

Enterprise Guide for Business Analysts

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ABSTRACT

Business Analysts will find that SAS's new Enterprise Guide makes it easier to perform data analysis and reporting. Using the task-oriented menus reduces the time to deliver results. This presentation shows simple step-by-step instructions on how real-world business-related questions can be answered using Enterprise Guide. With a better understanding of product sales, you can predict trends for better planning. With Enterprise Guide, you have access to the full power of SAS's analytic capabilities without writing any SAS code. Learn SAS programming the easy way and automatically generate SAS code for your reports. This paper will feature Enterprise Guide version 3.0.

This paper addresses the following topics:

- SAS Enterprise Guide: The Basics
- Selecting Analysis and Reporting Tasks
- Producing Reports for Distribution

INTRODUCTION

SAS's new Enterprise Guide is easy to use because of the point and click interface and still has the full power and flexibility of SAS. Many SAS users can leverage their programming knowledge to start creating reports using Enterprise Guide and then customize the report with their own code. Note that, basically, SAS Learning Edition is the same product as SAS Enterprise Guide.

This paper shows how to select analysis and reporting tasks through a decision tree table and then produce reports for distribution. Once the basics of how Enterprise Guide works have been introduced, the business model and different views of the sales data are explained. The sample shoe sales data set will be used to answer three typical business questions. All reports generated using Enterprise Guide did not require any SAS programming.

SAS ENTERPRISE GUIDE: THE BASICS

With Enterprise Guide, not only can you access various file types such as Excel and Access, but you can also query your data, select variables and control grouping and sorting of your reports. The tasks guide you to the type of analysis and reporting that can be performed. All that is required to use Enterprise Guide is to point-and-click and drag-and-drop.

You Can Easily

- Access various Raw Data (Excel, text)
- Query Data and Filter Reports
- Select Variables
- Control Grouping and Sorting
- Tables, Graphs And Analysis

Point-and-Click



Drag-and-Drop

HOW ENTERPRISE GUIDE WORKS

Below is a process flow chart to help explain how Enterprise Guide works. Each major step corresponds to data access, data management, data analysis or data presentation. When creating the final report, you can take advantage of ODS to create files such as RTF or PDF.

Process Flow

Access RAW Data	DATA ACCESS of all source data sets and files. Most files can be directly accessed such as Oracle, Access, Excel, etc. Enterprise Guide automatically accesses the most recent data sets without making a copy within Enterprise Guide. Be careful not to move the source data set.
↓	
Create Query, Merge data sets	DATA MANAGEMENT to create, merge and query data sets. All Enterprise Guide tasks must access a single SAS data set or query.
↓	
Create variables, formats	DATA MANAGEMENT to create variables. Variables may be created from calculations or from existing variables. Assign formats.
↓	
Analysis and Reporting	DATA ANALYSIS to summarize and process data. Create reports, analysis and graphs. Conditions must be applied in Data Management step first to subset the analysis.
↓	
Results	DATA PRESENTATION to display output in desired format. ODS may be used to publish the results in most any format including HTML, PDF, RTF, etc.

SAS ENTERPRISE GUIDE TASKS

Tasks in Enterprise Guide can be grouped into the following three categories: Project Setup, Data Management, and Analysis and Reporting. This represents a logical sequence of events as an organized approach to non-programming. You can find examples of these tasks in my book, *Data Management and Reporting Made Easy Using SAS Learning Edition 2.0*. This paper reviews selected tables and lists. Note that while using Enterprise Guide is straight forward, it does require some training for all level of users.

I. Project Setup Tasks

Description

Insert Code	Assign Libname statement, ex. libname dfile 'c:\data';
Insert Code*	Create data set, ex. data test; etc.; run;
Create Format	Create formats, Assign formats, ex. proc format; etc.; run;

* The Insert Code task can be considered the programmer's task since any SAS code can be entered, such as proc report. In addition, program updates can be made from within Enterprise Guide if the source program is referenced instead of just copying the code.

II. Data Management Tasks

Description

Create Query (Proc SQL)	Add variables and formats, ex. salegrp, salegrp. Apply subset condition, ex. 2002 sales data
Create Parameter Query*	Add filter, ex. Select a product ✓ Example of one user prompt to 'Select a Product'. ✓ Can add more variables to restrict query. ✓ Returns data set with only products selected. ✓ Can use data set as source for EG tasks.



* Can easily create a basic user-friendly interface

III. Analysis & Reporting Tasks	Description
Summary Table	Sales Statistics Table, ex. proc tabulate
Listing	Detail Sales Listing, ex. proc print
Statistical Analysis	Differences in yearly sales? ex. proc t-test
Graphs	How much have sales risen this year? ex. proc gchart


TYPICAL BUSINESS MODEL

The typical business model used in the examples consists of data on shoe sales, where product sales transactions are recorded and analyzed. The three products - boots, shoes and slippers are categorized as shoes and slippers. Other information collected in the data set are customer, date, region, district, market and quantity. The types of reports that will be generated are Sales Statistics by Product, Sales Statistics by Region, Market Segment Distribution by Product and a detail listing of Shoe Sales.



