

VIEWS

International SAS Programmer Community



News, Hints, Tips and Information for SAS® Users

Issue 50, 2nd Quarter 2010

Figure 1. Excel Workbook After Load (or Subsequent Save)

	A	B	C	D	E	F	G	H
1	Student	Sex	Age					
2	Alfred	M	14					
3	Alice	F	13					
4	Barbara	F	13					
5	Carol	F	14					
6	Henry	M	14					
7	James	M	12					
8	Jane	F	12					
9	Janet	F	15					
10	Jeffrey	M	13					
11	John	M	12					
12	Joyce	F	11					

Figure 2. Saved As PDF

Student	Sex	Age
Alfred	M	14
Alice	F	13
Barbara	F	13
Carol	F	14
Henry	M	14
James	M	12
Jane	F	12
Janet	F	15
Jeffrey	M	13
John	M	12
Joyce	F	11

Here is the code used to create the PDF above:

```
OPTIONS NOXWAIT NOXSYNC;  
X '"C:\Program Files\  
    Microsoft Office\Office12\EXCEL.exe";  
* Start Excel 2007 *;  
* The later DDE save as PDF only works with  
Excel 2007 *;
```

I don't think anyone thought, when the first issue of *VIEWS News* was published over 12 years ago, that one day the 50th issue would be published, but here it is! I'd like to thank everyone, whether you are a contributor, reader, or part of the support team, for making all 50 issues possible. To celebrate the 50th issue I have another newsletter issue for you filled with SAS news, hints and tips that I hope you will find interesting. In this issue of *VIEWS News* I would like to welcome our newest *VIEWS* Consultants, Sunil Gupta and Craig Wildeman. There are also articles from our regular contributors LeRoy Bessler (with Craig), and Murphy Choy, who between them have written articles on generating PDF output from SAS using Excel 2007 with DDE, encryption algorithms, and ranking without PROC RANK. Finally, my regular Formats, Options, and Functions section has another collection of unusual and underused features of SAS software.

If you would like to contribute an article, to re-visit and improve an existing article, or just discuss the possibility of doing so, please feel free to send an email to me at newsletter@views-uk.org. A list of subject suggestions for your articles can be found on the *VIEWS* web site, and anyone is very welcome to add to that list by sending emails to newsletter@views-uk.org with your own questions.

Philip R Holland (Newsletter Editor)

Membership of *VIEWS* is **free** and you can register for notification of all future *VIEWS* events by emailing us at membership@views-uk.org, making certain you include your name and postal address. If you would like to receive email notification whenever a new issue of the free quarterly *VIEWS News* is published on the web site, please remember to also include your email address.

Did You Know?

If you have a useful hint or tip, please send it to the Editor, and share it with the *VIEWS* membership.

SAS DDE to Excel 2007 and PDF

Typically one would create a PDF directly from SAS using ODS PDF. However, if you need to deliver the same information, possibly to different recipients, in a comparable layout as an Excel 2007 spreadsheet or a matching PDF, there is a Dynamic Data Exchange (DDE) solution. The spreadsheet data can be used however that recipient wishes, and the PDF is read-only unalterable information for its recipients.

```

DATA _NULL_;
  x = SLEEP(3);
  * Wait 3 seconds for EXCEL to start *;
RUN;

FILENAME DDEcmds DDE "excel|system";

FILENAME hdgcol1 DDE 'Excel|Sheet1!R1C1';
FILENAME hdgcol2 DDE 'Excel|Sheet1!R1C2';
FILENAME hdgcol3 DDE 'Excel|Sheet1!R1C3';
FILENAME TheData DDE 'Excel|Sheet1!R2C1:R20C3';

DATA _NULL_;
  FILE hdgcol1;
  PUT 'Student';
  FILE hdgcol2;
  PUT 'Sex';
  FILE hdgcol3;
  PUT 'Age';
  SET sashelp.class;
  FILE TheData;
  PUT name sex age;
RUN;

FILENAME hdgcol1 CLEAR;
FILENAME hdgcol2 CLEAR;
FILENAME hdgcol3 CLEAR;
FILENAME TheData CLEAR;

DATA _NULL_;
  FILE DDEcmds;
  PUT '[error(false)]';
  * suppress Excel prompts to verify your
  intentions *;
  * E.g., whether or not you want to replace a
  pre-existing version of this file. *;
  PUT '[save.as("C:\DDEoutput\Test",1)]';
  x = SLEEP(3);
  * Wait 3 seconds for Save to complete *;
RUN;

/* To save the default three-sheet workbook as
PDF, TXT, or CSV without needing to reply
to prompts, delete the two empty
worksheets. */

DATA _NULL_;
  FILE DDEcmds;
  PUT '[workbook.delete("Sheet2")]';
  PUT '[workbook.delete("Sheet3")]';
  PUT '[error(false)]';
  PUT '[save.as("C:\DDEoutput\Test",57)]';
  x = SLEEP(3);
  * Wait 3 seconds for Save to complete *;
RUN;

* 57 is the file type for PDF.
This only works with Excel 2007. *;

DATA _NULL_;
  FILE DDEcmds;
  PUT '[error(false)]';
  PUT '[quit()]';
RUN;

FILENAME DDEcmds CLEAR;

