Differentiate Yourself

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Abstract

Today's employment and business marketplace is highly competitive. As a result, it is necessary for SAS® professionals to differentiate themselves from the competition. Success depends on a number of factors, including positioning yourself with the necessary technical skills in relation to the competition. This presentation illustrates how SAS professionals can acquire a wealth of knowledge and enhance their skills by accessing valuable and free web content related to SAS. With the aid of a web browser and an Internet connection, anyone can access published PDF papers, Microsoft Word documents, Microsoft PowerPoint presentations, student notes, instructor lesson plans, hands-on exercises, webinars, audios, videos, a comprehensive technical support website maintained by SAS, and more to acquire the essential expertise that is needed to cut through all the marketplace noise and begin differentiating yourself to secure desirable opportunities with employers and clients.

Introduction

As technology continues to reach for newer and greater horizons, it is becoming increasingly more important for students, professionals, and anyone with a curiosity for knowledge to have a way to continue their quest for learning. In a summary report on employment projections, the Bureau of Labor Statistics project that *"nineteen of the 30 occupations projected to grow fastest from 2012 to 2022 will typically require some form of postsecondary technical education for entry."*

In a 2012 report by ITCareerFinder.com the organization states, *"A number of IT career paths will experience the most growth from 2012 to 2020 with pay salaries well above the national average and offer a wide range of opportunities for upward mobility."* The fastest growing IT jobs from 2012 to 2020 according to the Bureau of Labor Statistics Occupational Outlook Handbook (2012-2013) are illustrated in Figure 1, below.

Number	IT Job	Estimated Growth	Average Salary
1	Mobile Application Developer	34%	$94,000.
2	Database Administrator	33%	$82,000.
3	Software Engineer / Developer	30%	$90,000.
4	Video Game Designer	30%	$80,000.
5	Network Administrator	28%	$69,000.
6	IT Security Specialist	22%	$87,000.
7	Computer Systems Analyst	22%	$79,000.
8	Web Developer	22%	$91,000.
9	Health Information Technician	21%	$46,000.
10	Technology Manager	18%	$111,000.

Figure 1. U.S Bureau of Labor Statistics Fastest Growing IT Jobs (2012 – 2020)

The future looks outstanding for SAS users too. In early 2015, SAS Institute announced on sas.com that, *"The future looks very bright for SAS programmers, data analysts, analytic specialists, statisticians, and other SAS specialties in 2015 and beyond with demand projections expected to climb to higher levels."* In another 2015 report by CNN Money, the employment outlook for SAS specialists is very bright indeed with median pay for SAS programmers to be upward of the $90,000 range and an estimated 10-year job growth of 24.6%.

SAS Institute continues its steady growth by dominating in several "key" areas including the world of big data and data analytics. With 2015 Worldwide Revenue of $3.16 billion (U.S.) and an R&D Investment of 25% of Revenue, SAS is in an enviable

position as a top 10 software company. Having more than 14,000 employees located throughout the United States, Canada, Europe, Middle East, Africa, Asia Pacific and Latin America; and more than 80,000 business, government and university customer sites in 146 countries, SAS software is used by 91 of the top 100 companies on the 2015 Fortune Global 500 List. It has even won the coveted **"Best Place to Work"** Awards two consecutive years, (2011 – 2012), and has taken the third and fourth spots in 2013 and 2014 respectively. Employees and users everywhere should be very excited about the future.

Differentiate Yourself

Anyone looking to stand out from the crowd and/or begin your rise to the top must learn how to differentiate themselves. But how is this accomplished? Invest in yourself. Take initiative. Pursue excellence in everything you do. Look for opportunities and, more importantly, make the most of every opportunity. Understand the impact of and, more importantly, how to leverage technology. Become involved by volunteering at your in-house, local, regional, special-interest and/or international SAS users group conferences and meetings. Become dedicated to something greater than oneself. These are just a few ways to stand out from the masses – make it happen.

Start by Taking Inventory of and/or Developing Your Skills

The Free Merriam-Webster Dictionary defines skill as, **"the ability to do something that comes from training, experience, or practice."** A skill must be developed – one isn't born possessing many desirable skills. So, how does one go about determining if they already possess a useful skill? Begin by taking inventory of any skills you might already possess – simply make a list. The list might look something like the following, see below.

Inventory of Existing Skills
DATA/PROC Step Programming
Data Access
Data Transformation
Data Cleaning
Data Manipulation
ODS, Reporting and Specialized Output
Macro Programming
Statistical Analysis
Data-driven Application Development
User Interface Design
Database Design
Technical Writing

Now that you've taken inventory of your skills, assign a ranking to each skill using the following values.

Ranking of Existing Skills
0 = None
1 = Heard of it, but little or no experience
2 = Some working knowledge
3 = Proficient
4 = Expert

Once you've assessed and ranked your skill level, assign a ranking to your level of competence using the following values.

Identify Level of Competence
0 = None
1 = Out-of-date
2 = Competitive
3 = Cutting Edge

Finally, categorize your skills by functional discipline, as follows.