VARIOUS VIEWPOINTS OF THE SAME DATA

In the real-world, the business model would typically require you to analyze and review the sales data from different viewpoints such as the customer view, product view and organization view. By taking a comprehensive view of sales data, you get a better understanding of the product's strengths and weaknesses. For each viewpoint, there are typical business questions that can be answered. Once you have created one report, you can easily change the viewpoint of the report to provide more information.

Viewpoint	Example Question
Customer 	Who are the customers and where are they located? Fictitious companies in this paper are Sears, JCPenny and Wal-Mart. What are the bill-to and ship-to locations? Are all of the customer's purchase needs being met? Which are the most profitable customers?
Product	Which products are available for sale? Is it possible to categorize them? Examples in this paper are shoes, boots and slippers.



Do the products have a life cycle – Seasonal, Release Date?

What is the business information on each product – price, promotion code, inventory status?

What are the market segments available for the product – retail/catalog?

Organization

How is the organization structured – region, district, branch, territory, business unit?
Examples in this paper are Northern, Southern and Western.



How successful are the marketing and sales campaign promotions?

UNDERSTANDING THE SALES DATA SET

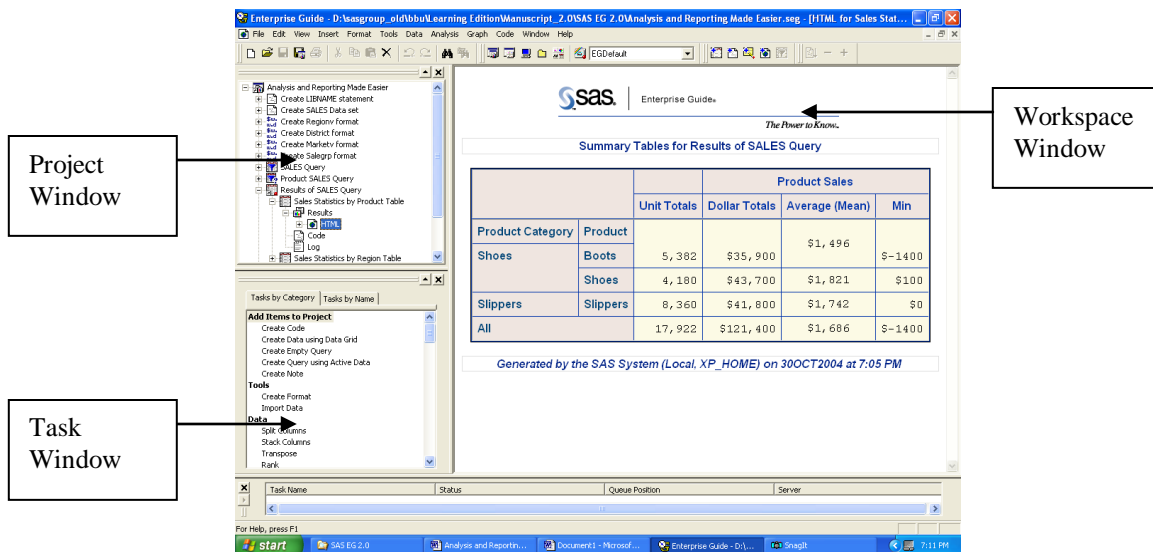
Below are the first ten records in the sales data set of fictitious companies. There is one record per customer product purchase per month.

- Three Products: Boots, Shoes and Slippers
- Other Variables: Customer, Date, Market, Sales, Quantity, Region

Obs	product	category	customer	year	month	district	market	sales	quantity	region
1	Shoes	Shoes	Sears	2001	1	1	1	300	30	1
2	Boots	Shoes	Sears	2001	1	1	1	2200	275	1
3	Slippers	Slippers	Sears	2001	1	1	1	900	180	1
4	Shoes	Shoes	Sears	2001	2	1	1	100	10	1
5	Boots	Shoes	Sears	2001	2	1	1	1400	175	1
6	Slippers	Slippers	Sears	2001	2	1	1	0	0	1
7	Shoes	Shoes	Sears	2001	3	1	1	600	60	1
8	Boots	Shoes	Sears	2001	3	1	1	0	0	1
9	Slippers	Slippers	Sears	2001	3	1	1	1400	280	1
10	Shoes	Shoes	Sears	2001	4	2	1	2600	260	1

ENTERPRISE GUIDE WINDOWS

Enterprise Guide windows consist of the following: Project, Task and Workspace. The Project window contains all of the results. The Task window lists all of the available tasks. The Workspace window displays the results and data set.