```

Craig Wildeman and LeRoy Bessler

Classical Cipher in SAS: BIFID Cipher

The BIFID Cipher is a very complex cipher incorporating elements from the polybius square with transposition and fractionation to achieve diffusion. Compared to the previous 2 examples, it is a far more complex algorithm in terms of amount

of manipulation of characters. The first fundamental difference lies in the presence of 2 string substitutions, which is then remade into a single string with the same values set within. It is also considered to be quite a strong form of encryption.

Implementation of the BIFID cipher in SAS:

```

/*****
BIFID Cipher
-----
Parameter  Description
-----
input      Input data
var         Variable to be encrypted/decrypted
seed       Key
mode       ENCRYPT/DECRYPT
*****/

%MACRO bifid_cipher(input=, var=, seed=
,mode=);

/*****
POLYBIUS CREATION SECTION
*****/

/*INITIALIZATION OF THE POLYBIUS TABLE*/

DATA polybius_table;
  original =
  'ABCDEFGHIJKLMNOPQRSTUVWXYZ123456789.';
  length_of_string = LENGTH(original);
  DO i = 1 TO length_of_string;
    /*SELECTING EACH LATTER AND
    OUTPUTTING THEM*/
    word = SUBSTR(original, i, 1);
    OUTPUT;
  END;
  DROP original length_of_string i;
RUN;

/*CREATING RANDOMNESS TO PRODUCE SQUARES*/

DATA polybius_table;
  SET polybius_table;
  /*PRODUCING THE RANDOMNESS*/
  chance = RANUNI(&seed.);
RUN;

/*SORTING THE TABLE SIMULATE RANDOMNESS
IN TABLE*/

PROC SORT DATA = polybius_table;
  BY chance;
RUN;

/*SETTING THE POSITION OF THE POLYBIUS TABLE*/

DATA polybius_table;
  SET polybius_table;
  RETAIN x y count;

  /*FIRST INITIALIZATION*/
  IF _N_ = 1 THEN DO;
    x = 1;
    y = 1;
    count = 1;
  END;

  /*REPETITION FOR THE SQUARE BEHAVIOUR*/
  ELSE IF count = 6 THEN DO;
    x = 1;
    y = SUM(y, 1);
    count = 1;
  END;

