Example #15 -- SPARC Selective Control Constructs

<1 north:~/Examples >cat example15.s

/**************************************************************************
Example #15 -- SPARC Selective Control Constructs

Read one character from the standard input stream and classify it.
******************************************************************************/

.global  main
.section " .text"
.align   4

main:
save  %sp, -96, %sp

call  getchar        ! Read one character (returned in %r8)
nop
mov   %r8, %r16      ! Transfer character to %r16

! if( character is equal to '$' )then
!   print "Found a dollar sign"
! endif

if1:
  cmp  %r16, '$'        ! Compare character to '$'
  bne  endif1

then1:
  set  fmt1, %r8        ! Print "Found a dollar sign"
  call  printf

endif1:

! if( character is in the first half of the ASCII set )then
!   print "Found a character in the first half of the ASCII set"
! else
!   print "Found a character in the second half of the ASCII set"
! endif

if2:
  cmp  %r16, 0x40       ! Compare character to an at sign ('@')
  bge  else2

then2:
  set  fmt2, %r8        ! Print "... first half ...
  call  printf

endif2:

else2:
  set  fmt3, %r8        ! Print "... second half ...
  call  printf

endif2:
! if( character is between '0' and '9' )then
!   print "Found a decimal digit"
! endif

if3:
  cmp   %r16, '0'      ! Compare character to '0'
  blt   endif3
  nop
  cmp   %r16, '9'      ! Compare character to '9'
  bgt   endif3
  nop
then3:
  set    fmt4, %r8     ! Print "Found a decimal digit"
  call   printf
  nop
endif3:
  ret
  restore

fmt1:
  .asciz   "\nFound a dollar sign\n"
fmt2:
  .asciz   "\nFound a character in the first half of the ASCII set\n"
fmt3:
  .asciz   "\nFound a character in the second half of the ASCII set\n"
fmt4:
  .asciz   "\nFound a decimal digit\n"

<2 north:~/Examples >gcc example15.s
<3 north:~/Examples >a.out
$ Found a dollar sign
Found a character in the first half of the ASCII set
<4 north:~/Examples >a.out
  ^G
Found a character in the first half of the ASCII set
<5 north:~/Examples >a.out
  W
Found a character in the second half of the ASCII set
<6 north:~/Examples >a.out
  5
Found a character in the first half of the ASCII set
Found a decimal digit