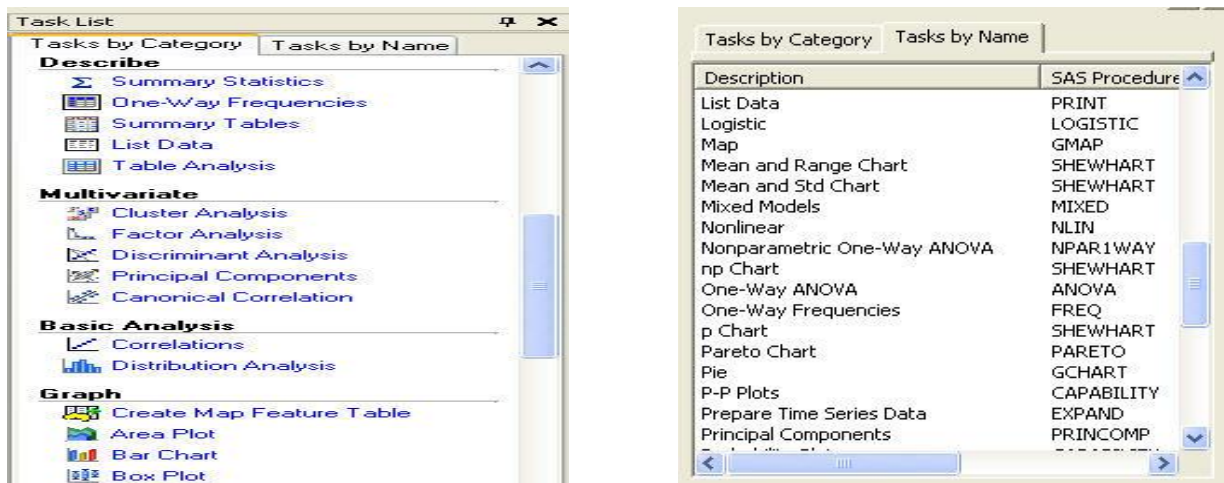
SELECTING ANALYSIS AND REPORTING TASKS

After reviewing the business model, you are ready to select the analysis and reporting tasks to answer your business questions. Enterprise Guide makes it easy to select the task based on the category or the task name. The main categories to select from are Describe, Multivariate, Basic Analysis, and Graph. The Tasks by Name tab lists the description of the task along with the name of the SAS procedure. There are over 60 tasks to choose from!

Several things to keep in mind when you are working with tasks are the following:

- Each task is associated with a SAS Procedure. There are plans to include PROC REPORT.
- Task may not contain all SAS Procedure options. You can copy and customize the SAS code created.
- Once you learn a task, other tasks are similar. Tasks are organized as tabs to specify variables and options.
- Remember to first access a data set or query before selecting tasks. Tasks need to know which variables to display.
- Assure all variables exist in a single data set or query.

Enterprise Guide Task List



KNOWING YOUR BUSINESS

SAS Enterprise Guide enables you to answer questions so you can know your business well. You've got questions, Enterprise Guide has answers!

How well do you know your business?

**WHICH
IS THE
BEST**






PRODUCT? - Shoes
CUSTOMER? - Acme
REGION? - Northern
MARKET SEGMENT? - Retail Sales
TIME PERIOD? - 4th Quarter, 2001
PRODUCT GROWTH? - Slippers

DECISION TREE TABLES

To help select the task required to answer business questions, decision tree tables can help by grouping similar questions to identify a table layout that will meet the requirements. Enterprise Guide lets you ask the questions and helps you produce answers with details on who, what, and where responses. For the questions below, see tables 1.1, 1.2, 2 and listing 1 for the answers. Tables 1.1 and 1.2 provide summary reports with statistics. Tables 2 and 3 provide percent distribution reports. Listing 1 provides a detail listing of product sales. The table below is a partial table of the Reports table from the Data Management and Reporting Made Easy Using SAS Learning Edition 2.0 book. Additional decision tree tables in the book include Data Management, Statistical Analysis and Graphs. Due to space limitations, details of selected tables will be shown in this paper.

Decision Tree Table

QUESTION	TASK/TABLE #	TABLE LAYOUT
Which products, regions or customers have the highest sales? What are the descriptive sales statistics? How are your products ranked with other similar products?	Summary Report with Statistics <i>Tables 1.1, 1.2</i>	<u>Mean</u> <u>Min</u> 
Which products have the largest volume? What is the percentage distribution by market segment? What is the sales percent distribution by product category and market segment across time periods?	Percent Distribution Reports <i>Tables 2, 3</i>	<u>N</u> <u>%</u> 
How do you compare customer transactions? What listing can be used to confirm summary reports?	Listing <i>Listing 1</i>	<u>Product Sales</u> 

PRODUCING REPORTS FOR DISTRIBUTION

Once the task has been selected, Enterprise Guide makes it easy to create the analysis and report. The SAS code for each of the tables and list was automatically created through the point and click user interface.