Categorize Skills by Functional Discipline
Requirements Analysis
Systems Analysis
Application Design
User Interface Design
Report, Table and Chart Design
Data Cleaning
SDLC
Programming
Statistical analysis
Teaching
Technical Writing
Technical Support
Debugging

How to Develop and Improve Your Skills

There are a number of ways for SAS users to develop and/or improve their skills. The following list identifies many popular methods SAS professionals have used to enhance their skills and, as a result, become more competitive.

Popular Methods of Developing and Improving Skills
1) Download, use and learn valuable techniques using the "free" SAS University Edition software
2) Access the SAS Technical Support website at support.sas.com
3) Download and use the "free" Online SAS documentation
4) Access the published "White" papers on LexJansen.com
5) Learn SAS techniques from user-written books from SAS Press
6) Author / present at in-house, local, regional, special-interest and international SAS user groups
7) Attend hands-on workshops, presentations and courses
8) Volunteer at in-house, local, regional, special-interest and international SAS user groups
9) Collaborate / Network with other SAS users
10) Learn from self-paced web-based training
11) Successfully pass one or more SAS Certification exams

To better understand what skills have the greatest impact to salaries, PayScale, Inc., a Seattle-based company, shares their list of skills, along with the percentage increase to the salaries, of SAS programmers, see below.

Skill	Percentage Increase
UNIX	▲ 19%
Linux	▲ 13%
PL/SQL	▲ 12%
Oracle	▲ 11%
Windows Operating System	▲ 10%
SQL	▲ 5%
Statistical Analysis	▲ 5%
Data Analysis	▲ 2%
Microsoft Access	▲ 2%
National Average	$78,000

Source: http://www.payscale.com/research/US/Job=SAS_Programmer/Salary

How to Differentiate Yourself

Being able to differentiate yourself from the competition is a meaningful activity that every SAS professional should consider. Although not comprehensive, the following list identifies a few popular methods that SAS professionals have shared with me to help them separate themselves from their competition.

Popular Methods of Differentiating Yourself from the Competition
1) **Earn an Advanced Degree**
2) **Attend, Volunteer and Present at in-house, local, regional, special-interest and international SAS user groups**
3) **Share Your Knowledge with Colleagues**
4) **Read, Study and Learn from the published "white" papers on LexJansen.com**
5) **Access and Learn One New Technique Each Day from the Content on support.sas.com**
6) **Become SAS Certified (Base, Advanced, Clinical Trials, Predictive Modeler, Statistical Business Analyst, BI Content Developer, Visual Business Analyst, Data Integration Developer, Data Quality Steward, Platform Administrator)**
7) **Build Social Networking Connections on LinkedIn, Blogs, etc.**

Massive Open Online Content (MOOC)

A MOOC is structured very similar to an online course. A MOOC typically is listed with a course/seminar/webinar title, abstract or description of its content, a syllabus, expected learning objectives, "live" or recorded lectures or lessons, reading assignments, hands-on assignments, and quizzes. Students tune in to the "live" or recorded lectures, perform the required reading and hands-on assignments, and take the quizzes, adhering to the required scheduled timeline. At the completion of a MOOC, students may even be able to receive a grade from the MOOC leader or instructor, just as if they had enrolled in a traditional course.

Many forward-thinking organizations, universities and degree-granting institutions use the advances that technology provides to help make some of their courses available to the masses around the world. The MOOC format offers an alternative to mainstream courses, degrees, and certificate programs that were once only available through brick-and-mortar classrooms where attendees were forced to commute to supported locations or become a resident on college campuses.

A Review of "Free" MOOC Resources

As the age of massive open online content (and courses) is upon us, the world of the SAS user is also being positively impacted with many "free" MOOC resources. Numerous MOOC courses and content are now available to help support SAS users in their quest to effectively improve their analytical, programming, statistical, and reporting skills. For content and courses that may contain a sizeable amount of material, some MOOC offerings may involve splitting larger and more involved topics into smaller, more digestible, pieces, a process known as specializing. So, where can SAS users find "free" MOOC resources? The following list of "free" MOOC resources is available to SAS users everywhere.

"Free" MOOC Resources for SAS Users
1) **SAS University Edition software**
2) **SAS Technical Support website at support.sas.com**
3) **Online SAS Documentation in PDF and HTML format on support.sas.com**
4) **Published "White" Papers on LexJansen.com**
5) **SAS Press and SAS Talks Webinars**
6) **SAS YouTube Channel Videos**
7) **In-house and Local SAS Users Group meetings**

SAS® University Edition Software

The SAS® University Edition is "free" to anyone. It's under the SAS Analytics U umbrella and includes e-Learning modules to help you learn the SAS software. Available for PC, Mac, or Linux Workstations, the SAS University Edition includes Base SAS®, SAS/STAT®, SAS/IML®, SAS/ACCESS® for Windows, and SAS Studio. It works through Virtualization Software in standalone mode and your Browser to access to SAS software.

Base SAS Features

The Base SAS software contains a built in DATA step programming language, the ability to access a wide-range of data sources, comprehensive set of functions to handle data manipulation, an assortment of "canned" and ready-to-use procedures, a comprehensive SQL language, reporting and customization feature for reports and results using Output Delivery System (ODS), data display informats and output formats, comprehensive data visualization features known as ODS Statistical Graphics, data management capabilities, and much more.

