# TEST 1

## Error conditions handled smoothly

In most cases tests should include confirmation that the macro handle invalid or error conditions smoothly, with a clear message to the user, and an appropriate return value to the calling program.

For example, given an invalid data set name, a macro should set the global macro variable CONTINUE to 0 (See [Project Programming Guidelines](http://www.phusewiki.org/wiki/index.php?title=WG5_P02_Programming_Guidelines) for further discussion).

## Checks

1. Invalid parameter produces clear message
   1. Missing/Invalid data set
   2. Invalid BLOCK variable
   3. Invalid CATEGORY variable
2. Unexpected Missing Values for CHAR variables
   1. Missing BLOCK values included in dset
   2. Missing CATEGORY values included in dset
   3. Both BLOCK and CATEGORY include MISSING values
3. Repeat b. with NUMERIC variables

# TEST 2

## Title of this macro-specific test

Brief description and justification of this test.

For example, illustrate the need for this test using an example from clinical trials analysis.

## Checks

1. MAX 10 boxes per page for rectangular data set (consistent number of CATEGORYs for every BLOCK )
   1. Numeric BLOCK and CATEGORY variables
   2. Character BLOCK and CATEGORY variables
2. MAX 10 boxes per page for data set with gaps (some CATEGORYs missing from some BLOCKs)
   1. Numeric BLOCK and CATEGORY variables
   2. Character BLOCK and CATEGORY variables
3. REPEAT a. for 3 boxes per page, specifically 3 is smaller than the number of CATEGORYs (4)
   1. Expect macro to keep all 4 CATEGORYs together on one page
4. REPEAT b. for 3 boxes per page, specifically 3 is smaller than the number of CATEGORYs (4)
   1. Expect macro to keep all 4 CATEGORYs together on one page
5. REPEAT a. for 20 boxes per page
6. REPEAT b. for 20 boxes per page
7. REPEAT 1.b. with **2 CATEGORY** variables

# TEST 3

## Confirm expected log messages

In most cases tests will include failure scenarios, which should produce log messages. The following log messages are EXPECTED due to test design (testing failure conditions):

WARNING: (TEST\_UTIL\_BOXPLOT\_BLOCK\_RANGES) User must ensure PhUSE CS utilities are in the AUTOCALL path.

ERROR: (ASSERT\_DSET\_EXIST) Result is FAIL. Data set DSET\_DNE is NOT accessible. Try another data set.

ERROR: (ASSERT\_DEPEND) Data set DSET\_DNE is not available.

ERROR: (ASSERT\_DEPEND) Result is FAIL. Dependencies for this program not met. Expect problems.

ERROR: (ASSERT\_VAR\_EXIST) Result is FAIL. "VISVAR\_DNE" is NOT a variable on data set SASHELP.HEART.

ERROR: (ASSERT\_DEPEND) Data set SASHELP.HEART does not contain required variable VISVAR\_DNE.

ERROR: (ASSERT\_DEPEND) Result is FAIL. Dependencies for this program not met. Expect problems.

ERROR: (ASSERT\_VAR\_EXIST) Result is FAIL. "TRTVAR\_DNE" is NOT a variable on data set SASHELP.HEART.

ERROR: (ASSERT\_DEPEND) Data set SASHELP.HEART does not contain required variable TRTVAR\_DNE.

ERROR: (ASSERT\_DEPEND) Result is FAIL. Dependencies for this program not met. Expect problems.

ERROR: (ASSERT\_VAR\_EXIST) Result is FAIL. "VISVAR\_DNE" is NOT a variable on data set SASHELP.HEART.

ERROR: (ASSERT\_DEPEND) Data set SASHELP.HEART does not contain required variable VISVAR\_DNE.

ERROR: (ASSERT\_VAR\_EXIST) Result is FAIL. "TRTVAR\_DNE" is NOT a variable on data set SASHELP.HEART.

ERROR: (ASSERT\_DEPEND) Data set SASHELP.HEART does not contain required variable TRTVAR\_DNE.

ERROR: (ASSERT\_DEPEND) Result is FAIL. Dependencies for this program not met. Expect problems.

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=10 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=13 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=16 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=19 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=22 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=25 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=28 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=31 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=34 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=37 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=40 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=eight COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=five COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=four COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=nine COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=one COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=seven COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=six COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=ten COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=three COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=two COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=10 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=16 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=22 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=25 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=31 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitnum=34 COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=eight COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=five COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=one COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=six COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (3) is too small for this blocking: visitcd=three COUNT=4

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (10) is too small for this blocking: BP\_Status=High COUNT=12

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (10) is too small for this blocking: BP\_Status=Normal COUNT=12

WARNING: (UTIL\_BOXPLOT\_BLOCK\_RANGES) MAX\_BOXES\_PER\_PAGE (10) is too small for this blocking: BP\_Status=Optimal COUNT=12