```

```

/*INTERMEDIATE CALCULATIONS*/
ELSE DO;
    x = SUM(x, 1);
    count = SUM(count, 1);
END;
RUN;

/*****
VALUE ASSIGNING SECTION
*****/

/*CIPHER CREATION SECTION*/

DATA _NULL_;
    SET polybius_table;
    /*LENGTH DECLARATIONS*/
    LENGTH cipher1 $45 cipher2 $45 key $45;
    /*KEY RETENTION FOR BOTH CIPHER AND
    DECIPHER*/
    RETAIN cipher1;
    RETAIN cipher2;
    RETAIN key;
    /*ENCRYPTION KEY AND CIPHERS*/
    key = COMPRESS(key || word);
    cipher1 = COMPRESS(cipher1 || x);
    cipher2 = COMPRESS(cipher2 || y);
    /*ASSIGNMENT OF KEY AND CIPHER AS
    MACRO VALUES*/
    CALL SYMPUT('cipher1', COMPRESS(cipher1));
    CALL SYMPUT('cipher2', COMPRESS(cipher2));
    CALL SYMPUT('key', COMPRESS(key));
    /*SUBSTITUTION KEY SECTION*/
    sub_key = COMPRESS(x || y);
    CALL SYMPUT('subkey' || TRIM(LEFT(_N_))
    ,sub_key);
    CALL SYMPUT('letter' || TRIM(LEFT(_N_))
    ,word);

RUN;

/*****
LENGTH CHECK
*****/

PROC SQL NOPRINT;
    /*ENSURING THAT THE TOTAL LENGTH WILL
    BE AVAILABLE FOR USE*/
    SELECT 2 * MAX(LENGTH(&var.))
    INTO    :max_length
    FROM    &input.;
QUIT;

/*****
ENCRYPTION/DECRYPTION SECTION
*****/

DATA &input.;
    SET &input.;
    /*ENCRYPTION SECTION*/
    %IF &mode. = ENCRYPT %THEN %DO;
    /*DECLARATION OF THE LENGTH OF THE
    ENCRYPTED FIELD*/
    LENGTH encrypted_var. $ &max_length.;
    /*REMOVAL OF SPACES WITH DECIMALS*/
    &var. = SUBSTR(TRANSLATE(&var., '.', ' '),
    ,1, LENGTH(&var.));
    /*CREATING CIPHER KEYS*/
    cipher1_var. =
        TRANSLATE(&var., "&cipher1.", "&key.");
    cipher2_var. =
        TRANSLATE(&var., "&cipher2.", "&key.");
    /*COMBINED CIPHER KEY*/
    cipher_var. =
        COMPRESS(cipher1_var. || cipher2_var.);

```

```

/*SUBSTITUTION OF KEYS*/
DO i = 1 TO LENGTH(cipher_var.) - 1 BY 2;
    /*INITIALIZATION*/
    IF i = 1 THEN encrypted_var. = '';

    /*SUBSTITUTION STEPS*/
    IF SUBSTR(cipher_var., i, 2) =
        COMPRESS("&subkey1.") THEN
        encrypted_var. = COMPRESS(encrypted_var.
        || "&letter1.");

    %DO j = 1 %TO 36;
        ELSE IF SUBSTR(cipher_var., i, 2) =
            COMPRESS("&subkey&j.") THEN
            encrypted_var. = COMPRESS(encrypted_var.
            || "&letter&j.");
    %END;
END;

/*REMOVAL OF UNNECESSARY COLUMNS*/
DROP i cipher1_var. cipher2_var.
    cipher_var.;
%END;

%ELSE %IF &mode. = DECRYPT %THEN %DO;
    /*DECLARATION OF THE DECRYPTION FIELD*/
    LENGTH decipher_key $ &max_length.
        decipher_key1 $ &max_length.
        decrypted_var. $ &max_length.;
    /*CREATING THE DECIPHER KEY*/
    decipher1_var. = TRANSLATE(&var.
        ,"&cipher1.", "&key.");
    decipher2_var. = TRANSLATE(&var.
        ,"&cipher2.", "&key.");

    /*CREATING COMBINED DECIPHER KEY*/
    DO i = 1 TO LENGTH(&var.);
        /*INITIALIZATION*/
        IF i = 1 THEN decrypted_var. = '';
        decipher_key = COMPRESS(decipher_key
        || SUBSTR(decipher1_var., i, 1)
        || SUBSTR(decipher2_var., i, 1));
    END;

    /*CREATING THE ORIGINAL CIPHER KEY*/
    DO i = 1 TO LENGTH(&var.);
        /*INITIALIZATION*/
        IF i = 1 THEN decrypted_var. = '';
        decipher_key1 = COMPRESS(decipher_key1
        || SUBSTR(decipher_key
        ,LENGTH(&var.) + i, 1));
    END;

    /*SUBSTITUTION OF THE LETTERS*/
    DO i = 1 TO LENGTH(decipher_key1) - 1 BY 2;
        /*INITIALIZATION*/
        IF i = 1 THEN decrypted_var. = '';
        /*SUBSTITUTION STEPS*/
        IF SUBSTR(decipher_key1, i, 2) =
            COMPRESS("&subkey1.") THEN
            decrypted_var. =
                COMPRESS(decrypted_var.
                || "&letter1.");

        %DO j = 1 %TO 36;
            ELSE IF SUBSTR(decipher_key1, i, 2) =
                COMPRESS("&subkey&j.") THEN
                decrypted_var. =
                    COMPRESS(decrypted_var.
                    || "&letter&j.");
        %END;
    END;