CREATING SUMMARY REPORTS WITH STATISTICS

To answer business questions such as “Which products, regions or customers have the highest sales?”, “What are the descriptive sales statistics?”, and “How are your products ranked with other similar products?”, it is helpful to create summary reports with statistics. This is done by selecting the Summary Table Task and clicking on the task options to select and position the variables in the table layout. Below is the result of the table produced. As you can see, shoes and slippers have the highest sales of \$ 41,800 each and total volume close to 12,000 units.



Table 1.1 Sales Statistics by Product

		Product Sales			
		Unit Totals	Dollar Totals	Average (Mean)	Min
Product Category	Product				
Shoes	Boots	5,382	\$35,900	\$1,496	\$-1,400
	Shoes	4,180	\$41,800	\$1,742	\$100
Slippers	Slippers	8,360	\$41,800	\$1,742	\$0
Total		17,922	\$119,500	\$1,660	\$-1,400



Point-and-click the Sales data set to become active



Point-and-click the Summary Tables Task under the Descriptive Category




Make the following tab selections in the Summary Tables Task

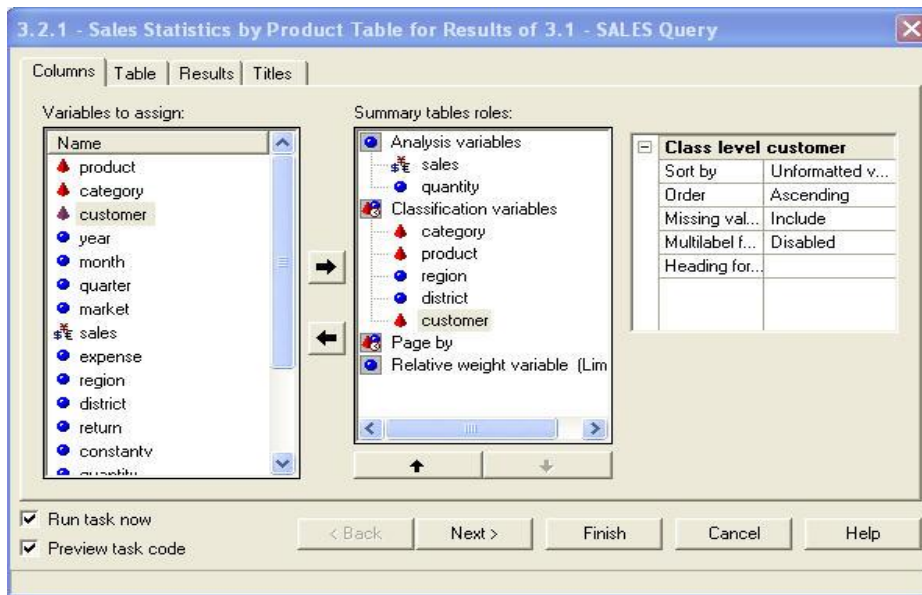
TAB	Description
COLUMNS	Assign SALES and QUANTITY as Analysis variables Assign CATEGORY and PRODUCT as Classification variables (used in table 1.1) Assign REGION and DISTRICT as Classification variables (used in table 1.2)
TABLE	Assign the following column variables: SALES and QUANTITY Assign the following row variables: CATEGORY and PRODUCT
RESULTS	No need to save results to a data set
TITLES	Enter text 'Table 1.1 Sales Statistics by Product'

The first tab in the Summary Tables Task is the Column tab.

COLUMN TAB

Drag-and-drop the SALES, QUANTITY, CATEGORY and PRODUCT variables from the Variables to assign list on the left side to the Summary Tables Roles on the right side as follows:

- Assign SALES and QUANTITY as Analysis variables ( numeric variables)
- Assign CATEGORY and PRODUCT as Classification variables ( numeric or  character variables)



The second tab in the Summary Tables Task is the Table tab.

TABLE TAB

Drag-and-drop the SALES, QUANTITY, CATEGORY and PRODUCT variables from the Available Variables on the left side to the Preview window on the right side as follows. Be careful since this step can be a little tricky.

