

Using Hyperlink to Organize SAS HTML Output

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ABSTRACT

Internet and intranet have quickly become important vehicles for information delivery. The versatile HTML's hyperlink is one of the reasons behind widespread popularity of web technology. In this paper, authors explain different ways to take advantage of hyperlink to organize SAS outputs. Some techniques can also be applied to organize outputs generated with new Output Delivery System.

INTRODUCTION

The web, including internet and intranet, is a hypertext information system. The idea behind using hypertext is that instead of reading text in a rigid, linear structure, you can easily skip from one point to another, get more information, go back, jump to other topics, and navigate through the text based on what interests you are at the time.

Inherited from its mainframe roots, SAS output has been prepared for traditional fan-folder green paper. It typically uses fixed font and presented in monochrome. With web technology, SAS can reach a large audiences. Furthermore, we can use HTML's hyperlink to gain better accessibility and derivability.

The first example covered demonstrates simple usage of hyperlink to organize outputs generated from the same multidimensional data. In the second example, we explain how to establish a simple navigation mechanism for related SAS outputs.

HTML FORMAT AND HYPERLINK

HTML is an acronym stands for HyperText Markup Language. It is based on SGML (the Standard Generalized Markup Language), which is used to describe the common structure of various kinds of documents. A HTML file describes the structure of documents, for example, titles, paragraphs, or lists. With SAS Institute's web publish tools, we can translate a SAS output into a HTML document.

In HTML, hyperlink is a user-selectable hypertext or hypermedia jump point. When selected, it will "jump" to another text or multimedia object. A simple hypertext link can guide user from one HTML document to another document. Or simply "jump" to different section within the same document.

The HTML tags behind the glorious hyperlink is the pair: `<A>` and ``. The syntax is shown below. The 'file' is the URL of linked HTML document. If the link intend associate to another HTML file, no need for '#anchor'. If want to navigate through one section to another section (could be belong to different documents), 'anchor' should be specified.

define a hyperlink

```
<A HREF="file#anchor">"highlight text" </A>
```

declare a target section, (point to jump)

```
<A NAME ="anchor"> </A>
```

Hyperlink enable us to setup a navigation mechanism within a HTML formatted SAS document. You can also establish a hierarchy menu system to organize related outputs.

Currently you can translate a regular SAS output into a HTML file in many ways. The new SAS version 7 even make the conversion trivial with its Output Delivery Systems (ODS). To take advantage of hyperlink, you still need some creative thinking in organize SAS reports.

MUTLIDIMENSIONAL DATA

As an example we use a fictitious stock performance data. It consists of seven variables. STOCK, represent the stock ticket symbol; QUATER, is a time point variable; PRICE, represent stock price; EPS, BETA, PE are other performance variables. Each stock has its

performance data collect at six time points. Next table shows the sample data for one stock 'MRK'.

STOCK	QUARTER	PRICE	EPS	BETA	PE
MRK	97Q2	98.2	1.50	1.1	34.2
MRK	97Q1	88.5	1.09	1.1	33.6
MRK	96Q4	72.5	0.98	1.0	33.4
MRK	96Q3	75	1.02	1.1	31.2
MRK	96Q2	83	1.33	1.0	29.7
MRK	96Q1	79	1.16	1.2	38.2
PFE
....					

Getting answers to business questions from such multidimensional data often requires viewing that data from various perspectives. Here are three tables created from different perspectives.

- Table of most recent stock performance comparison among stocks It actually is a front slice of the cubic (see figure 1). This table is a main table.
- Trend for one individual stock table. It can be represented by a piece of horizontal plate cut through one individual stock symbol.
- Trend comparison among all stock for each performance variable (such as PRICE, PE). The data list contains all the slices cut parallel to QUARTER axis

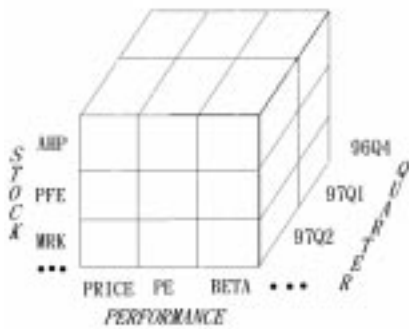


Figure 1 Data Cubic for the Example

Generating SAS outputs from those perspectives are trivial. The typical way in producing output yields one fundamental shortfall. There is no effective mechanism to reflect the hierarchy relationship existed among tables..

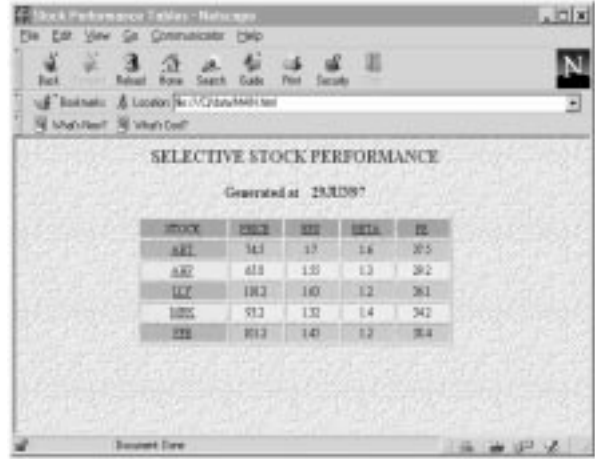


Figure 2 Main Table

Figure 2 is the HTML generated main table. The first column lists all stock symbols. Each stock symbol has its own hyperlink. For example, stock 'MRK' links to a HTML table named 'mrk.html'. To achieve this a translation is used.

```
MRK → <A HREF="mrk.html">MRK</A>
```

The 'mrk.html' is the one of tables presenting the trend for stock MRK.

The first row of the main table is for performance variables. They link to other tables. The hyperlinks for these variables are different from previous stock links. The translation is shown next:

```
PRICE→<A  
HREF="perform.html#price">PRICE</A>
```

It connects the section associated with individual performance variable. When 'PRICE' is clicked, the section of 'Performance Variable: PRICE' in the table (Figure 3) will be displayed.

Tables shown in Figure 3 are trend comparison for each performance variable. We should place the anchor in each performance variable section. It is accomplished within a title statement. While viewing the main table, users can quickly jump to this table to further study the trend within one performance variable.

CONCLUSION

This paper briefly covers some techniques to enhance SAS HTML formatted outputs. As we have seen, a great deal can be accomplished in organizing SAS outputs with hyperlink. By utilizing resources already available in SAS, such as HTML format tools and ODS, we are able to translate previously disparate outputs into a simple information system.

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