



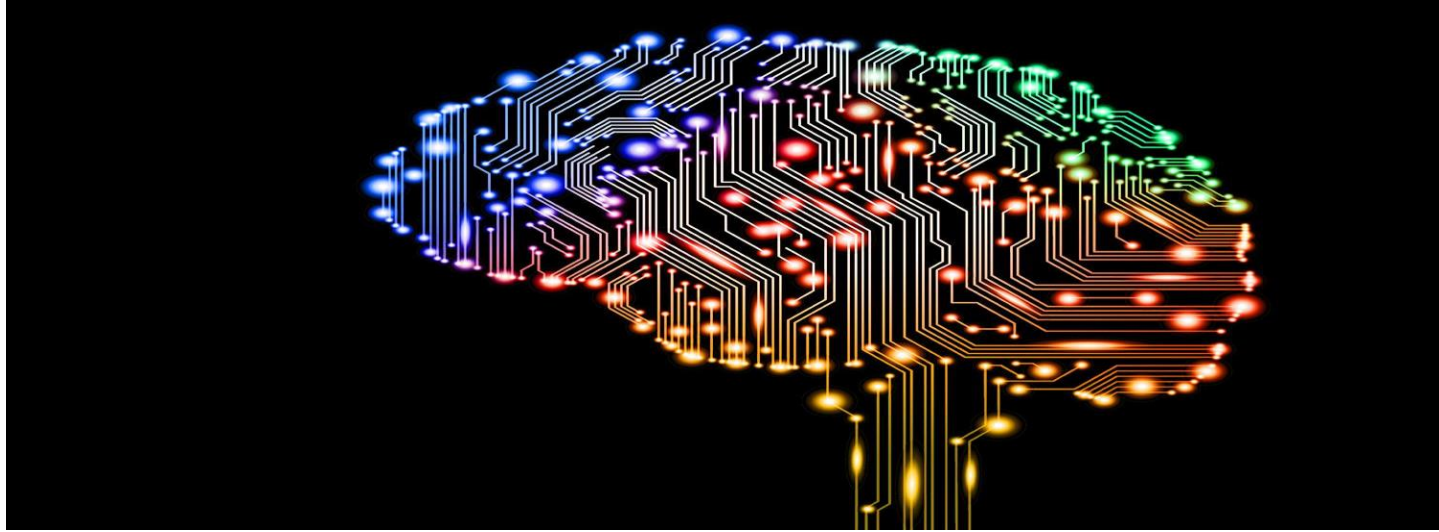
*“The important thing is not to stop questioning. Curiosity has its own reason for existing.” - Albert Einstein*

# ZIFO

## RnD SOLUTIONS

Drug Discovery | Clinical Development | Manufacturing Labs | Genomics  
R&D IT | Clinical Biometrics | Compliance Solutions | Scientific Process Management

# SAS Intellisense- Making sense of SAS's Intelligence



*Deepak Ananthan  
Sachin Bharadia*

# SAS is a Limitless ocean...

*It would take the entire duration of this presentation just to list each SAS keyword and its use. SAS produces entire libraries of documentation just to list the functions of all of these. It is easy to get lost in this ocean.*

## Special Characters

**\_ALL\_** argument  
FILENAME statement 96  
LIBNAME statement 240  
**\_ALL\_** CLEAR option  
CATNAME statement 41  
**\_ALL\_LIST** option  
CATNAME statement 41  
**\_BLANKPAGE\_** option, PUT statement 296  
**\_CMD\_** 389  
**\_CMD\_** automatic variable 395  
**\_CMD\_** SAS variable, WINDOW statement 395  
**\_ERROR\_** variable 74  
**\_FILE\_** 76  
**\_FILE\_** variable  
updating 88  
**\_FILE\_** option  
FILE statement 76  
**\_INFILE\_** automatic variable 171  
**\_INFILE\_** option  
PUT statement 296  
**\_INFILE\_** option  
INFILE statement 171, 194  
**\_JRC\_** automatic variable  
MODIFY statement and 277  
**\_MSG\_** 389, 395  
**\_MSG\_** automatic variable 395  
**\_MSG\_** SAS variable, WINDOW statement 395  
**\_NULL\_** argument  
DATA statement 48  
**\_PAC\_** option, PUT statement 296  
; (semicolon), in data lines 41, 58  
; (colon) format modifier, definition 224  
/DEBUG argument  
DATA statement 48  
/NESTING argument  
DATA statement 48