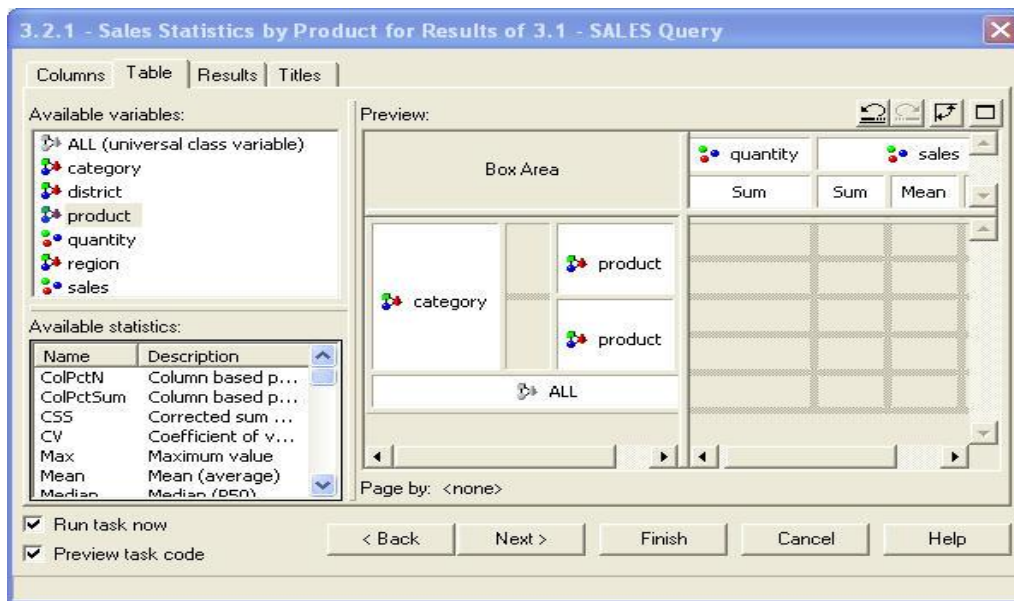
- Assign QUANTITY as the first column variable
- Assign SALES as the second column variable just right to QUANTITY
- Assign CATEGORY as the first row variable
- Assign PRODUCT as the second nested row variable just right to CATEGORY

Once the column variables are positioned, you will need to drag-and-drop the following statistics from the Available Statistics on the bottom left side to the Preview window on the right side as follows:

- SUM statistic to the column position under the QUANTITY variables.
- SUM, MEAN and MIN statistics to the column positions under the SALES variables.
- ALL keyword to the last row under CATEGORY and PRODUCT. This will calculate total sales. This requires some knowledge of the keywords.

The final table layout should look like this:

		QUANTITY	SALES		
		SUM	SUM	MEAN	MIN
CATEGORY	PRODUCT				
	PRODUCT				
ALL					



This enables the following:

- You to specify multiple statistics under numeric variables (SUM, MEAN and MIN)
- Create complex tables (Product nested within Category)
- Create grand total (Using the ALL keyword)

Enter the following labels for the first two columns:

- Enter 'Product Category' for the Category column and 'Product' for the Product column

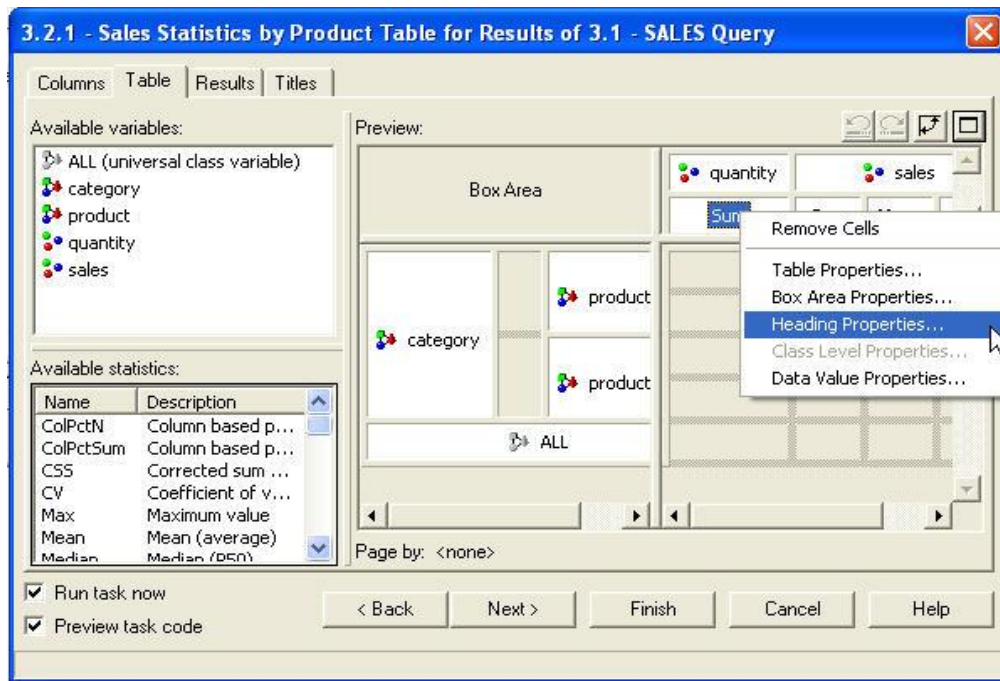
Enter the following labels for the listed statistics:

- Enter 'Unit Totals' for the first SUM column
- Enter 'Dollar Totals' for the second SUM column
- Enter 'Average (Mean)' for the MEAN column and 'Min' for the MIN column

Enter the following formats for the listed statistics. This will require some knowledge of SAS formats.

