SAS/AF® Slide System for Graphics

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Abstract

This paper discusses the development of a system for producing word slides for presentations. The system uses SAS/AF®, SAS/FSP® and SAS/GRAPH®. Much of the discussion of graphics design and user interface could be applied to other projects.

Introduction

At the SAS Institute, many visuals are created for presentations. Some of these are for education classes, internal meetings, or conference presentaions. As SUGI approaches each year, there is a demand at the Institute for large number of visuals in a short period of time. A project was started to help reduce the amount of time and to improve the quality of the visuals created by Institute staff. This paper shares some of the ideas that emerged as the project progressed. The code is not described in much detail, but a subset of the system is available in the SAS/GRAPH® prototype application which wiil soon be available to sites free. For more information contact software sales.

Goals

The project soon had two main goals: (1) produce good quality visuals and (2) be easy to use. This would help provide some quality control over the visuals used by Institute staff. The ease of use would encourage most people to use the new system.

Team

A team of people was contacted to work on the new system. This team included graphics designers, SAS/AF® programmers, and SAS/GRAPH® programmers. The graphics designers provided help with layouts and colors for the visuals. The SAS/AF® programmers helped with coding techniques, menu setups, and control of movement from screen to screen. The SAS/GRAPH® programmers provided help with annotate, fonts, and devices. At the time SAS/AF® software was very new, but all of the programmers quickly learned to build applications using the BUILD procedure.

Design

The design process proceeded in two parallel tracks. While the graphics designers worked on layouts and color palettes, the programmers began prototyping the interface. The design of the layouts was an interative process. The designers would draw a layout that specified the various components in percent. Then the programmers would create some sample output. Many things were adjusted in this process including, the number of lines of text, the size of the text, the indentation, and the thickness of rule lines. Colors on the 35mm cameras were a very difficult area. Many sets of slides were shot to examine the compatible colors. Several factors seemed to cause the colors to vary. These included getting a newer model of the camera, using different speeds of film, and even using a different batch of the same speed film. The main lesson we learned was to try to pick a color palette that would not be too sensitive to slight changes in the colors. The main criteria for a color palette was to have colors that were distinctly different while still being harmonious. This is job best done by an appropriately trained and informed graphics designer. It took us a long time to find color palettes with which we were happy, but meanwhile we were able to proceed with designing the user interface.

As we began to envision the interface of the system, a few features were considered mandatory. Some of these features were the ablity to save your slides in a form that could be recalled and changed and the ablity to display the output on various devices. There was also a desire to have the entering and editing screens look as much like the final output

as possible. We chose to store the slides in a SAS data set. The FSEDIT procedure is used for both entering and editing the slides. The main menu has 6 choices: create, edit, output, help, news, and tutorial.

Creating

The create, edit, and output choices all start by prompting for the name of the data set where the visuals are stored. Separating the output function at this level simplified the writing of the system although it may make the interface slightly less friendly. In recognition of this, if you have been creating or editing visuals the prompt for the data set to use for output already contains the name you were previously using. If you are creating a new set of visuals, you are asked to make some one time choices. You must choose the media, 35 mm or overhead transparencies, and the format.

Formats

Two different formats were implemented from the ideas of the graphics designers. The two formats, bullet and rule, each have five different styles: standard list, continued list, dual column list, comparisom, and definition.

There where many factors considered in developing the formats such as the media, the size of the room and the size of the projected image. We decided to provide formats for both 35mm slides and 8 1/2" by 11" transparencies. With the landscape mode, wider than they are tall, 35 mm slides, we decided that a total of 10 lines of text wonld be clearly visible in most situations. The portrait mode, taller than they are wide, transparencies allow a total of 13 lines. The XSWISS font was chosen as the cleanest font we had at the time. For release 5.18 or 6.03 of SAS/GRAPH® software several of the new fonts are even better than XSWISS. These would include SWISS, ZAPF, and CENT. See *Changes and Enhancements to the SAS® System, Release 5.18, Under OS and CMS* or *SAS/GRAPH® Guide for Personal Computers, Version 6 Edition* for more information.

Editing

The create and edit choices from the main menu both convert the storage form data set to a form for the FSEDIT procedure. Afterwards, the data set is converted back to the storage form. The editing screens use five screens, one for each observation. There is a set of screens for each media and format combination. The screens are layed out to appear as much like the final visuals as possible. They also contain information about scrolling to different screens and alternate characters. The ® and ™ symbols are commonly needed and are not available on standard keyboards. The slide system uses a cent sign and tilde, respectively, to represent these symbols while entering or editing visuals.

Outputing

The output function lists a menu of devices available at the Institute. The choices are divided into two catagories, final and preview devices. One of the worst problems you will encounter when creating 35 mm slides is the turn-around delay. Previewing allows you to check your slides for spelling, content, and fit without waiting for your slides to be photo processed. It is necessary to check for fit, because the editing screens use evenly spaced characters while the visuals are produced with proportionately spaced characters. The length of the input lines while editing allow more characters than the worst case. A line of all capital M's would not fit properly, although a line of all i's would use only about half the space. A typical line of text would normally fit. Leaving the responsibility to you for checking the proper fit is the main weakness of the system interface. The preview devices include non-graphics printers as well as graphics terminals and hardcopy devices. Internally several differences depend on whether a device is considered a preview device.

Preview devices normally use a different font and colors than the final devices. An empty font is used on preview devices rather than a filled one. This helps avoid running out of programmable symbols on an IBM 3279 as well as reducing the amount of data sent to

some hardcopy devices. The choice of color palettes is also changed for preview devices. Most of our preview devices are not capable of reproducing the color palettes used on the cameras, so a set of alternate palettes is used. An important part of the interface is to avoid unnecessary questions, thus if a device is monochrome, you are not prompted for choosing the colors. Two important internal techniques are used to make the previews accurate. The GOPTION ASPECT= option is used to give the preview device the height to width aspect of the final device. Also the annotate data set uses percentage data systems for both x, y positioning and character size.

After a device and possibly colors have been chosen, you are asked if you want to output all of the visuals or only part of them. The GREPLAY procedure's presentation screen is used to prompt for which visuals are wanted if you choose to output only part of them. The system also adds header and trailer graphs for some devices to help identify different people's output.

Help/News/Tutorial

The main menu offers help, news and a tutorial. These are all simple versions. Help is also included with most screens and is used to define the terms and functions of the various screens. Sometimes other information is given, for instance the help for the color palette menus gives the names of the colors. So, if you are creating other graphs for the same presentation, you can use the same colors. The tutorial is rather brief and is due to be rewritten now that more feedback is available from the users. The news is a very useful choice. This allows a place to provide information about changes in the system. This is where information about the schedule for film pick-up and delivery is posted.

Conclusion

There were several important things learned while developing the slides system. Having the input of graphics designers improved the quality of the visuals. Quickly prototyping both the visuals and the interface made the project move quickly. Using existing procedures for needed functions, such as PROC FSEDIT for editing, minimized the programming. Specifying the annotate data sets in percentage systems and setting the aspect allows accurate previewing on a wide variety of devices. While this system for producing visuals is not perfect, it does provide a quick, simple method for entering and submitting visuals from non-graphics devices.