**/STACK** argument  
DATA statement 48  
~ (tilde) format modifier, definition 224  
@ (at sign) line-hold specifier, PUT statement 305  
@@ (at signs) line-hold specifier, PUT statement 305  
& (ampersand) format modifier 221  
& (ampersand) format modifier, definition 224  
%DISPLAY macro  
compared to WINDOW statement 395  
%INCLUDE statement 164  
accessing lowered autocall macro members 151  
arguments 164  
catalog entries with 102  
comparisons 169  
data sources for 168  
details 168  
examples 169  
including external files 169  
including keyboard input 170  
including previously submitted lines 170  
processing large amounts of data 351  
rules for using 168  
MSG\_ automatic variable 395  
with several entries in single catalog 170  
%LIST statement 260  
%RUN statement 343  
%WINDOW macro, compared to WINDOW statement 395

**A**  
ABEND argument  
ABORT statement 19  
ABORT statement 19

details 22  
examples 22  
without arguments 19  
ACCESS= option  
LIBNAME statement 241  
ACCESS= option  
CATNAME statement 41  
aggregate storage location  
method 143  
autocall macro libraries  
accessing lowered members 151  
WebDAV location at 151  
autocall macros  
executing from catalogs 103  
AUTOSKIP= option, WINDOW statement 393

batch processing  
checkpoint-restart mode and 45  
BATCHFILE option  
FILENAME statement, SFTP access method 134  
BCC= option  
FILENAME statement, EMAIL access method 108  
BELL argument, DISPLAY statement 61  
BINARY option  
FILENAME statement, FTP access method 118  
BINNAME argument, DISPLAY statement 61  
BLANK argument, DISPLAY statement 61  
BLKSZ= option  
FILE statement 76  
DPIPE statement 174  
BLOCKZF= option  
FILENAME statement, FTP access method 118  
FILENAME statement, SOCKET access 139  
FILENAME statement, URL access method 143  
SASFILE statement 344  
BY groups  
identifying beginning and end of 36  
processing 37  
BY processing 37  
BY statement 35  
ATTACH= options  
details 36  
examples 38

summing expressions 367  
SYSRCIO statement 368  
SYSRC autocall macro  
MODIFY statement and 277

## T

tabulo-lookup  
duplicate observations in master file reading 361  
TCPIP socket  
reading and writing text through 92  
TCPIP socket access  
FILENAME statement 138  
UPDATEMODE= option  
MODIFY statement 271  
URL access method  
See FILENAME statement, URL access method  
terminals  
filters for 97  
TERMSTR= option  
FILENAME statement, SOCKET access 140  
FILENAME statement, URL access method 142  
text editor commands, submitting as SAS statements 62  
flow into main entry 62  
title (-) format modifier 221, 224  
TITLE statement 368  
titles  
customizing with BY variables 373  
customizing with ODS 373  
TITLES option  
FILE statement 76  
TO statement, compared to LINK statement 237  
TO= option  
FILENAME statement, EMAIL access method 110  
trailing @  
INPUT statement, list 221  
transaction data sets  
modifying observations 281  
length, specifying 237  
renaming 331  
retaining values 337  
VIEW= argument  
DATA statement 48