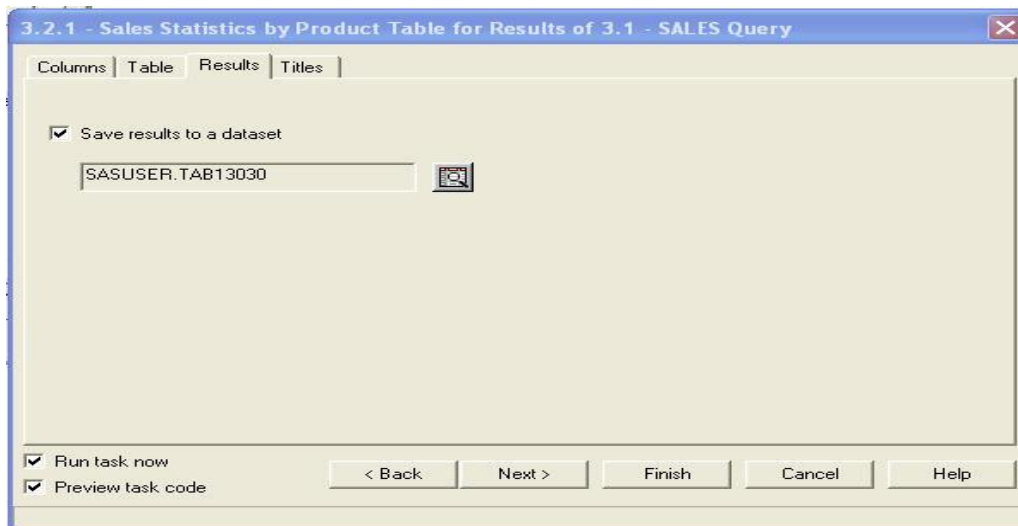
- Within the numeric category, select COMMAw.d with an overall width of 6 and decimal place of 0 for the first SUM column
- Within the currency category, select DOLLARw.d with an overall width of 8 and decimal place of 0 for the second SUM
- Repeat the DOLLARw.d instructions for the MEAN and MIN columns

Note that the pivot icon can be used to switch between rows and columns in a table.



RESULTS TAB

Although in this example, you do not need to save the results to a data set, you have this option with many tasks. The data set created will contain all the results from this task so you can select this result data set for further analysis using other tasks.



TITLES TAB

Enter text 'Table 1.1 Sales Statistics by Product' as the table title. You can also specify a footnote if needed.

The code that was automatically generated from Enterprise Guide using the Summary Table task is below. Let Enterprise Guide construct the TABLE statement for you – no SAS programming knowledge required! Remember, you can always enhance your output by manually adding style options.

```
LIBNAME EC100003 "D:\EG";
```

```

PROC TABULATE
  DATA=ec100003.SALES

  OUT=SASUSER.TAB8157 (LABEL="Table 1.1 Sales Statistics by Product")
  VAR sales quantity;

  CLASS category / ORDER=UNFORMATTED;
  CLASS product / ORDER=UNFORMATTED;

  TABLE /* Row Dimension */
    category*product
    ALL={LABEL='Total'},
    /* Column Dimension */
    quantity=' '*sum='Unit Totals'*f=comma6.
    sales='Product Sales'*
    (sum='Dollar Totals'*f=dollar8. mean='Average (Mean)'*f=dollar8.
    min='Min'*f=dollar8.);

RUN;

```

DIFFERTNT VIEWPOINT OF THE SAME DATA

With Enterprise Guide, it is easy to change the viewpoint of any report. For example, instead of looking at sales by product, you can make a slight modification to look at sales by region to get a different perspective on the sales data. Additional information is obtained about the highest sales product. As you can see, the north region and northwest district have the highest sales of \$ 89,400 and volume close to 14,000 units.