SAS/STAT® Features

The SAS/STAT software supports the application of the latest statistical techniques. It supports the following statistical routines: Analysis of Variance, Bayesian Analysis, Categorical Data Analysis, Cluster Analysis, Mixed Models, Multivariate Analysis, Nonparametric Analysis, Regression Analysis, Survey Sampling and Analysis, Statistical Graphics, and much more.

SAS/IML® Features

The SAS/IML software is an interactive matrix programming language and supports the ability to conduct Exploratory Analysis, the integration with the R programming language, dynamically linked graphics, and much more.

SAS/ACCESS® Features
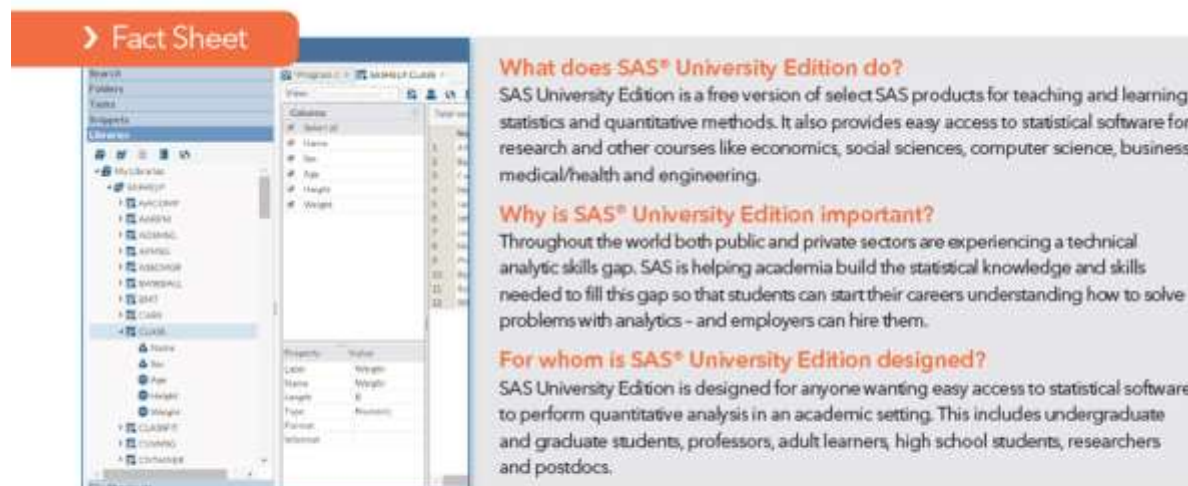
The SAS/ACCESS software supports the ability to read, write, and update data sources; provides a flexible query language; supports the access to a variety of data sources including text files, dat files, CSV files, Excel spreadsheets, Microsoft SQL Server, and ODBC; and much more.

SAS Studio

The SAS Studio software serves as the user interface; supports Web applications; the access to data files, libraries and programs; the ability to recover files; dynamically link graphics; and much more.

SAS University Edition Fact Sheet

The SAS University Edition software Fact Sheet can be access at sas.com/universityedition, see Figure 1, below.

Figure 1. Snapshot from SAS University Edition Fact Sheet at sas.com/universityedition

SAS' "World Class" Technical Support Website

SAS' technical support website, support.sas.com, contains a wealth of "free" SAS technical support content. Users are provided with access to timely information pertaining to: Admin, Programmer, Statistician and User content; the "best" in class comprehensive technical support content; training and books; what's happenings including User Group Information; access to "free" webinars and podcasts; access to code samples; access to SAS comprehensive documentation; and much more. The support.sas.com user interface is illustrated in Figure 2, below.
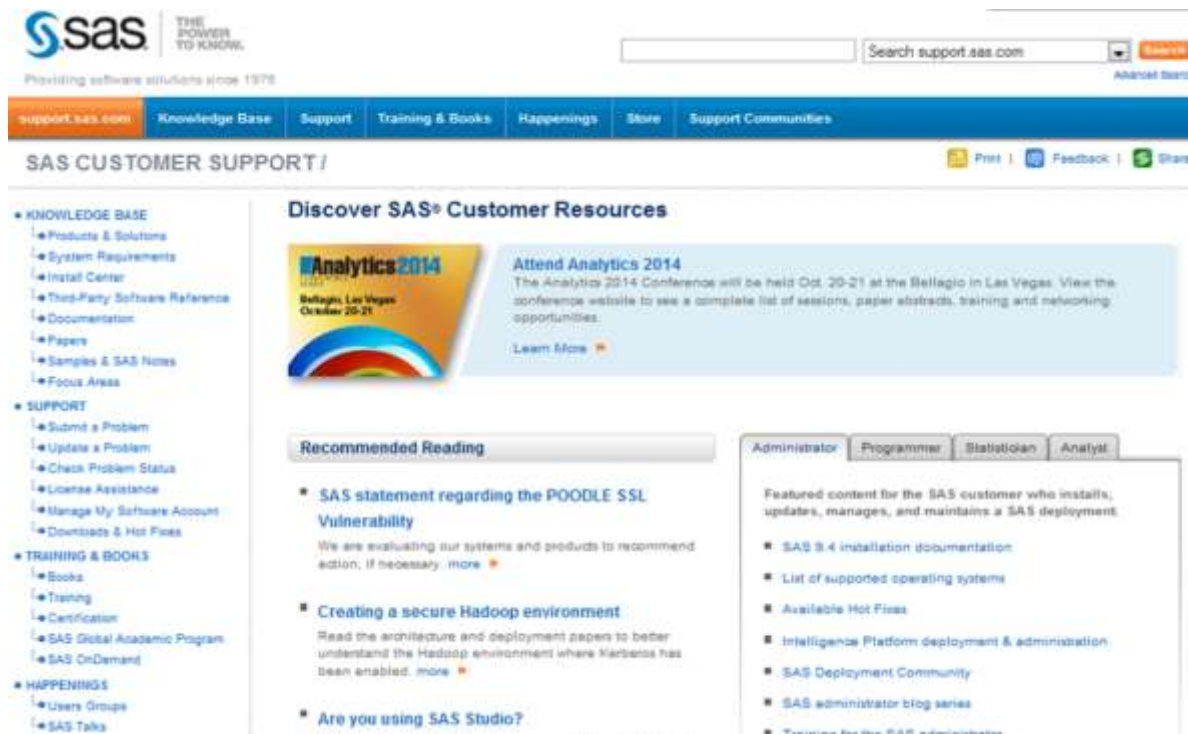
Figure 2. support.sas.com User Interface

