

HR Plus - A Customized View on a Generalized Solution

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Abstract

HR PLUS is a SAS/AF system developed to meet the following challenge:

Take an outdated, but still widely used, mainframe AF system. Salvage the best of that system (which turned out to be the heart of any good SAS system: meaningful data, good data organization, and the basic components of report construction). Renovate and redesign the system for a Windows environment using the latest SAS tools and methods. Expand the power of your customized AF development by linking to the best desktop features of SAS for Windows: viewtable; multi-dimensional report and other EIS objects; the inherent features of catalogs; and information sharing options such as e-mail, HTML, and GIF. Tie it all together in a seamless customized package that is accessible to non-programming, non-analytical end users. And, as important as all of the above, keep it fun – for you and your user.

Introduction

In early 1997, I began work on a project to develop an AF application that would draw on my experience with an existing mainframe application, HR=>ACCESS, that I had developed for The Southland Corporation. The application, in place since 1990, was still going strong, with 60+ users nationwide and 2,500+ reports printed annually. But, from a technical standpoint, it was in need of total renovation. At the time, I was transitioning from the mainframe to the PC environment and was anxious to learn and utilize all of the new tools that would be available for SAS on the PC. Having just become an independent consultant, somewhat in charge of my own time, I also viewed this project as an opportunity to experiment and be creative, without the constraints of high-pressure deadlines. The resulting application, HR Plus, is thus a combination of three key elements:

- A Valuable Legacy
- The Best SAS tools
- A Customized Design

A Valuable Legacy

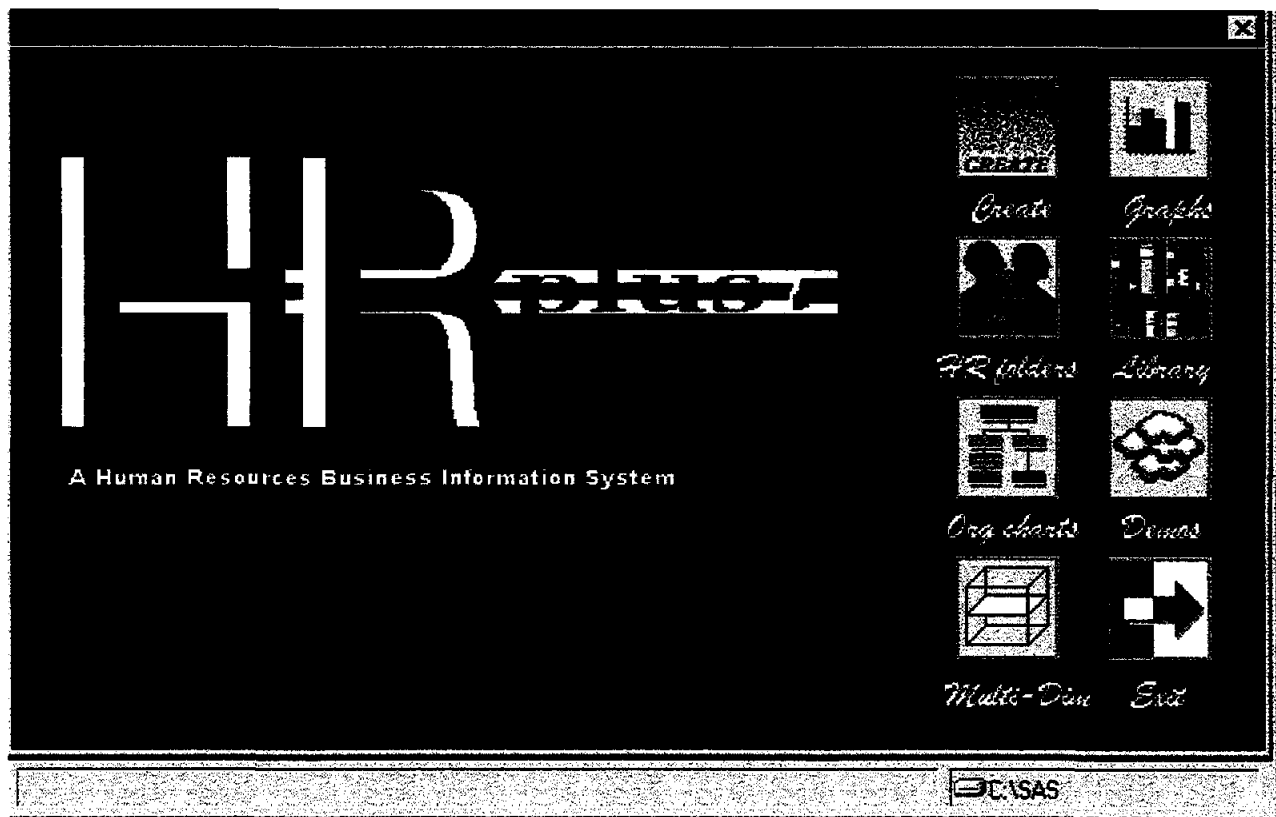
I started with a foundation built on 15 years experience in SAS programming and analysis in Human Resources, 7 years of HR application development and maintenance, and SAS' longstanding performance with large volumes of data, complex data manipulation, and superior application development and end user tools. The data organization, fields available, and basic analyses in HR=>ACCESS had served well for many years and continued to be valuable to Southland users. While I would enhance and make some changes in this area, having most of this basic infrastructure of user needs and data design taken care of freed me up to concentrate on the next two elements.