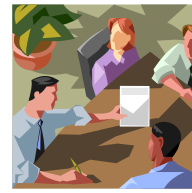


Table 1.2 Sales Statistics by Region

		Product Sales			
		Unit Totals	Dollar Totals	Average (Mean)	Min
Region	District				
North	NW	13,666	\$89,400	\$1,490	\$-1,400
South	SW	2,057	\$14,700	\$2,450	\$1,100
South	SE	2,199	\$15,400	\$2,567	\$1,400
Total		17,922	\$119,500	\$1,660	\$-1,400



Point-and-click the Sales data set to become active



Point-and-click the Summary Tables Task under the Descriptive Category or right-click to copy the task used for table 1.1

Make the following tab selections in the Summary Tables Task

TAB	Description
COLUMNS	Assign SALES and QUANTITY as Analysis variables Assign CATEGORY and PRODUCT as Classification variables (used in table 1.1) Assign REGION and DISTRICT as Classification variables (used in table 1.2)
TABLE	Assign the following column variables: SALES and QUANTITY Assign the following row variables: REGION and DISTRICT

RESULTS
TITLES

No need to save results to a data set
Enter text 'Table 1.2 Sales Statistics by Region'

The only change required from table 1.1 would be to replace Category and Product variables with Region and District variables respectively. This can be accomplished by dragging and dropping the Region and District variables over the Category and Product variables respectively. No other change is needed.

The final table layout should look like this:

		QUANTITY	SALES		
		SUM	SUM	MEAN	MIN
REGION	DISTRICT				
	DISTRICT				
ALL					

The code that is automatically generated from Enterprise Guide using the Summary Table task is below:

```
LIBNAME EC100003 "D:\EG";  
  
PROC TABULATE  
  DATA=ec100003.SALES  
  
  OUT=SASUSER.TAB8158(LABEL="Table 1.2 Sales Statistics by Region");  
  
  VAR sales quantity;  
  
  CLASS region /      ORDER=UNFORMATTED;  
  CLASS district /   ORDER=UNFORMATTED;  
  
  format regionv. district districtv.;  
  
  TABLE /* Row Dimension */  
    region*district  
    ALL={LABEL='Total'},  
    /* Column Dimension */  
    quantity=' '*sum='Unit Totals'*f=comma6.  
    sales='Product Sales'*  
    (sum='Dollar Totals'*f=dollar8. mean='Average (Mean)'*f=dollar8.  
    min='Min'*f=dollar8.) ;  
  
RUN;
```

CREATING PERCENT DISTRIBUTION REPORTS

To answer business questions such as “Which products have the largest volume?”, “What is the percentage distribution by market segment?”, and “What is the sales percent distribution by product category and market segment across time periods?”, it is helpful to create percent distribution reports. These types of reports are ideal to analyze categorical data. This is done by selecting the Summary Table Task and clicking on the task options. Below is the result of the table produced. As you can see, retail sales have the strongest market segment with 80% of the market.



Table 2. Market Segment Distribution by Product

		Market Segment				Total	
		Catalog		Retail			
		N	%	N	%	N	%
Product Category	Product						
Shoes	Boots	1,186	22	4,196	78	5,382	100
	Shoes	810	19	3,370	81	4,180	100
Slippers	Slippers	1,660	20	6,700	80	8,360	100
Total		3,656	20	14,266	80	17,922	100



Point-and-click the Sales data set to become active



Point-and-click the Summary Tables Task under the Descriptive Category

Make the following tab selections in the Summary Tables Task

TAB	Description
COLUMNS	Assign QUANTITY as Analysis variables Assign PRODUCT, CATEGORY and MARKET as Classification variables
TABLE	Assign the following column variables: MARKET and QUANTITY Assign the following row variables: CATEGORY and PRODUCT
RESULTS	No selection needed to save results to data set
TITLES	Enter text 'Table 2. Market Segment Distribution by Product'

The final table layout should look like this:

		MARKET			
		QUANTITY		QUANTITY	
		SUM	ROWPCTSUM	SUM	ROWPCTSUM
CATEGORY	PRODUCT				
	PRODUCT				
ALL					

The code that is automatically generated from Enterprise Guide using the Summary Table task is below. Enterprise Guide knows which keywords, such as RowPctSum, in the TABLE statement are required.

```
LIBNAME EC100003 "D:\EG";

PROC TABULATE
  DATA=EC100003.SALES;

  VAR quantity;
```

```

CLASS product / ORDER=UNFORMATTED;
CLASS category / ORDER=UNFORMATTED;
CLASS market / ORDER=UNFORMATTED;

```

```
format market marketv.;
```

```

TABLE /* Row Dimension */
  category*product
  ALL={LABEL='Total'},
  /* Column Dimension */
market={LABEL='Market Segment'}*
quantity={LABEL='' }*(Sum={LABEL='N' }*F=COMMA6. RowPctSum={LABEL='%'}*F=3.)
ALL={LABEL='Total'}*
quantity={LABEL='' }*(Sum={LABEL='N' }*F=COMMA6. RowPctSum={LABEL='%'}*F=3.) ;

```

```
RUN;
```

Below is another example of a percent distribution report to analyze yearly sales distribution by product. This report was not created by using an Enterprise Guide task, but by using Proc Report.