Knowledge Base – SAS Products and Solutions

Users can easily explore the Knowledge Base of SAS Products and Solutions, System Requirements, Install Center, Third-Party Software Reference, Documentation, Papers, Samples & SAS Notes, and Focus Areas by accessing http://support.sas.com/software/, illustrated in Figure 3, below.

Figure 3. Knowledge Base – SAS Products and Solutions

Knowledge Base – Documentation

Users have the ability to access a comprehensive set of SAS product documentation in either HTML or PDF format and can be accessed at http://support.sas.com/documentation/index.html, as shown in Figure 4, below.

Figure 4. Knowledge Base – SAS Product Documentation

Published SAS Proceedings and "White" Papers

Users are provided access to thousands of "free" published SAS "white" papers all in the form of PDF documents. Provided with a built-in Google® search applet, users are able to search for content from 1976 to the present from SGF / SUGI, SUEGI, the various Regional conferences, PharmaSUG / PharmaSUG China, PhUSE, CDISC Forum, and other venues. Papers can be accessed using the https://www.lexjansen.com/ user interface, as shown in Figure 5, below.
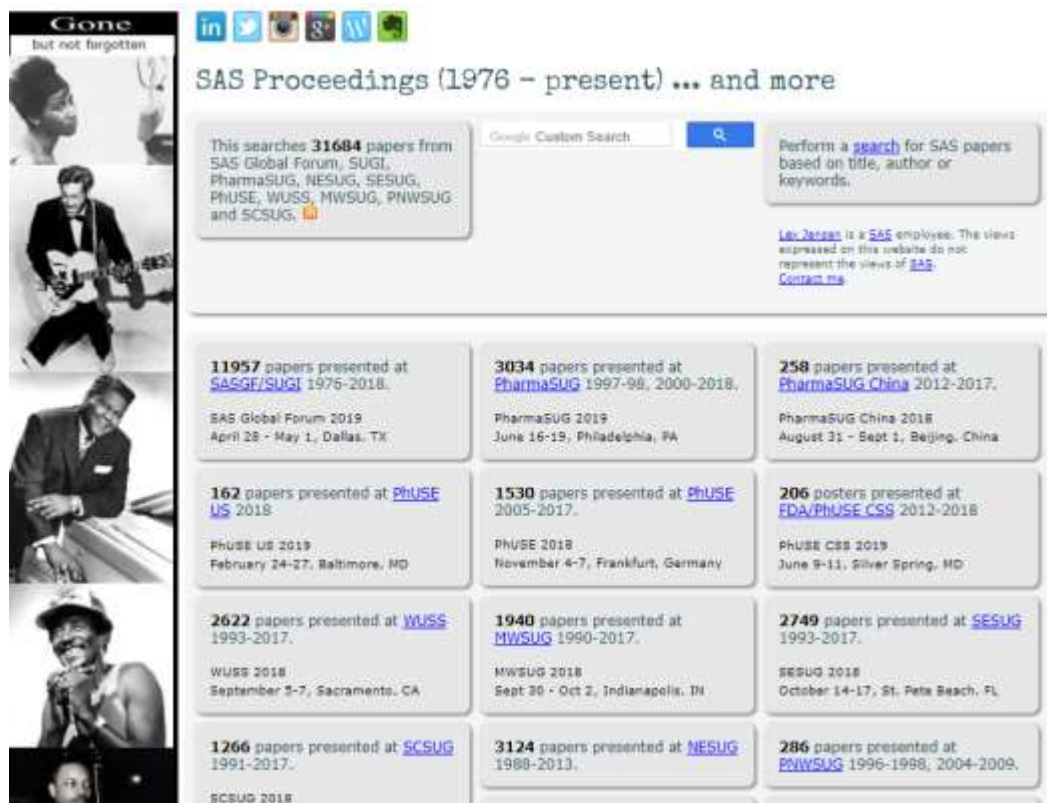
Figure 5. Published SAS Proceedings on www.lexjansen.com