```

```

/*RETRIEVAL OF SPACES WITH DECIMALS*/
decrypted_&var. =
    TRANSLATE(decrypted_&var., ' ', '.');
/*REMOVAL OF UNNECESSARY COLUMNS*/
DROP i decipher1_&var. decipher2_&var.
    decipher_key decipher_key1;
%END;
RUN;
%MEND;

/*-----*/
%bifid_cipher(input=class, var=name, seed=1234
    ,mode=ENCRYPT);

```

This is a complex cipher, which can be implemented in SAS, and provides a strong cipher to encrypt information.

Murphy Choy, University College Dublin

Ask The Consultant

This part of VIEWS News is where you can get your technical questions answered. Send your questions to the Editor.

Rank without PROC RANK: Using Data Steps

Q: How can you resolve the memory issues experienced when using PROC RANK?

A: PROC RANK is one of the most common method used to group observations together according to their values. However, PROC RANK is not a very memory efficient technique and can take a lot time. To overcome the memory issue, a pure Data Step can be made to achieve the same ranking system and at the same time, with the help of Format-Merge technique, we can then append the rank to the original data simulating the abilities of PROC RANK.

PROC RANK is one of the most common technique for users to group numeric variables together based on their value. However, PROC RANK is one of the most memory consuming procedures in SAS, and can take a long time to complete for certain data. Due to the memory consumption, it can occasionally cause system crashes, or program aborts, which is highly undesirable for big overnight data processing work. To ensure more reliability, the PROC RANK can be decomposed into a series of Data Steps, combined with a Format-Merge technique.

The original PROC RANK uses a formula to establish the position of each observation, if you were to sort them from low to high. The formula is explicitly stated in the SAS documentation and can be summarized with the following equation for computation in SAS:

$$\text{Groups} = \text{Floor} \left(\frac{\text{Current Position} \times \text{Number of Groups}}{\text{Number of Obs} + 1} \right)$$

This formula is the underlying basis for the grouping calculation in PROC RANK. However, if you were to use the formula only to calculate the grouping, you will recognize that the grouping might change for the same values due to their position in the data itself. To prevent this type of grouping from occurring, the simplest solution is to use a BY statement, in which the grouping is calculated based on the position of the first observation of the sorted variable, which is different from the

prior values. This step ensures that all values which are the same will have the same grouping through out. Once the ranking is calculated, it is then appended to the data.

As the ranking method above requires a sort in the beginning, a full sort on a single variable on large datasets would prove to be counter productive and thus data reduction in the first step is crucial to improving performance. Thus the fastest way to achieve a merge for a single variable file with a much larger data set is the use of the Format-Merge approach, which is considered superior to traditional Sort-Merge approach.

