         font_size=2;
   end;
run;
ods html body='display7-body.htm'
         style=concepts.style2;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
ods html close;
```

SAS Program for Using the STYLE Statement to Alter an Existing Style Element in the Child Definition

This program generates the HTML output in Display 5.8 on page 152.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
   input country $ 1-13 grain $ 15-18 kilotons;
   datalines;
```

```
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z w;
      define x;
         style=celldatasimple;
         dataname=country;
         header='Country';
      end;
      define y;
           style=celldataemphasis;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatalarge;
         dataname=kilotons;
         header='Kilotons';
      end;
      define w;
         style=celldatasmall;
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;

proc template;
   define style concepts.style1;
      style celldatasimple /
         font_face=arial
         background=very light vivid blue
         foreground=white;
      style celldataemphasis from celldatasimple /
         foreground=blue
         font_style=italic;
      style celldatalarge from celldataemphasis /
         font_weight=bold
         font_size=5;
   end;
run;
```

```
proc template;
   define style concepts.style2;
      parent=concepts.style1;
      style celldataemphasis from celldataemphasis /
         background=white;
      style celldatasmall from celldatalarge /
         font_size=2;
   end;
run;
ods html body='display8-body.htm'
         style=concepts.style2;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
ods html close;
```

SAS Program for Using the REPLACE Statement to Alter a Style Element and Its Children

This program generates the HTML output in Display 5.9 on page 155.

```
ods path sashelp.tmplmst(read) sasuser.templat(update);
title;
options nodate pageno=1 linesize=72 pagesize=60;
data test;
   input country $ 1-13 grain $ 15-18 kilotons;
   datalines;
Brazil        Rice   10035
China         Rice   190100
India         Rice   120012
Indonesia     Rice   51165
United States Rice   7771
;

proc template;
   define table mytable;
      column x y z w;
      define x;
         style=celldatasimple;
         dataname=country;
         header='Country';
      end;
      define y;
           style=celldataemphasis;
           dataname=grain;
           header='Grain';
      end;
      define z;
         style=celldatalarge;
         dataname=kilotons;
         header='Kilotons';
      end;
```

```
      define w;
         style=celldatasmall;
         dataname=kilotons;
         header='Kilotons';
      end;
   end;
run;

proc template;
   /* to ensure a fresh start with the styles */
   delete concepts.style1;
   delete concepts.style2;
run;

proc template;
   define style concepts.style1;
      style celldatasimple /
         font_face=arial
         background=very light vivid blue
         foreground=white;
      style celldataemphasis from celldatasimple /
         foreground=blue
         font_style=italic;
      style celldatalarge from celldataemphasis /
         font_weight=bold
         font_size=5;
   end;
run;

proc template;
   define style concepts.style2;
      parent=concepts.style1;
      replace celldataemphasis from celldatasimple /
         foreground=blue
         font_style=italic
         background=white;
      style celldatasmall from celldatalarge /
         font_size=2;
   end;
run;
ods html body='display9-body.htm'
         style=concepts.style2;
data _null_;
   set test;
   file print ods=(template='mytable');
   put _ods_;
run;
ods html close;
```

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