LexJansen.com – Search Feature

LexJansen.com provides a built-in Google search applet that can be used by users to find papers of interest, as shown in Figure 6, below.
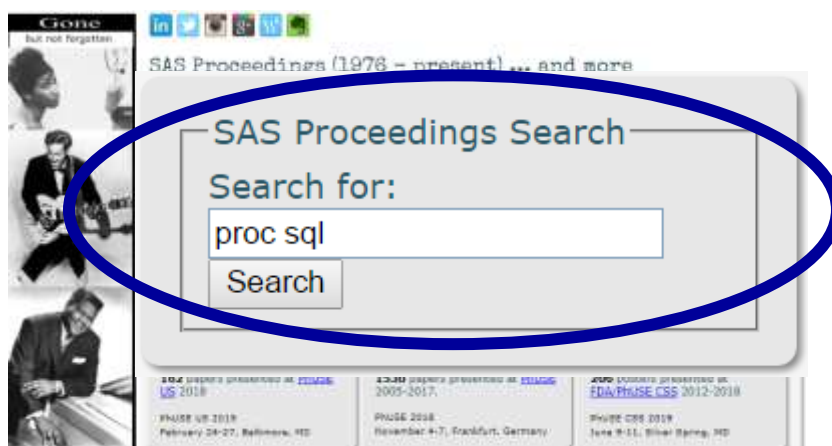
Figure 6. Built-in Google Search Applet in LexJansen.com

LexJansen.com – Search Results

LexJansen.com's search results display the most relevant results first, based on the search keyword or phrase entered in the search box, as illustrated in Figure 7, below.

Figure 7. LexJansen.com Search Results

Viewing a Paper from LexJansen.com

Any paper of interest that is found with the built-in Google search applet and/or displayed in the search results can be viewed, saved, or printed as needed. A "sample" paper from LexJansen.com is shown in Figure 8, below.

Figure 8. A "Sample" Paper from LexJansen.com

SAS Press and SAS Talks Webinars

SAS Press and SAS Talks provide users with a number of effective presentations developed by SAS experts, instructors, authors, customers and students. Users also have for their viewing pleasure a SAS YouTube Channel with thousands of videos in a variety of unique categories: Analytics, Featured SAS Customer Stories, SAS Customer Stories, SAS Visual Analytics, SAS Data Management, SAS High-Performance Analytics, Popular Uploads, and Created Playlists. I always enjoy sharing a cost-effective method of upgrading staff member skills by scheduling monthly lunch-time pizza webinars where staff member view, eat and discuss the merits associated with the techniques they've learned from the webinar. This represents a winning scenario for everyone involved.

SAS Press Webinar Series

SAS Press provides users with a series of "free" informative Webinars that were developed and presented by authors. These archived webinars can be accessed at, http://support.sas.com/publishing/bbu/webinar.html, as illustrated in Figure 9, below.

Figure 9. SAS Press Webinar Series

SAS Talks Webinar Series

SAS Talks provides users with a series of "free" informative Webinars that were developed and presented by SAS experts, instructors, authors, customers, and students. These monthly webinars are archived for later viewing by users and can be accessed at, http://support.sas.com/community/events/sastalks/#s1=2, as illustrated in Figure 10, below.

Figure 10. SAS Talks Webinar Series

Archived SAS Talks Webinars

SAS Talks also provides users with a number of archived webinars. These webinars are archived monthly and available on-demand at, http://support.sas.com/community/events/sastalks/ondemand.html, as shown in Figure 11, below.

Figure 11. Archived SAS Talks Webinars

Getting Started with SAS® Graph Template Language
SAS R & D Director, Sanjay Matange, will demonstrate different ways to get, create or customize graphs in this live webinar.

SAS® 9.4: What's New for SAS® Administrators
SAS Principal Product Manager Amy Peters highlights what's new in SAS 9.4!

SAS® Visual Analytics for Higher Education
SAS Visual Analytics case study presented by Marc Vaglio-Laurin

How to Integrate SAS® and Teradata
Explore the nuts and bolts of integrating SAS and Teradata.

Getting Started with SAS® Graph Template Language
ways to get, create or customize graphs.

New Features: SAS® Activity-Based Management
Learn how the product morphs into SAS Cost and Profitability Management later in 2013.

Building Credit Scorecards Using SAS® Enterprise Miner™
Learn how to use Credit Scoring for SAS Enterprise Miner.

What's Hot, What's Not: Skills for SAS® Professionals
Examine the extensive array of procedures, programming tools and techniques honed by current and prior generations of users.

Getting Started with SAS®
Have no fear – we're bringing SAS experts to the rescue!

Getting Started with SAS® and Hadoop
In this live webinar, SAS technical expert Jeff Bailey covers the basics of SAS and Hadoop.

Introduction to Custom Tasks in SAS® Enterprise Guide®
In this session, you'll learn what custom tasks are available and how you can download and install them. You'll also see a few of the tasks in action as part of a live demo.