While PROC RANK is available in SAS for grouping data, you can also achieve the same through innovative usage of SAS Data Steps.

```

/*****
MANUAL RANKING OF THE VARIABLES
*****/
%MACRO manual_rank(input=, xvar=, groups=);

/*****
SORTING THE DATA INTO THE SEQUENCE NEEDED FOR
THE CALCULATION
*****/

PROC SORT DATA = &input. (KEEP = &xvar.)
    OUT = working_data;
    BY &xvar.;
RUN;

/*****
ACTUAL CALCULATION STEP
*****/

DATA working_data;
    SET working_data NOBS = numobs;
    BY &xvar.;
    RETAIN groups;
    /*CREATING THE GROUPING*/
    IF FIRST.&xvar. THEN
        groups = FLOOR(_N_ * &groups.
            / (numobs + 1));
    IF MISSING(&xvar.) THEN groups = &groups. + 1;
RUN;

/*****
FORMAT MERGE APPROACH
*****/

/*DECLARING THE FORMATTING DATA*/
DATA working_data;
    SET working_data;
    fmtname = 'key';
    label = groups;
    RENAME xvar. = start;
RUN;

/*REMOVAL OF NON UNIQUE VALUES*/
PROC SORT DATA = working_data NODUPKEY;
    BY start;
RUN;

/*CREATING THE FORMAT*/
PROC FORMAT CNTLIN = working_data;
RUN;

/*FORMAT MERGE STEP*/
DATA &input.;
    SET &input.;
    g_&xvar. = PUT(xvar., key.);
RUN;
%MEND;

```

```
/*-----*/
%manual_rank(input=class, xvar=weight
             ,groups=3);
```

Murphy Choy, University College Dublin

Formats, Options, and Functions

This section is devoted to the description of useful, or unusual, SAS Formats, Options, and Functions.

The **BYTE()** function returns the character from the specified position in the ASCII or EBCDIC character set, depending on the platform.

[SAS 9] The **LOCALE=** system option sets the default language, date format and paper size to that locale. Here are some possible values:

English_UnitedKingdom, English_Ireland, French_France, French_Switzerland, French_Belgium, Dutch_Netherlands, Dutch_Belgium, German_Germany, German_Switzerland, Italian_Italy, Italian_Switzerland, English_UnitedStates, English_Canada, English_Australia, English_NewZealand, English_Singapore, English_SouthAfrica, English_India and French_Canada.

[SAS 9] The **NLDATEw.** format converts a SAS date value to the date value of the specified locale (see **LOCALE=** above), and then writes the date value as a date. For example, 24MAY2010 is written in **LOCALE=English_UnitedKingdom** as “24 May 2010”.

News

Enterprise Guide Book Review

The following reviews can be found on the back cover of the new SAS Enterprise Guide book by Susan J Slaughter and Lora D Delwiche, entitled “The Little SAS® Book for Enterprise Guide® 4.2”, ISBN 978-1-59994-726-6.

Philip R Holland, Holland Numerics:

“It may be a 'Little Book', but I was amazed at how much information about SAS Enterprise Guide 4.2 is included. The tutorials successfully take the reader on a journey covering all the main topics; then the reference section expands on these topics. I've been using SAS Enterprise Guide since version 1.1, but while reading this book I was reminded frequently of features that I ought to use more. It has something for everyone!”

SAS Global Forum 2010: A Recap

The SAS Global Forum is held in the city of Seattle, Washington State at the State Convention Centre. It was a wonderful city with an evergreen surrounding. The city is surrounded by wonderful forest and beautiful mountain ranges with Mt. Rainier being the most breathtaking of them all. With such beautiful background to complement the conference, this proves to be one of the best conference in recent times.

The conference started with a wonderful presentation by Dr. Jim Goodnight who has once again demonstrated the wonders and capabilities of SAS by introducing an example of a risk management project in Singapore. There was a need to implement a system that will measure risk across multiple

products with different positions. Such calculations require the use of matrix which is practically impossible for a situation with 40,000 positions to be calculated. To SAS, impossible is nothing and to prove it, Dr. Goodnight calculates the exact value in front of the stage with just 2 minutes of time. SAS has indeed again outperform its peers in the area of innovation.