The Best SAS Tools

In transitioning from mainframe SAS to PC SAS, I was presented with an array of new tools. These included both application development tools that I could use to develop the application as well as ready made SAS applications, such as Viewtable and EIS objects, that I could make available to the user. How to take advantage of the application development tools was pretty obvious. Taking advantage of the SAS applications was more evolutionary in nature. I experimented with each for my own use until the value to HR users became apparent. The key to capitalizing on these SAS applications was data organization and providing an easy transition from the customized portion of HR Plus to the SAS applications.

A Customized Design

In designing HR Plus, I have tried to go beyond simply making a lot of functionality available to the user. With HR=>ACCESS, I was fortunate to be exposed to a lot of user feedback. While having access to data and the capability to run reports was important to those users, enjoyment of the process was equally valued. With HR Plus, I have tried to capitalize on all the built-in functionality of SAS objects and tools and then take it a step further to make the system as easy – and fun – to use as possible.



Create - reports, data files, summary statistics, labels, spreadsheets, web files and much more.



HR Folders - presentation of employee data in a tab folder format. Interacts with Create to "pull" folders of selected employees.



Org Chart - point-and-click your way through a graphical organization chart.



Multi-Dim - a vast array of summary data in an easily-accessed, multi-dimensional format.



Graphs - Catalogs of pre-designed graphs on key HR issues as well as design-your-own capability.



Library - save programs, reports, and data; rerun programs; update data; share reports and data with others.



Demos - a place to put the latest new developments - for testing or optional use.

Three HR Plus Components

The remainder of the paper will provide a brief overview of the three of the most powerful components of HR Plus: HR Folders, Create, and the Multi-Dimensional Report.

HR Folders

The HR Folders component of HR Plus is an application of the Tab Layout object. This object allows you to present data in an organized, tab folder format. HR Folders give the user access to a large amount of data for each employee, grouped under meaningful tabs:

- Personal
- Job
- Location
- Development
- History
- Earnings

John Jones ↓

Personal	Job	Location	Development	History	Earnings
999-00-9999					
Status A-05	Hire	06/18/93	Tenure in years	12.20	
Pt/Ft F	Position	11/15/96	Company	0.90	
Sex M	Birth	05/28/53			
Race A					

Sick leave		Vacation		Address and phone	
Total	0.00	Total	240.00	1000 Main St	
Taken	0.00	Taken	0.00	#2122	
Left	0.00	Left	240.00	Anywhere	US
				(909)999-0099	90777

In addition to the use of the Tab Layout as a powerful organizational object, SAS gives you the ability to use all of the other Frame objects within the Tab object itself. The use of extended tables or extended text objects lets you pack a lot of information in a single tab, as shown by the Development tab. The Development tab brings together three key areas of employee development: Performance ratings, testing, and training courses. It displays all three on a single tab, with scrollable boxes extending the available data beyond the viewable area..