## U

unaligned data 225  
UNBUFFERED option  
INFILE statement 181  
UNIQUE option  
SET statement 353  
UNIQUE= option  
MODIFY statement 271  
Universal Printers  
filters for 97  
UPDATE statement 377  
compared to MERGE statement 269  
UPDATEMODE= argument  
UPDATEMOD= option  
MODIFY statement 271  
URL access method  
See FILENAME statement, URL access method  
USER= option  
FILENAME statement, FTP access method 124  
FILENAME statement, URL access method 142  
FILENAME statement, URL access method 145  
FILENAME statement, WebDAV access method 150

## V

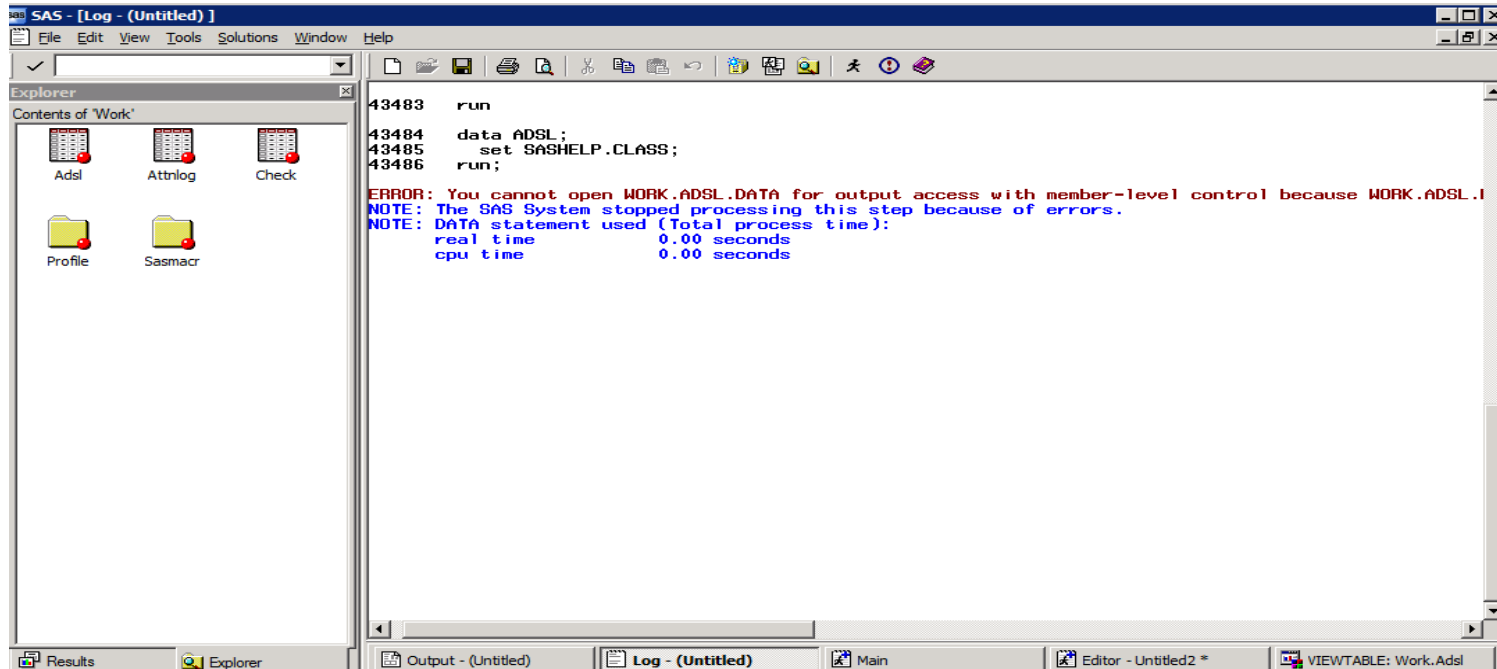
variable-length records  
reading 190  
scanning for character string 189  
variables  
\_ERROR\_ setting 74  
associating input to 260  
associating formats with 156  
associating informats with 196  
BY variables 38  
FIRST, 36  
labeling 233  
LAST, 36  
length, specifying 237  
renaming 331  
retaining values 337  
VIEW= argument  
DATA statement 48