The SAS Global Forum main events started with the buzzing sound of SAS users interacting with various SAS developers, authors and presenters. The quality of the presentations has went up several notches as compared to the previous conference in Washington DC. It was wonderful to have many attendees from around the world giving their viewpoints about analytics and SAS programming. We have presenters from countries like Italy, South Africa, India and Singapore. This has truly make the SAS Global Forum an international event. I have managed to attend the presentation by Andrew Karp (Sierra Information) which proves to be an excellent source of new ideas and things to apply in daily work. The day ended with the annual book giving lucky draw which yielded me a credit risk book by Clark Abraham. It was an amazing book on credit risk with many new interesting ideas on the aspects of coming up with risk framework. I was honoured to have the author to sign on the book itself which makes it very special. In the Monday evening, we have the annual SAS-L meet-up where individuals with outstanding contributions to SAS-L are honoured.

The lunch event on Tuesday was wonderfully entertained by Michael A. Raithel who presented on the topic of **“It’s not easy being a SAS Programmer!”**. Many people will agree that MMMIIIIKKKKEEEE (as we fondly call him) has touched the hearts of many SAS programmers through his witty presentation.



Several of the SAS presenter's presentations were packaged in the form of a take out which can be purchased from the internet and use for personal development. Our *VIEWS News* Editor Phil is one of the few individuals with the rare distinction of being one of the presenter whose presentation can be purchased from the online source. This is done in hope that users will be able to experience some of the presentations even though they are physically not present at the conference.

The closing ceremony is highlighted by the recognition of the various section chairs as well as the best contributed papers of each section. The current conference chair Lauren Haworth then hands over the baton to the next conference chair Debbie Buck who then introduced everyone to the 2011 SAS Global Forum at Las Vegas, Caesar's Palace. It was a most wonderful experience at the SAS Global Forum 2010 at Seattle. Let us look forward to the next conference at Las Vegas.

Murphy Choy, University College Dublin

New SAS e-Guide

Quick Results with PROC SQL

Using PROC SQL, can you identify:

- at least four ways to select and create variables?
- at least four ways to create macro variables?
- at least four ways to create or modify table structure?
- at least four ways to change table content?

Ready to revolutionize your approach to PROC SQL with the single most concise and productivity e-Guide available?

"A new concept SAS e-book with both referencing and direct results capabilities merged into one. Extremely useful to keep one on hand for users who needs quick results without the hassles of going through SAS documentation and Google search", Murphy Choy, University College Dublin

"These SAS e-books will also be useful for beginners to have a quick look of the options.", Sandeep Kottam, 7-year SAS user

Learn and apply multiple SAS programming options through task-based examples in one centralized location. Table of contents includes table access, retrieval, structure and content, creating macro variables, and connecting to relational databases. This e-Guide hyperlinks contents, key books, relevant webinars and podcasts and key SAS technical papers for more effective understanding and programming.

www.sascommunity.org/wiki/Quick_Results_with_Proc_SQL

Sunil Gupta, Gupta Programming

PhUSE News

PhUSE Conference 2010

The sixth PhUSE Annual Conference will be held in Berlin 17-20 October 2010 following the theme "Innovation Driven by Technology". Full details of this year's event can be found on the PhUSE website at www.phuse.eu. Early Bird Discount is available on the registration fee until 30 June, plus FREE pre-conference training is being offered to the first 50 registered delegates.

The Call for Papers website has now closed and we are delighted with the high level of quality papers, with diverse, interesting and innovative new material. The streams for this year are: Applications and Software Development; Coder's Corner; Coding Standards; Data Handling; Professional Development & Training; Posters; CDISC & Industry Standards; Regulatory; Statistics and Pharmacokinetics; Technical Solutions; Tutorials; Management and there will also be a University Day. In addition panel discussions will be held, to debate in-depth Industry Standards, Outsourcing and this year's conference theme Innovation Driven by Technology. If you are interested in participating in these panel discussions, please email heidi.curinckx@phuse.eu or if you require any help with registration please email office@phuse.eu.

We hope you can join us in Berlin.

Heidi Curinckx, Conference Chair

PhUSE 2010 Single Day Events (SDE)

There were 4 PhUSE Single Day Events (SDE) this year, in Brussels (Belgium), Basel (Switzerland), Copenhagen (Denmark) and Welwyn Garden City (UK). I was fortunate enough to present a paper on the ODS Graphics Designer at the SDEs in Denmark and the UK, which mostly focused on CDISC implementation and practice. All 4 SDEs were well attended, with excellent presentations, and Neils Both (S-Cubed) achieved a "Grand Slam" by presenting at every single one!

