Efficient Way to Learn SAS® with Virtually No Cost

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ABSTRACT

Often people ask how, "How can I learn SAS?" This paper is intended to help answer this question by providing an extensive list of web resources that I accumulated while I was unemployed and pursuing additional SAS training. I realize that it is not enough to just read about SAS programming. Experience with SAS software is necessary for a clear understanding of the material presented, especially the intermediate and advanced material. It is essential to have access to SAS software for practice and practical experience. The SAS Learning Edition is a great resource for this purpose and it is affordable. Information on the SAS Learning Edition can be found at http://support.sas.com/rnd/le/index.html. I hope that this list will be useful to all SAS users, both new users and those who are continuing their education.

INTRODUCTION

SAS training can be accomplished in many ways. Taking courses at SAS Institute or other reputable institutions is effective, but costly. Some of us cannot afford this type of training and are not affiliated with companies willing to cover the costs. In this presentation I will focus on how to learn SAS Software cheaply or for free by visiting numerous Web sites and choosing the sites best suited to your needs.

Some Internet sites are designed for self training and they charge a small fee. Other sites provide content that is free. Using SAS or the SAS Learning Edition is the best strategy for really learning and getting some practical experience. It is easy to copy code from these web sites and run it in SAS so that you gain a better understanding.

The web sites below are divided into several sections, but they concentrate on learning SAS Base Software. I hope you will find this list of sites useful, and that it will save you some time. This paper is available at <u>http://rtpnet.org/~rtsug/articles.html</u>. The easiest way to access these sites would be to download the paper so you do not have to type the addresses.

SITES FOR LEARNING SA	
Tutorial for SAS 8.2, the	http://www.personal.rdg.ac.uk/~snqcolin/SAS82tutorial.pdf
University of Reading.	
Examples from SAS	http://www.geocities.com/statbookstore/sas/sasex/sasex.html
Programming by Example	
By Cody and Pass	
Efficient way to learn	http://www.stat.psu.edu/%7Ejianchu/STAT480.htm#Lecture%20Notes
basics of SAS Base.	http://www.stat.psu.edu/%7Ejianchu/STAT480.htm#Lecture%20Notes
Penn State University	
Data Management.	http://www.wvu.edu/~support/training/classmat/sas/datamgt.pdf
West Virginia University	
SAS Intermediate course.	http://www.wvu.edu/~support/training/classmat/sas/sas2.pdf
West Virginia University	
SAS in Research Data	http://www.rhoworld.com/index_services_biostats.htm
Management	
Intro to SAS Data Step.	http://hsrd.durham.med.va.gov/Biostat/training/SAS%20presentation%20v10.pdf
Inst. for Clinical and	
Epidemiologic Research	
Intro to SAS Procedures	http://hsrd.durham.med.va.gov/Biostat/training/presentation%20II%20v10.pdf
Several SAS courses in	http://support.cit.nih.gov/statsoft/training/classrm/courstmp.htm
PDF format	
NIH, Maryland	
Advanced SAS Courses	http://ifasstat.ufl.edu/sta4702/pdf/SASIntro.pdf
and Tips	
Department of Medical	http://www.pauldickman.com/teaching/sas/index.html
Epidemiology and	http://www.pauldickman.com/teaching/sas/sas_tips_cleaning8.pdf
Biostatistics	
Karolinska Institute	
Comprehensive SAS	http://www.firstobs.com
Sites Including Tutorial	
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SITES FOR LEARNING SAS SOFTWARE

