

Web Application Bar-Charts without SAS/GRAPH

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ABSTRACT

A picture is worth 1000 words it's said. And while that may be true, producing a picture instead of words can sometimes be 1000 times more difficult, particularly if you're not familiar with SAS/Graph and Annotate. And while the Internet is a great medium for graphics, producing them can be a pain. Anything that would make the task more simple would be welcomed.

By using the WIDTH= and HEIGHT= options on an HTML image tag, you can use a one-pixel GIF file to create an attractive bar chart without any SAS/Graph or Annotate. This paper describe how.

INTRODUCTION

In developing a web application displaying Injury Mortality Statistics for the Centers for Disease Control, we wanted to display the breakdown of certain injury categories in a meaningful and understandable way. Initially we had a report layout which reported numbers and percentages but seemed to lack a certain amount of impact (see Appendix 1).

The report tells the user everything he wants, but doesn't necessarily make the statement that it could. We realized that a graph of the data would convey the information much more meaningfully (see Appendix 2). The question was how to do it.

SAS/GRAPH AND ANNOTATE

A SUGI 24 paper from LeRoy Bessler entitled *Show Them What's Important: Solutions for a Finite Workday in an Era of Information Overload* contained a graph in the format I wanted and the code to create such a graph using SAS/Graph and Annotate. It was a good solution but because some of the labels were so long they wouldn't display properly without a lot of extra work. I wanted an easier solution.

ANOTHER APPROACH USING HTML

It turned out that using the WIDTH= and HEIGHT= parameters of the image tag in HTML would generate a bar chart. All I needed was to produce a one-pixel .GIF file for the color I wanted, and then specify the width and height that I wanted it displayed. I could generate the HTML dynamically and thus vary the chart based on the input criteria I needed. In it's simplest form, the HTML code would look like this:

```
<IMG border=0 height=20 src="red.gif"
width="74.76%">
```

The HEIGHT parameter would be static since I was doing horizontal bar charts and the WIDTH parameter (the percentage) I could get from the output of a PROC FREQ. (I assume you could reverse the values of HEIGHT and WIDTH for vertical bar charts but I've not tried it).

Simple, yet it can produce good-looking graphics. For an example of what it can look like, Appendix 2 contains a partial report from our web application. The code used to produce this graphic can be found in Appendix 3.

BENEFITS

There were several advantages to this approach:

1. The graph could be put in a multi-column table which would let the

bar be in one column and the labels be in another. This would allow the HTML table to control how the text of the label wrapped and ensured that it stayed with the horizontal bar. The application didn't have to control that, the browser did.

2. It didn't require any knowledge of SAS/Graph or Annotate.

3. The resulting HTML file was small which would make downloads quicker. Instead of downloading a big graphic to your browser you end up downloading only a one-pixel .GIF file which speeds response time.

CONCLUSION

If you don't know SAS/GRAPH or Annotate very well, you need not be prevented from putting graphics in your web application.

REFERENCES

SAS, and SAS/GRAPH are registered trademarks or trademarks of SAS Institute Inc. Cary, NC.

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CONTACT INFORMATION

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APPENDIX 1 – NON-GRAPHICAL DISPLAY OF INFORMATION

1997 United States
Homicide and Legal Intervention
Ages 25-34, All Races, Both Sexes
Total Deaths: 5,075

Cause of Death	Number of Deaths	Percent
Firearm	3,794	74.76
Cut/piercing	575	11.3
Etc.	5,075	100%

APPENDIX 2 – GRAPHICAL DISPLAY OF INFORMATION

1997 United States
Homicide and Legal Intervention
Ages 25-34, All Races, Both Sexes
Total Deaths: 5,075

Cause of Death	Number of Deaths	Percentage of Deaths
Firearm	3,794	74.8%
Cut/pierce	575	11.3%
Unspecified	227	4.5%
Suffocation	183	3.6%
Other specified / NEC	154	3.0%

APPENDIX 3 – SAS CODE

```

* -----;
* Sum up death data so that you have the cause, the total number of ;
* deaths for each cause, and the percentage that total is from all deaths;
* -----;

proc freq data=temp ;
  tables cause / noprint out=totals(rename=count=deaths) ;
  weight deaths ;
  label cause='Cause of Injury' deaths='Number of Deaths' ;
run ;

* -----;
* Now produce the chart as a table with three columns: one with the cause;
* of death, one with the number of deaths, and one with the percentage of;
* deaths including the bar chart.
* The bar chart is drawn using a .GIF that is one pixel in size, and uses;
* the WIDTH= and HEIGHT= options on the IMG tag to make it the right ;
* size. In order to fit it to scale, we divide the number of deaths by ;
* a macro variable so that it fits on one page.
* -----;

data _null_ ;
  file _webout ;
  set work.totals end=lastob;
  if _n_ = 1
  then do ;
    put '<table border="0" cellpadding="2" width="771">' //
      '<tr>' /
      '<td width="132" height="27"><font face="Arial">'
      '<b>Cause of Death</b></font></td>'
      '<td nowrap><p align="right"><font size="2" face="Arial">'
      '<b>Number<br> of Deaths</b></font></td>'
      '<td width="18" height="27"></td>'

      '<td width="536" height="27">'
      '<font face="Arial" size="2">'
      '<b>Percentage of Deaths</b></font></td>'
      '</tr>'
      ;
    end ;
    * create quoted strings for height and width. Want them;
    * to look like height="20" and width="44.5%" ;
    length height width $8 total 5 ;
    if percent < 1.0 then width=quote("1.0%") ; * make small numbers a minimum size ;
    else width = compress(quote(put(percent,5.2) !! '%')) ;
    height = quote("20") ;
    total = &deaths ;
    put /* print out the cause of death */
      '<tr>'
      '<td width="132" height="30"><font face="Arial">'
      cause
      '</font></td>'

      /* print out the number of deaths */
      '<td width="61" height="30" align="right">'
      '<font face="Arial">'
      deaths comma10.
      '</font></td>'

      /* put spaces in column to hold it open */
      '<td width="10" align="right"><font color="#FFFFFF" size="2" '
      'face="Arial">'
      ''
      '</font></td>'

      /* print out the percentage of deaths and the bar */
      '<td width="538" height="30" align="left">'

```

```

'<font face="Arial">'
''
''
percent 4.1 '%</font></td>'
'</tr>'
;
if lastob
then do ;

    put '<tr>'
    '<td width="132" height="30"><font face="Arial" size="2">'
    '<b>Total Deaths&nbsp;</b></font></td>'
    '<td width="85" height="30" colspan="2"><font size="2">'
    '<p align="right"></font><font size="2" face="Arial"><b>'
    'total comma10.'
    '</b></font><font face="Arial"> </font></td>'
    '<td width="536" height="30"></td>'
    '</tr>'
    ;

    put '</table>' ;
end ;
run ;

```