Table 3. Yearly Sales Distribution by Product

	Sales by Year						QNTY Total	SALES Total
	2001			2002				
PRODUCT	N	Total	% Total	N	Total	% Total		
Boots	2,610	\$20,100	32	2,772	\$15,800	27	5,382	\$35,900
Shoes	2,270	\$22,700	36	1,910	\$21,000	36	4,180	\$43,700
Slippers	3,940	\$19,700	32	4,420	\$22,100	38	8,360	\$41,800
<i>Total</i>	<i>8,820</i>	<i>\$62,500</i>	<i>100</i>	<i>9,102</i>	<i>\$58,900</i>	<i>100</i>	<i>17,922</i>	<i>\$121,400</i>

The Proc Report code below is required to create table 3 above.

```

proc report data=mydataea.sales nowd split="" headline;
  column product year,(quantity sales pct_prd)
  quantity=grd_tot sales=grd_pct;
  define product / group 'PRODUCT';
  define year / across 'Sales by Year' center;
  define quantity / sum 'N' center format=comma6.;
  define sales / sum 'Total' format=dollar8.;
  define pct_prd / computed '% Total' width=5 format=pctf.;
  define grd_tot / sum 'QNTY Total' format=comma6.;
  define grd_pct / sum 'SALES Total' width=5 format=dollar8.;

  compute before;
    gt1=_c3_; gt2 = _c6_; gt3 = _c8_;
  endcomp;

  compute pct_prd;
    _c4_ = (_c3_/gt1)*100; _c7_ = (_c6_/gt2)*100;
  endcomp;
  rbreak after / summarize skip ol ul;

  compute after;
    product = 'Total';
  endcomp;
run;

```

DETAIL DATA IN A LIST REPORT

To answer business questions such as “How do you compare customer transactions”?, or “What listing can be used to confirm summary reports”?, it is helpful to create a detail listing. This is done by selecting the List Data Task and clicking on the task options. Below is the result of the listing produced. As you can see in the sample list, the list includes all sales transaction information for each purchase. As you can see, Sears bought 30 units of shoes in January 2001.



List 1. Detail Listing of Shoe Sales (partial)

Obs	product	category	customer	year	Month	district	market	sales	quantity	region
1	Shoes	Shoes	Sears	2001	1	1	1	300	30	1
2	Boots	Shoes	Sears	2001	1	1	1	2200	275	1
3	Slippers	Slippers	Sears	2001	1	1	1	900	180	1
4	Shoes	Shoes	Sears	2001	2	1	1	100	10	1
5	Boots	Shoes	Sears	2001	2	1	1	1400	175	1
6	Slippers	Slippers	Sears	2001	2	1	1	0	0	1
7	Shoes	Shoes	Sears	2001	3	1	1	600	60	1
8	Boots	Shoes	Sears	2001	3	1	1	0	0	1
9	Slippers	Slippers	Sears	2001	3	1	1	1400	280	1
10	Shoes	Shoes	Sears	2001	4	2	1	2600	260	1



Point-and-click the Sales data set to become active



Point-and-click the List Data Task under the Descriptive Category

You can keep the default setting for this task to list all variables in the order they were created.

The code that is automatically generated from Enterprise Guide using the List Data Table task is below:

```
LIBNAME EC100003 "D:\EG";  
PROC PRINT DATA = EC100003.SALES;  
RUN;
```

CONCLUSION

In conclusion, Enterprise Guide offers new SAS users a great way to immediately become productive in creating reports to answer real-world business questions. For SAS users with some knowledge of SAS programming, Enterprise Guide offers a great tool to quickly develop prototype reports that can be customized. All code generated from Enterprise Guide can be exported and enhanced with style options. In addition, the Create Code task enables any SAS code, such as Proc Report, to be executed from Enterprise Guide. With Enterprise Guide you can have it all! Note that, basically, SAS Learning Edition and SAS Enterprise Guide are the same product. All the examples in this paper will also work when using the SAS Learning Edition. See my book, Data Management and Reporting Made Easy with SAS Learning Edition 2.0 for more information on these table along with others.

➤ **You Can** Easily Access Data and Run Tasks!

➤ **You Can** Use ODS to create RTF, HTML, etc!

➤ **You Can** Apply EG to a Business Model to answer business questions based on views such as customer, product and organization!

➤ **You Can** Create Complex tables, analysis and graphs without writing any SAS code! ex. Sales Statistics, Market Segment Distribution, Detail List

REFERENCES

Business Intelligence SAS Users Group - <http://www.bisug.org/index.html>

<http://support.sas.com/documentation/onlinedoc/guide/>

<http://support.sas.com/rnd/le/>

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