Getting Familiar With SAS http://www.cas.ucia.adu/u-imna/oin/Lecture_strain_ore_biper_page.pdf Duta Sats by Mike Hardin		
by Mike Hardin Univ. of Alabama http://www.ats.ucla.edu/stat/sas/modules/default.htm http://www.ats.ucla.edu/stat/sas/modules/default.htm http://www.ats.ucla.edu/stat/sas/modules/default.htm http://www.dats.ucla.edu/stat/sas/modules/default.htm http://www.dats.edu/sas/modules/default.htm http://www.dats.edu/sas/modules/dats.edu/sas/modules/dats.edu/sas/modules/dats.edu/sas/modules/dats.edu/sas.edu/sas/modules/dats.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/sass.edu/sas.edu/sas.edu/sas.edu/sas.edu/sas.edu/s	Getting Familiar with SAS	http://www.cba.ua.edu/~mhardin/Lecture 3 and 6 6per page.pdf
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Sample SAS programs,	http://depts.washington.edu/sasclass/index.html
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Virginia Tech	http://mebux.vt.edu/cc/sas/en/omsg.ntm
SAS Code examples,	http://www.umich.edu/~cscar/software/sas.html
Tutorials, SAS topics.	
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University of Idaho	
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Univ. of Illinois at Chicago	
SAS Statistical Links.	http://core.ecu.edu/psyc/wuenschk/sas.htm
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Introduction to SAS.	http://www.unt.edu/rss/class/sas1/
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DATA Step Functions	http://www.geocities.com/statbookstore/sas/saslang/function.html
Applied Statistics with	http://www.stanford.edu/class/stats212/lectures/
SAS lectures.	mp.// www.stanord.odu/old30/stato2 12/100tur00/
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An Intro. to Exporting SAS/Graph Output to Microsoft Office	http://ftp.sas.com/techsup/download/technote/ts674/ts674.html
Quick description of SAS Graphing Technique.	http://www.unc.edu/atn/statistical/classes/handouts/sas_graphing.pdf
Getting started with SAS for Windows. University of Arkansas	http://www.uark.edu/compserv/training/shortcrs/handouts/sas_handout.ppt
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Technical support resources	http://support.sas.com/techsup/intro.html
SAS-L Archives University of Georgia	http://www.listserv.uga.edu/archives/sas-l.html
SAS Customer Support	http://support.sas.com/
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SAS Online Resources	http://www.sas.com/misc/tutor/resources.html
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SAS® Online	http://nas.cl.uh.edu/spears/sas/guide/guide.html
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Training for SAS	mtp://www.stankt.com/training/index.ntm
SAS Online Training	http://www.e-learningcenter.com/sas.htm
Courses	ntp://www.e-leaningcenter.com/sas.ntm
Web based SAS training	http://www.brainbench.com/xml/bb/common/testcenter/subcatresults.xml?cat1=9&cat2=26
SAS Tutorial Online	http://computer-training.8m.com/sas.html
Set of 9 SAS courses	http://www.mindleaders.com/products/tgen.html
SAS online courses	http://www.trainingcenter.com/
SAS online training	http://www.tutorgig.com/showurls.jsp?group=4189&index=0
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Audio-visual SAS online	http://distancelearning.ksi.edu/demo/ma377/lecture.htm
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missing values of a	
variable.	
News, hints, and tips	http://www.views-uk.demon.co.uk/index.htm
Phil Mason's Site	http://homepage.ntlworld.com/philipmason/
TIPS from various sources	http://members.tripod.com/~schick/sas_tips.html
Dating tips from SAS	http://www.dc-sug.org/dcmar97.pdf
by David Hopkins	
SAS Tips	http://www.depts.washington.edu/sasclass/index.html
SAS bits and bytes	http://support.sas.com/sassamples/bitsandbytes/index.html
TIPS	http://support.sas.com/sassamples/quicktips/index.html
Various tips	http://www.sys-seminar.com/SASNewsletter.htm
SAS code, tips, jobs and	http://www.sconsig.com
much more Tips, tricks and more from	
	http://tips.pwcons.com/
PW Consulting Tips and more from	http://homepage.mac.com/magdelina/.Public/utl.html
CompuCraft	http://homepage.mac.com/magdeima/.Fubilc/dit.html
CompuCian	
The best samples from	http://support.sas.com/publishing/pdf/
various SAS BBUs	
Various topics from York	http://www.psych.yorku.ca/lab/psy3030/programs.htm
University, ON, Canada	
Tips & Techniques by Phil	http://homepage.ntlworld.com/philipmason/
Mason	
Hints and Tips in the RTSL	http://www.ratcliffe.co.uk/note_colon/index.htm
e-Newsletter	
SAS Tips	http://seamonkey.ed.asu.edu/~alex/computer/sas/sas.html
New SAS User Group	http://www.techieindex.com/sas/faq/faq_home.asp?type=GENERAL
Tips from Hardy Consulting Services, Canada	http://www.schardy.qc.ca/en/trucs.html
Sonwood Conodo	

WHERE TO LOOK FOR JOBS

http://www.jobvertise.com/
http://www.centerwatch.com/careers/jwads.html
http://www.philasug.org/
http://www.dice.com
http://www.medzilla.com
http://www.hirehealth.com/
http://www.monster.com
http://chronicle.com/jobs/
http://airweb.org/jobs.html
http://www.statisticsjobs.com/events.htm
http://www.sas-jobs.com/list.asp

RECOMMENDED BOOKS AND MAGAZINES

Magazines	http://support.sas.com/documentation/periodicals/index.html
Books by users	http://support.sas.com/publishing/bbu/authorline_archive.html
Geometry Online Learning Center	http://www.geometry.net/computer_bk/unix.html
Preparation for the SAS Certification Exams	http://sas.certifiedprogrammer.com/
The SAS Certified Professional Program	http://www.certmag.com/issues/dec00/dept_specialtycert.cfm
Book selections by InterVelopers	http://www.wargaming.net/Programming/75/Statistical Computing index.htm
Books on the Web	http://books.ontheweb.com/shop/sas.html
SAS Magazines and Newsletter	http://support.sas.com/documentation/periodicals/
Global Statements by Rick Aster	http://www.globalstatements.com
SAS Users' Bookstore	http://www.sasusers.com/bookstore/default.htm
A! Apress bookstore	http://www.apress.com/book/bookDisplay.html?bID=126
SAS Com Magazine	http://www.sas.com/news/sascom/
SAS Publishing	http://support.sas.com/publishing/index.html

COMPUTER DICTIONARY FOR SAS PROGRAMMERS

Rick Aster	http://www.globalstatements.com/d/index.html

CONCLUSION

There are many different ways to learn to program with SAS software. What is best for you may depend on your budget, your training needs and the way you prefer to learn. I have chosen to take full advantage of the SAS programming information on the web. Many people have spent a great deal of time creating sites that explain SAS Software and provide coding examples. I am convinced that is possible to learn the basics about SAS software this way. It is not necessary to spend a lot of money if you are persistent in searching the web and practicing with the SAS software. After almost four years of studying and working with SAS Software, I am able to compare various methods of learning SAS, and I recommend this method, especially for beginners.

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