Personal	Job	Location	Development	History	Earnings
Ratings B 10/31/96 2103-Asst Hdwr B 10/15/96 2103-Asst Hdwr A 09/01/94 2101-Hrdw Sales A 03/03/94 2101-Hrdw Sales B 09/15/93 2101-Hrdw Sales C 06/12/93 2101-Hrdw Sales			Courses 06/01/94 Intro to Hardware 09/21/94 Electronics 12/14/94 Plumbing 02/26/95 Lighting 05/02/95 Lawn and Garden 10/22/95 Advanced Plumbing 12/12/95 Plus Selling 01/14/96 Exchanges/Returns 01/30/96 Asst Mgmt - I 02/20/96 Asst Mgmt - II 03/28/96 Asst Mgmt - III 05/08/96 New Tech Hardware 06/11/96 Mid Mgmt - I 06/30/96 Mid Mgmt - II 07/21/96 Mid Mgmt - III 09/14/96 Hardware Trends 11/24/96 Web & Hardware		
Tests 06/24/93 Sales 10/20/93 Mgmt I 12/24/94 Acctg 03/15/95 Mgmt II					

The Job tab illustrates the use of additional objects within the Tab object. The slider objects show where an employee's pay falls within the pay grade ranges, for both current pay and a comparison pay. The comparison pay is chosen from a popmenu that displays when the user clicks on the control arrow to the right of Compare. Other comparisons include local average, regional average, and national average.

Personal	Job	Location	Development	History	Earnings
1103-Hardware Mgr			Current		Comparison
Grade	30	Pay	45,700	33,700	29,800
Ex/non	E	As of	11/15/96	38,149	33,649
Bonus %	.14	Inc %	4.58	42,600	37,500
Compare			prevpay	43,700	
Keyjob (15) Mid Mgmt				47,050	41,350
				51,500	45,200

Prev pay in: Asst Hdwr / 28

Additional features of HR Folders include: moving forward and backwards between employee records; going directly to an employee by selecting from a list of employee names; the ability to print any or all tabs; and the ability to "pull" folders for selected employees by using Create (described below).

Create

The core reporting, analysis, and data creation capability is found in Create.

Data File					
Unit	1699				
File	Detail				
Date	Current				
Go					
1	2	3	4	5	
6	7	8	9	10	
11	12	13	14	15	
1	2				
3	4				
5	6				

AGE

AGEGRP

AMEX

AVGHTD

AVGHTD

BIRTHDAY

BIRTHDT

BIRTHMTH

BIRTHYR

BUSCODE

COMPTEN

COMP TENY

COUNTER

CSTAT

CSTATREA

DIVISION

DNUMNAME

EEOCODE

EMPADD1

EMPADD2

EMPCITY

Users drag and drop field names to specify fields for print, sort, grouping, and paging. For selection, users drag and drop values from a list of all values in the data.

Drag values from the selection values for **STRCITY**
 for selection based on EITHER exact values
 OR a range from -- thru.

Exact Values

Range From _____ Thru _____

ADDISON
 ALAMOSA
 ALLEN
 ARLINGTON
 ARVADA
 AURORA
 AUSTIN
 AZLE
 BASALT
 BEDFORD
 BOULDER
 BRIGHAM CITY
 BRIGHTON
 BROOMFIELD
 BRUSH
 CARBONDALE
 CARROLLTON
 CASTLE ROCK

justify fields
 clear fields
 add fields

titles
 column labels
 sort options
 group/page
 sum/count
 none

report
 viewtable
 analysis
 frequency
 labels
 hi folders
 text file
 web file
 save
 none

The toolbar provides screen utility functions and report options.

As the user specifies selection and options, extended text boxes provide feedback on all components of the report design.

Data File

Unit 1699
 File Detail
 Date Current

more... Go

STRCITY AUSTIN DALLAS
 KEYJOB (40) Store Mgr

1	STRCITY	2	LNUMNAME	3	FC	4	STORE	5	SM
6	STRADD1	7	STRADD2	8	STRZIP	9	STRPHONE	10	
11		12		13		14		15	

1	STRCITY	2	LNUMNAME
3	FC	4	STORE
5		6	

TITLES: Store Project -- Austin and Dallas Sto...
 PAGE: STRCITY
 COUNTS: YES

REGTEMP
 SEX
 SICKLEFT
 SICKTAKN
 SICKTOT
 SIS
 SISDT
 SM
 SMB
 SMBDT
 SNUMNAME
 SSN
 STORE
 STRADD1
 STRADD2
 STRCITY
 STRPHONE
 STRSTATE
 STRZIP
 SUPERVNO
 VACDUE

Multi-Dimensional Report

HR Plus provides several Multi-Dimensional report options to the user. Key Human Resources statistics such as turnover, salary, earnings, labor and sales figures, and diversity statistics are available using the multi-dimensional report in SAS/EIS. For superior performance, all data are processed using SAS MDDB. The following "walk-thru" illustrates one of the uses of the multi-dimensional report.