I'm now looking forward to 2011 to find out the theme for next year's SDEs.

Philip R Holland, Holland Numerics

In Brief

- Back issues of *VIEWS News* are available from the *VIEWS* web site, and also from the *VIEWS News* page at www.sasCommunity.org/wiki/VIEWS_News
- Andrew Ratcliffe's excellent email newsletter "NOTE:" has been converted into a blog at notecolon.info.
- More SAS hints and tips can be found on the SAS FAQ pages www.hollandnumerics.com/sasfaq and also on the Amadeus Software Tips pages at www.amadeus.co.uk/TipsList.aspx?ST=1
- There is a social networking groups for SAS users on Ning called **SAS Professionals**, originally intended for SAS users in the UK, at www.sasprofessionals.net, but currently totalling more than 2,200 members worldwide.
- Phil Holland has started a group page on Squidoo for other pages related to SAS, and would like to make it a central resource for SAS hints, tips, links and books at www.squidoo.com/groups/SAS_users
- Phil Holland has also created the SAS Contractors group on LinkedIn specifically for independent SAS consultants in the UK and Europe. Requests to join the group should be made at www.linkedin.com/groups?gid=2481512, and the associated SAS Contractor Resources page, which is open to all, can be found at www.squidoo.com/sas_contractors
- SAS users who use Twitter can now join a "twibe" at twibes.com/SAS, which filters your tweets down to those containing "SAS", "EnterpriseGuide" and "PROC".

Diary

Are you organising an event that would be of interest to the VIEWS readership? Let us know as we are interested in all non-profit making events related to SAS.

June 2010

2 SAS Data Step Programming Efficiencies: Tips & Techniques

For further details see the Sierra Information web site at www.sierrainformation.com. This is a webinar.

3 Unleashing the Power of PROC REPORT (part 1)

For further details see the Sierra Information web site at www.sierrainformation.com. This is a webinar.

8 SAS Programming Tips and Tricks for Base SAS

For further details see the Amadeus Software web site www.amadeus.co.uk/Webinars.aspx. This is a webinar.

10 From Data to Knowledge: A Journey into SAS9,

Oxfordshire

See the Amadeus Software web site www.amadeus.co.uk for further details.

15 PROC REPORT: Beyond the Basics

For further details see the Sierra Information web site at www.sierrainformation.com. This is a webinar.

15-17 SAS Professionals Convention, Marlow, UK

The annual 3-day conference organised by SAS UK. The 1st day concentrates on preparation for SAS certification examinations offered as part of this conference day. The 2nd day concentrates on technical issues and solutions, including a keynote presentation on SAS® Enterprise Guide® by Chris Hemedinger. The 3rd day concentrates on industry issues. See www.sas.com/uk/events/sasprofessionals for further details.

16 SAS 201: Advanced SAS Programming Techniques

For further details see the Sierra Information web site at www.sierrainformation.com. This is a webinar.

17 Unleashing the Power of PROC REPORT (part 2)

For further details see the Sierra Information web site at www.sierrainformation.com. This is a webinar.

22 Exchanging Data Between SAS and Microsoft Products

For further details see the Sierra Information web site at www.sierrainformation.com. This is a webinar.

25 Using the SAS 9.2 Statistical Graphics Procedures

For further details see the Amadeus Software web site www.amadeus.co.uk/Webinars.aspx. This is a webinar.

October 2010

10-12 MWSUG Conference, Milwaukee, WI, USA

The 2010 MWSUG (MidWest SAS Users Group) Conference is open to all. For more information, please see www.mwsug.org/mil2010.

17-20 PhUSE Conference, Berlin, Germany

The Pharmaceutical Users Software Exchange (PhUSE) conference is the premier programming event for the pharmaceutical industry in Europe. See www.phuse.eu for more details.

All VIEWS event information will be posted and/or emailed to registered members of VIEWS, and will include an event application form. Please send your queries about any VIEWS events to event@views-uk.org, and don't forget to look at the web site for the latest news.

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