Live at SAS® Global Forum: Get the Most from Your SAS Experience
Taped live during SAS Global Forum 2013, this discussion outlines a number of informative resources to help users of all levels.

Key Capabilities of SAS® Grid Computing
This session shows you how to use various SAS applications running in a SAS Grid Computing environment.

SAS® Grid Manager: Meet Platform Computing
Explore the SAS Alliance with a special focus on Platform Computing's partnership on the development of SAS Grid Manager.

Getting Started with SAS® Enterprise Guide®
In this live webinar, technical experts from the SAS Customer Loyalty team will introduce you to SAS Enterprise Guide.

Getting Started with SAS® Hash Objects
If hash objects confuse you, or if you're wondering whether learning about them is worthwhile, join us for this webinar.

New Features for SAS® Text Miner
Hear details on the latest SAS Text Miner 12.1 product enhancements.

Best Practices for Configuring Your IO Subsystem for SAS®9
Best practices for configuring your IO subsystem for SAS®9

Figure 11. Archived SAS Talks Webinars (continued)

New Features for SAS® Enterprise BI Server
SAS® SAS Product Manager Rick Styll reviews the new features and functions available in SAS Enterprise BI Server and SAS BI.

Customer Segmentation Made Simple
Join author and SAS® expert Randy Collica as he explains how to use SAS® Enterprise Miner™ and the most commonly available techniques for customer relationship management (CRM).

Planned Installation? No Problem!
In this session, our presenters will break down the deployment process for SAS 9.3, direct you to critical documentation and help you understand the steps necessary to meet (or even beat) your installation goals.

Project Organization Proposal and Project Leadership Plan
In this session, you'll discover an easy-to-use Project Organization Proposal (POP) that can be implemented without adding additional resources to the MIS or IT divisions.

Time Series Data Mining with SAS® Enterprise Miner™
Udo Sglavo from SAS R&D examines the benefit of considering the time dimension in SAS Enterprise Miner projects and how users will benefit from time series similarity analysis.

An ODS Menu for All Appetites and Applications
Chevell Parker from SAS Technical Support reveals how to harness the power of various ODS destinations to generate memorable applications and reports.

Consider an Analytical Center of Excellence (and Other Ways to Create More Analytic Bandwidth)
Anne Milley, Director of Analytic Strategy at JMP.

Macros Made Easy (and More Efficient) with SAS® Enterprise Guide® 4.2 Prompts
Kenneth Sucher, SAS Certified Instructor.

Web Development with SAS® by Example
SAS Press author Frederick Pratter will introduce you to some of the products and features available for creating Web content using SAS.

Tips and Tricks for Finding SAS® Information
Get tips and tricks to help you be more productive with your SAS software.

New Goodies for the SAS® Programmer in SAS® Enterprise Guide® 4.3
Chris Hemedinger, Senior Software Manager in SAS R&D, explores tools that help SAS programmers of all skill levels to create and maintain SAS programs with greater confidence and efficiency.

SAS Web Report Studio Performance Improvement
SAS Technical Architect Angela Hall will explain how to implement performance-improving mechanisms on your SAS system using SQL pass-through functionality

That's Not What I Meant: Adventures in Defining New Variables
Statistics professor John Bailer will explore ways to confirm that you have correctly constructed or recoded variables, illustrating surprises that might arise when SAS® does what you said instead of what you meant.

Feeding Output from PROC SUMMARY into a SAS®9 OLAP Cube
SAS Regional Education Manager and Instructor Michelle Buchecker will teach you how to take your existing data sets and turn them into SAS®9 OLAP cubes.

PROC REPORT Basics: Getting Started with the Primary Statements
SAS® Certified Advanced Professional Art Carpenter will teach you how to use PROC REPORT to summarize and display your data more effectively.

Visualization of Data and Models
JMP's chief architect John Sall teaches you how to get meaningful visual analyses to answer your business questions.

