Using Dynamic Data Exchange (DDE) to Pass Data to Microsoft® Word documents from within the SAS® System

Mark Bodt, SUNKEN TREASURE SOFTWARE SYSTEMS LIMITED, New Zealand

Abstract
Dynamic Data Exchange (DDE) is a method of communicating with PC based applications from within the SAS System. DDE allows the reading and writing of data from or to the application. Indeed, the applications can even be controlled from within the SAS system.

While most day to day tasks can be achieved within the SAS system, it is sometimes necessary to produce reports, letters etc using other applications such as Microsoft Excel or Microsoft Word.

This paper discusses how the use of DDE can achieve the writing of data to Microsoft Word.

Scope
This paper covers topics discussed during the 10 minute Coders’ Corner presentation. The basics of writing data to Word using DDE are outlined, however it is not intended to thoroughly discuss the topic. This topic will be covered in depth in Observations Vol 5, Num 3, Second Quarter 1996

Introduction
Many sites use PC based applications such as Microsoft Word and Microsoft Excel as their standard word processing and spreadsheet applications. These tools are often used to produce standard letters and reports. Output from SAS processing is sometimes required as part of a Word Document. This can be achieved in a number of ways, DDE being one way.

What is Dynamic Data Exchange?
Dynamic Data Exchange (DDE) is a method of dynamically exchanging information between applications. DDE is a feature of the SAS system for:
- Windows™
- Windows NT™
- OS/2®
- Windows 95™

DDE uses a Client / Server Relationship to enable the client to request information from a server. It is available in Version 6.08 (6.06 for OS/2) and later versions. SAS is always the client in Version 6.08, 6.10 and 6.11 of the SAS System. This means that SAS can read data from or write to other applications and that commands can be sent to the other application, but that the process is initiated by SAS. Currently SAS cannot act as a DDE Server, that is, another application cannot initiate the passing of data to or from the SAS system.

Setting up a DDE Link.
To use DDE you must have both SAS and Word running. It is very easy to set up a DDE link. A special filename statement is used. The basic syntax is:

Filename fileref DDE ‘DDE-triplet’;

Where fileref is the alias that is given to the link. This must be a valid SAS name.
DDE is a special device-type key word.
DDE-triplet is the identifier for the link.

The DDE triplet.
The DDE triplet is generally made up of three parts being:

‘application-name|topic:|item’

- application name is the name of the server application.
- topic is the topic of conversation.
- item is the range of conversation specified between the client and server applications.

The | and ! are special characters that separate the different parts of the triplet.

The values of the DDE triplet are determined by the server application.

For Microsoft Word:
An example of a triplet is:

‘Winword|c:\report\sales.doc|address’

- Application name: Winword
- Topic: The document name eg. c:\report\sales.doc
- Item: The bookmark where the data is to be inserted.

Writing data using DDE
In this example, data will be written from a SAS dataset to a specific bookmark in a Word document. The document is first loaded and a bookmark is defined at the point where the SAS data is to be inserted. Refer to Word documentation regarding how to define a bookmark. The example document is shown below. The bookmark (called pupils) is defined in the document at the line indicated by the →.

Mt Eden Primary School

As requested in February, I have collected the names of the pupils in Room 11 who have low marks. They are listed below.

Should you have any further requests, please do not hesitate to contact me.

Regards

Harriet Henry
Teacher

The SAS program is shown on the next page.
*Set up DDE link;
filename word1 DDE
'Winword\c:\data\word\stss\present\sugii2\1\pupils';

*Write out data;
data _null_;  
set stss.user.class;  
file word1 notab;  
put name 'age age 'sex' sex age 'age age';  
run;

*Dealocate filename (DDE link);  
filename word1 ;

- The DDE link must first be established. In this example, the 
  fileref is word1. Next is the DDE keyword and then the DDE 
  triplet.
- For the purposes of the example, data from the dataset 
  SASUSER.CLASS will be used. This contains some data about 
  pupils.
- The statement to write the data to a file is in the same format as 
  with any file write. The fileref is word1 as defined in the filename 
  statement. By default SAS sends a tab delimiter between each 
  word sent to the DDE link. In some cases a variable may have 
  more than one word as the character value, for example if a 
  person has two christian names 'Mary Jane' or 'Jean Paul'. By 
  default, SAS will put a tab character between the words. As this 
  will result in a tab between each word in the document, the 
  NOTAB option is specified to overcome this. This instructs SAS 
  not to put tab delimiters by default.
- The data is then transferred to the Word document. The fields 
  name, age and sex are put to the file (DDE link). If the data sent 
  to the Word document is to later be formatted into a table, a 
  delimiter should be sent between each variable. In this example 
  tab delimiters are used. As SAS is not putting tab delimiters 
  (because of the NOTAB option), the tab delimiter character must 
  be put between each field that is sent to the word document. 
  This means that a tab delimiter is sent between each variable 
  rather than each word that is sent to Word. 09x is the ASCII 
  Hexadecimal value for the tab delimiter. Other delimiter 
  characters could also be used.

The program is run and the data is transferred to the Word 
document. The results are shown below.

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As requested in February, I have collected the names of the pupils in Room 
11 who have low marks. They are listed below.

Alice 13 F
Becky 13 F
Gail 14 F
Karen 12 F
Kathy 12 F
Mary 15 F
Sandy 11 F
Sharon 15 F
Tammy 14 F
Alfred 14 M
Duke 14 M
Guido 15 M
James 12 M
Jeffrey 13 M
John 12 M
Philip 16 M
Robert 12 M

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Thomas 11 M
William 13 M

Should you have any further requests, please do not hesitate to contact me.

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Once the data has been transferred, any formatting can be carried 
out in the Word document. For example, the transferred data can be 
placed into a table, and borders and shading applied.

Conclusion

Passing data to Word from within the SAS system is a straightforward task. This article briefly discussed a simple example. DDE 
can also be used to control Word from within the SAS System, 
providing the ability to automate applications. Operations such as 
opening, saving, formatting and printing Word documents can be 
controlled from within the SAS System. I have successfully used 
DDE with Word to generate form letters, monthly accounts to 
clients, data dictionaries etc, all from within the SAS System and 
all without the need for the user to do any work at all in Word. This topic 
will be covered in depth in the forthcoming article in Observations.

References

Bodd, Mark (1996), "Talking to PC Applications using Dynamic Data 
Exchange (DDE)", Observations: The Technical Journal for SAS 
Software Users Vol. 5, Num 3, Second 
Quarter 1996.


Contact details

Sunken Treasure Software Systems Limited
Specialising in SAS Software Consultancy for the 
Asia - Pacific Region

73 Pine Street Mt Eden Auckland New Zealand 
PH 025 725 386 FAX +64-9-620-9079 
INTERNET MARKBOD7@STSS.CO.NZ

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