

Chapter IV-3 — User-Defined Functions

Structures, including substructures, can be copied using simple assignment from one structure to the other. The source and destination structures must be defined using the same structure name.

The **Print** operation can print individual elements of a structure or can print a summary of the entire STRUCT variable.

Structure Example

Here is a contrived example using structures. Try executing `foo(2)`:

```
Constant kCaSize = 5

Structure substruct
  Variable v1
  Variable v2
EndStructure

Structure mystruct
  Variable var1
  Variable var2[10]
  String s1
  WAVE fred
  NVAR globVar1
  SVAR globStr1
  FUNCREF myDefaultFunc afunc
  STRUCT substruct ss1[3]
  char ca[kCaSize+1]
EndStructure

Function foo(n)
  Variable n

  Make/O/N=20 fred
  Variable/G globVar1 = 111
  String/G aGlobStr="a global string var"

  STRUCT mystruct ms
  ms.var1 = 11
  ms.var2[n] = 22
  ms.s1 = "string s1"
  WAVE ms.fred      // could have =name if want other than waves named fred
  NVAR ms.globVar1
  SVAR ms.globStr1 = aGlobStr
  FUNCREF myDefaultFunc ms.afunc = anotherfunc
  ms.ss1[n].v1 = ms.var1/2
  ms.ss1[0] = ms.ss1[n]
  ms.ca = "0123456789"
  bar(ms,n)
  Print ms.var1,ms.var2[n],ms.s1,ms.globVar1,ms.globStr1,ms.ss1[n].v1
  Print ms.ss 1[n].v2,ms.ca,ms.afunc()
  Print "a whole wave",ms.fred
  Print "the whole ms struct:",ms

  STRUCT substruct ss
  ss = ms.ss1[n]
  Print "copy of substruct",ss
End

Function bar(s,n)
  STRUCT mystruct &s
  Variable n

  s.ss1[n].v2 = 99
  s.fred = sin(x)
  Display s.fred
End

Function myDefaultFunc()
  return 1
End

Function anotherfunc()
  return 2
End
```