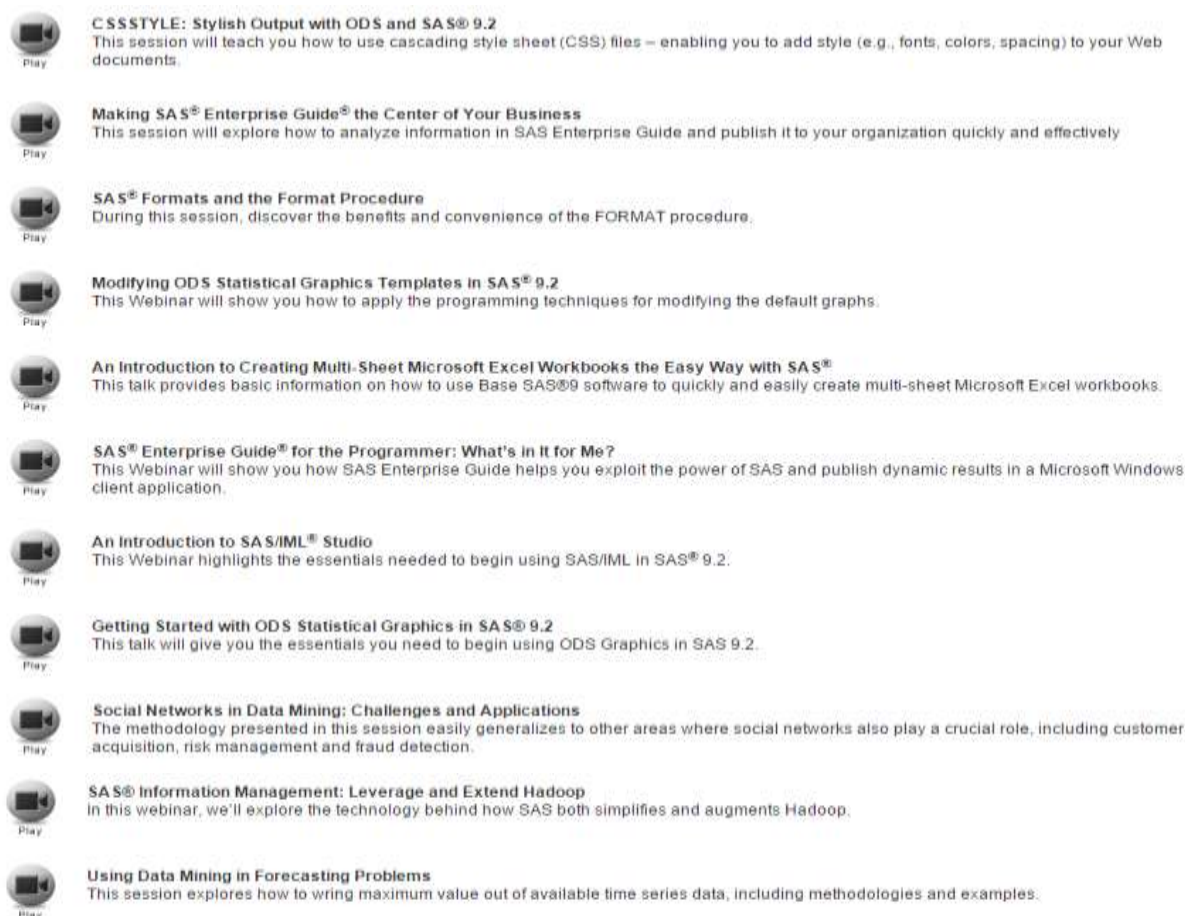**Figure 11. Archived SAS Talks Webinars (continued)**

CSSSTYLE: Stylish Output with ODS and SAS® 9.2
This session will teach you how to use cascading style sheet (CSS) files – enabling you to add style (e.g., fonts, colors, spacing) to your Web documents.

Making SAS® Enterprise Guide® the Center of Your Business
This session will explore how to analyze information in SAS Enterprise Guide and publish it to your organization quickly and effectively

SAS® Formats and the Format Procedure
During this session, discover the benefits and convenience of the FORMAT procedure.

Modifying ODS Statistical Graphics Templates in SAS® 9.2
This Webinar will show you how to apply the programming techniques for modifying the default graphs.

An Introduction to Creating Multi-Sheet Microsoft Excel Workbooks the Easy Way with SAS®
This talk provides basic information on how to use Base SAS®9 software to quickly and easily create multi-sheet Microsoft Excel workbooks.

SAS® Enterprise Guide® for the Programmer: What's in It for Me?
This Webinar will show you how SAS Enterprise Guide helps you exploit the power of SAS and publish dynamic results in a Microsoft Windows client application.

An Introduction to SAS/IML® Studio
This Webinar highlights the essentials needed to begin using SAS/IML in SAS® 9.2.

Getting Started with ODS Statistical Graphics in SAS® 9.2
This talk will give you the essentials you need to begin using ODS Graphics in SAS 9.2.

Social Networks in Data Mining: Challenges and Applications
The methodology presented in this session easily generalizes to other areas where social networks also play a crucial role, including customer acquisition, risk management and fraud detection.

SAS® Information Management: Leverage and Extend Hadoop
In this webinar, we'll explore the technology behind how SAS both simplifies and augments Hadoop.

Using Data Mining in Forecasting Problems
This session explores how to wring maximum value out of available time series data, including methodologies and examples.

Figure 11. Archived SAS Talks Webinars (continued)

SAS YouTube Channel Videos

The SAS YouTube Channel Videos are available to all users and can be accessed at, http://www.youtube.com/. Available video channels include: Analytics 2014, Featured SAS Customer Stories, SAS Customer Stories, SAS Visual Analytics, SAS Customer Intelligence, SAS Data Management, SAS High-Performance Analytics, Popular Uploads, and Created Playlists. The SAS YouTube Channel also provides access to various featured SAS channels, as shown in Figure 12, below.

Figure 12. Featured SAS Channels

The SAS YouTube Channel supports a number of topics, as shown in Figure 13, below.

