

ODS, Proc GMAP and SAS/Intrnet: MAP Your Own Response Data

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Abstract:

In recent years, there has been added interest in geographic information analysis and there are several commercially available products, which can provide means and tools to do spatial data analysis, but most of these products have learning curves and also come at great expense. However, Proc GMAP combined with ODS and SAS/Intrnet provides one of the best and easiest way to analyze and visualize spatial data and render output to end-users web browser without having SAS or any other software installed on client computer and also end-users do not need to know any technical details. In this paper, we will demonstrate how to build the dynamic web pages where users can enter or cut and paste their own response geo-data to be mapped. Furthermore, it will allow users to drill down to lower geography to bring some of the census information.

Key Words: SAS/BASE, SAS/GRAPH: Proc GMAP and Annotation, SAS Macro Language, Data Statements, SAS/Intrnet ODS and HTML.

URL: <http://atlantacensus2000.gsu.edu>

Introduction:

Recently, people have realized that geo-spatial data analysis and visualization is more important than data itself, which provides a much better understanding and give data an added dimension. A map along with bars and charts will speak volume compared to just the tables and numbers. But, very often people think that adding geographic component to report or analysis may be very expensive, moreover, one might need to acquire help of experts who provide such services. On the other hand, with new tools, which are available in SAS V8 and V9, it is very easy and convenient for some one to create maps of their own data at any geography levels without having to know how GIS. In the following, we will provide details of how one can cut and paste response geo-spatial data and create maps and display in web browser.

HTML Code:

Consider following HTML statements, which give instructions on how to arrange response data set, selection of a geographic region and provide TextArea for users to cut and paste their geo-spatial data:

```
<HTML>
<!-- Generated by SAS Software -->
<!-- Http://www.sas.com -->
<HEAD>
<TITLE>AtlantaCensus2000</TITLE>
<META http-equiv="Content-type" content="text/html;
charset=windows-1252">
</HEAD>
<body bgcolor="#ffffff" topmargin="0px" leftmargin="0px"
marginheight="0" marginwidth="0">
<SCRIPT LANGUAGE="JavaScript">
<!--
// This script is to load all object onLoad() functions
function startup(){ }
```



```

<INPUT TYPE="HIDDEN" NAME="annind" VALUE="0">
<INPUT TYPE="HIDDEN" NAME="_debug" VALUE="0">
<TABLE BORDER="0">
<TR><TD>Select a Geography Type</TD>
<TD><SELECT NAME="geotype">
<OPTION VALUE="1">States</OPTION>
<OPTION VALUE="2">Counties</OPTION>
<OPTION VALUE="3">Tracts</OPTION>
<OPTION VALUE="4">BlockGroups</OPTION>
</SELECT>
</TD>
</TR>
</TABLE>
<INPUT TYPE="TEXT" NAME=title VALUE="Enter Map Title" size="30"><br>
<STRONG>Enter or cut and paste your data here</STRONG><BR>
<TEXTAREA ROWS=3 COLS=30 WRAP=PHYSICAL NAME=response>
</TEXTAREA>
<BR><BR>
<CENTER>
<INPUT TYPE="SUBMIT" VALUE="Submit">
</CENTER>
</FORM>
</td>
</TABLE>
</P>
</BODY>
</HTML>
</HTML>

```

This HTML code was included in the SAS macro by *put* statement and result of this code looks as follows:



Maps of User Supplied Geo-Data

Instructions about entering data:
 -Leading zeros of state FIPS should be coded.
 -Counties are uniquely defined as concatenation of state and county FIPS.
 -Tracts are uniquely defined as concatenation of state, county and tract FIPS.
 -Blocks are uniquely defined as concatenation of state, county, tract and block FIPS.

Pick a Geography Type

Enter Map Title

Map of User Supplied Geo-Data

Instructions about entering data:
 -Leading zeros of state FIPS should be coded.
 -Counties are uniquely defined as concatenation of state and county FIPS.
 -Tracts are uniquely defined as concatenation of state, county and tract FIPS.
 -For example, tract 201 of DeKalb County and tracts 55.01 and 55.02 of Fulton County should be entered as 13089620100, 13121005501 and 13121005502, respectively.
 -Following is an examples of entering 2000 census blocks and geo-data

```

130896201001006,0.00
130896201001015,0.08
130896201001005,0.11
130896201001017,0.11
130896201001007,0.14
130896201001016,0.14
130896201001015,0.16
130896201001018,0.20
130896201001021,0.21
130896201001020,0.21
131210001002000,0.23
130896201001003,0.24
130896201001004,0.26
130896201001008,0.27
131210001001011,0.27
130896201001002,0.28
130896201001014,0.30
131210001001012,0.31
130896201001009,0.31
131210001002001,0.31

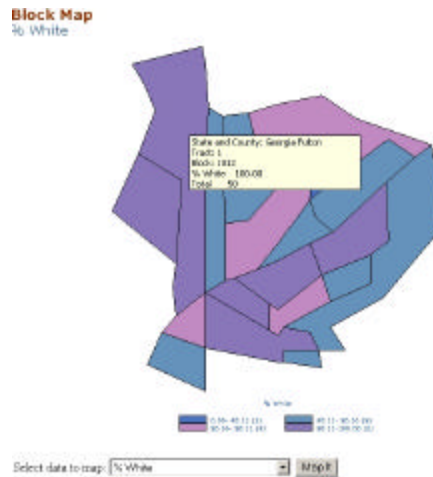
```

-Blocks and data should be separated by a comma.
 -Limit 60 or less blocks.

Are Blocks from (select one)

Enter or cut and paste your block level geo-data below

And drill down map of these user-supplied blocks brings census data as



In this paper, we demonstrated that how one can set up a macro to read user provided data and create maps and provide maps of census data for user supplied geography as well. This paper is a continuation of the work presented at SUGI 28 at Seattle, WA (<http://www2.sas.com/proceedings/sugi28/138-28.pdf>) which was also presented at SESUG 2003 help at St. Pete Beach, FL. Atlantacensus2000 is a web site which is continuously being updated and some of the new features, such as allowing users to perform statistical analysis and run regressions on the web, are forth coming.

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