## W

WAIT\_MILLISECS= option  
FILENAME statement, SFTP access

# Mundane Frustration

*SAS, in all its glory and functionality still does not fail to frustrate us in certain mundane tasks that we cannot avoid.*



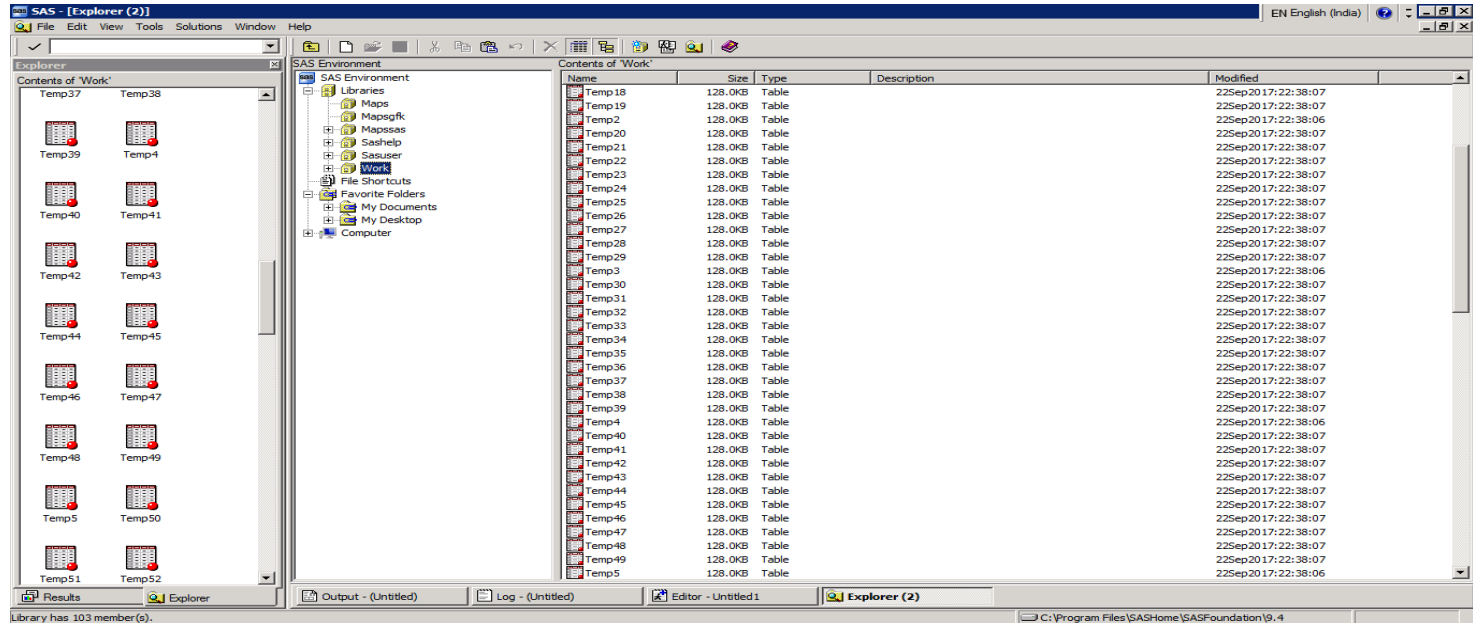
# Scouring through troves of pages in the log

*How many times have you had to press these particular set of keys, so that you don't have to wade through thousands of notes to pick out a message of interest.*



# Searching for the last created dataset

*This problem is so common that it doesn't warrant an explanation.*



# It's time to get rid of your computer's umbilical cord

*When we evolve as programmers, the first step in our lifecycle is to stop using the mouse and get everything done with our keyboard*



# Most of the ocean is yet to be discovered

*There are still innumerable options that are waiting to be discovered and the only limits that we have with these are those set by our own imagination*







**ACCELERATING RESEARCH &  
DEVELOPMENT**