Figure 13. SAS Software YouTube Channel Topics

Figure 13. SAS Software YouTube Channel Topics (continued)

Figure 13. SAS Software YouTube Channel Topics (continued)

Conclusion

As technology continues to expand to newer and greater horizons, it is essential that students, professionals, and anyone with a curiosity for knowledge have a way to differentiate themselves from the crowd. The savvy SAS user accomplishes this by accessing the readily available MOOCs and videos with a computer (workstation, laptop or "smart" device), an Internet connection and a web browser, to learn techniques, tips, code examples, and other approaches from the comfort of their living room, bedroom, dorm, office, beach house, or countless other places in 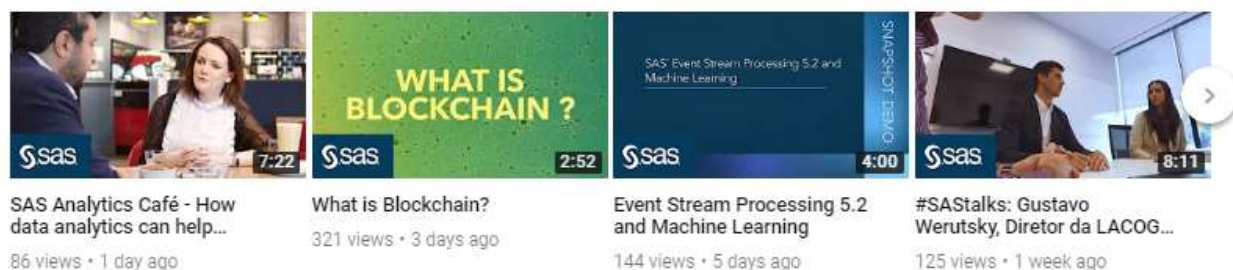the world; downloading and using the "free" SAS University Edition software to learn data access, manipulation, programming, statistical, and reporting techniques; accessing a wealth of published conference "white" papers using lexjansen.com; accessing technical content on support.sas.com, and SAS Channel YouTube videos.

References

Bureau of Labor Statistics Employment Projections, http://www.bls.gov/news.release/pdf/ecopro.pdf, accessed June 2, 2016.

BLS Overview of Projections to 2024, http://www.bls.gov/opub/mlr/2015/article/overview-of-projections-to-2024.htm#top, accessed June 2, 2016.

IT Career Paths, http://www.itcareerfinder.com/it-careers.html, accessed June 2, 2016.

Lafler, Kirk Paul (2017), *"Differentiate Yourself,"* Proceedings of the 2017 South Central SAS Users Group (SCSUG) Educational Forum and Conference.

Lafler, Kirk Paul (2017), *"A Review of Free Massive Open Online Content (MOOC) for SAS Learners,"* Proceedings of the 2017 Western Users of SAS Software (WUSS) Conference and the Proceedings of the 2017 PharmaSUG Conference.

Lafler, Kirk Paul (2016), *"A Review of Free Massive Open Online Content (MOOC) for SAS Learners,"* Proceedings of the 2016 PharmaSUG Conference.

Lafler, Kirk Paul (2016), *"Differentiate Yourself,"* Proceedings of the 2016 South Central SAS Users Group (SCSUG) Educational Forum and Conference.

Lafler, Kirk Paul (2015), *"Differentiate Yourself,"* Proceedings of the 2015 South East SAS Users Group (SESUG) Conference; California State University East Bay, Statistics Club – 2015; and San Diego State University, Statistics and SAS Club – 2015.

Lafler, Kirk Paul (2015), *"A Review of Free Massive Open Online Content (MOOC) for SAS Learners,"* Michigan SAS Users Group (MSUG) One-day Conference; Proceedings of the 2015 SAS Global Forum (SGF) Conference.

Lafler, Kirk Paul (2015), *"What's Hot, What's Not – Skills for SAS Professionals,"* 2015 Ohio SAS Users Group (OhioSUG) One-day Conference; Proceedings of the 2015 Pharmaceutical SAS Users Group (PharmaSUG) Conference.

Lafler, Kirk Paul (2014), *"A Review of Free Massive Open Online Content (MOOC) for SAS Learners,"* Proceedings of the South Central SAS Users Group (SCSUG) Educational Forum and Conference – 2014.

Lafler, Kirk Paul and Charles Edwin Shipp (2014), *"What's Hot, What's Not – Skills for SAS Professionals,"* Proceedings of the South Central SAS Users Group (SCSUG) Conference – 2014.

The 25 Best Jobs for Millennials, http://www.nola.com/business/index.ssf/2016/05/25_best_jobs_for_millennials.html#0, accessed June 2, 2016.

Acknowledgments

Trademark Citations

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Kirk Paul Lafler is an entrepreneur, consultant and founder at Software Intelligence Corporation, and has been using SAS since 1979. Kirk is a SAS application developer, programmer, certified professional, provider of SAS consulting and application development services, mentor, advisor and adjunct professor at University of California San Diego Extension, emeritus sasCommunity.org Advisory Board member, and educator to SAS users around the world. As the author of six books including Google® Search Complete (Odyssey Press. 2014) and PROC SQL: Beyond the Basics Using SAS, Second Edition (SAS Press. 2013); Kirk has written hundreds of papers and articles; served as an Invited speaker, trainer, keynote and section leader at SAS user group conferences and meetings worldwide; and is the recipient of 25 "Best" contributed paper, hands-on workshop (HOW), and poster awards.

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