The Multi-Dimensional Report gives you quick and easy access

- to large amounts of data
- in an organized way
- backed by the power of SAS/MDDB
- delivered in a user-friendly, point-and-click environment

SAS Multi-Dimensional Report		
YEAR	1997	
	LABOR	SALES
Region	SUM	SUM
9901	11,004,656	89,245,220
9902	6,645,749	53,707,907
9903	10,482,925	83,113,480
9904	5,424,501	41,912,959
9905	8,425,896	66,886,943
9906	10,512,192	80,700,234
Total	52,495,919	415,566,743

Click on the Region . . .

SAS Multi-Dimensional Report		
YEAR	1997	
	LABOR	SALES
Region	SUM	SUM
9901	11,004,656	89,245,220
9902	6,645,749	53,707,907
9903	10,482,925	83,113,480
9904	5,424,501	41,912,959
9905	8,425,896	66,886,943
9906	10,512,192	80,700,234
Total	52,495,919	415,566,743

. . . to view subtotals for
Managers for each Region

SAS Multi-Dimensional Report			
YEAR		1997	
		LABOR	SALES
Region		SUM	SUM
9901	Mgr Jones	2,892,700	22,438,821
	Mgr Martinez	3,450,102	29,842,970
	Mgr Phen	4,661,854	36,963,429
	Total	11,004,656	89,245,220
9902	Mgr Rivers	3,197,770	25,774,714
	Mgr Tran	3,447,979	27,933,193
	Total	6,645,749	53,707,907
9903		10,482,925	83,113,480

Click on the Manager . . .

SAS Multi Dimensional Report			
YEAR		1997	
		LABOR	SALES
Region		SUM	SUM
9901	Mgr Jones	2,892,700	22,438,821
	Mgr Martinez	3,450,102	29,842,970
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	Total	6,645,749	53,707,907
9903		10,482,925	83,113,480

. . . to view subtotals for
stores reporting to each Manager

SAS Multi-Dimensional Report				
YEAR		1997		
		LABOR	SALES	
Region		SUM	SUM	
9901	Mgr Jones	42550	118,317	872,608
		42562	96,840	649,817
		42679	122,151	909,411
		42687	132,607	899,775
	Total	2,892,700	22,438,821	
	Mgr Martinez	42702	164,689	1,389,814
		42705	153,637	1,251,045
		42916	84,582	775,442
		42917	90,870	732,940
		42924	110,181	1,043,813

Click on year ...

SAS Multi-Dimensional Report				
YEAR		1997		
		LABOR	SALES	
Region		SUM	SUM	
3981	Mgr Jones	42550	118,317	872,808
		42552	96,840	649,017
		42679	122,151	909,411
		42687	132,607	899,775
		Total	2,892,700	22,438,821
	Mgr Martinez	42702	164,689	1,389,814
		42705	153,637	1,251,045
		42916	84,582	775,442
		42917	90,870	732,940
		42924	110,181	1,043,813

... to view a breakdown by month across the report

SAS Multi Dimensional Report							
MONTH	97/01		97/02		97/03		
	LABOR	SALES	LABOR	SALES	LABOR	SALES	LA
Region	SUM	SUM	SUM	SUM	SUM	SUM	\$
3981	858,841	6,618,285	781,217	6,542,069	868,439	7,276,004	86
3982	524,575	3,953,985	474,031	3,961,649	519,186	4,374,223	52
3983	830,116	6,159,567	749,297	6,120,866	802,516	6,744,676	80
3984	438,866	3,042,821	398,819	3,857,255	431,498	3,424,387	42
3985	676,033	4,952,201	598,165	4,918,706	663,885	5,428,019	65
3986	824,455	5,992,198	742,528	5,966,598	831,648	6,688,474	82
Total	4,136,085	30,719,057	3,736,057	30,567,142	4,106,292	33,855,783	4,09

HR Plus delivers data organized to support several SAS/EIS objects and provides the user easy entry into the EIS components. Once in the EIS modules, the user has access to the full range of functions, tools, and capabilities that SAS provides through EIS, such as graphing, saving reports, varying analysis and formats, etc. Extensive use of EIS and other advanced SAS applications, such as Viewtable, greatly extends the power of HR Plus

Conclusion

HR Plus is a SAS/AF application that combines the best of the old and the best of the new, bringing together the superior data organization, analysis and performance that have always been the hallmark of good SAS programming and system design updated with the look and flexibility of the newest application development techniques and end-user tools.

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