

PETSCII to screencode conversion

By Mace

While creating my own routine to display a floppy directory, I stumbled across the awkward difference between ASCII/PETSCII codes and screencodes. In *SCII, the letter A is value 65, while on the screen it is value 1. Yet, simply subtracting 64 from all *SCII codes doesn't work. An easy way of converting would be to create a table, but that takes quite some space for something that is not that hard to code. Simply said, you have to divide the *SCII code in blocks and for each block apply a certain calculation to get the screencode.

It could look something like this:

```
// A = *SCII-code

cmp #$20      // if A<32 then...
bcc ddRev

cmp #$60      // if A<96 then...
bcc dd1

cmp #$80      // if A<128 then...
bcc dd2

cmp #$a0      // if A<160 then...
bcc dd3

cmp #$c0      // if A<192 then...
bcc dd4

cmp #$ff      // if A<255 then...
bcc ddRev

lda #$7e      // A=255, then A=126
bne ddEnd

dd2:  and #$5f      // if A=96..127 then strip bits 5 and 7
      bne ddEnd

dd3:  ora #$40      // if A=128..159, then set bit 6
      bne ddEnd

dd4:  eor #$c0      // if A=160..191 then flip bits 6 and 7
      bne ddEnd

dd1:  and #$3f      // if A=32..95 then strip bits 6 and 7
      bpl ddEnd      // <- you could also do .byte $0c here

ddRev: eor #$80      // flip bit 7 (reverse on when off and vice
```

```

versa)
  ddEnd:
    // screencode is now in accu

```

If you would like to use a table after all, you could use this one:

```

tab_petscii2screencode:
                                ;PETSCII RANGE
  .byte $80,$81,$82,$83,$84,$85,$86,$87, $88,$89,$8a,$8b,$8c,$8d,$8e,$8f
; $00-...
  .byte $90,$91,$92,$93,$94,$95,$96,$97, $98,$99,$9a,$9b,$9c,$9d,$9e,$9f
; ...-$1f
  .byte $20,$21,$22,$23,$24,$25,$26,$27, $28,$29,$2a,$2b,$2c,$2d,$2e,$2f
; $20-...
  .byte $30,$31,$32,$33,$34,$35,$36,$37, $38,$39,$3a,$3b,$3c,$3d,$3e,$3f
; ...-$3f
  .byte $00,$01,$02,$03,$04,$05,$06,$07, $08,$09,$0a,$0b,$0c,$0d,$0e,$0f
; $40-...
  .byte $10,$11,$12,$13,$14,$15,$16,$17, $18,$19,$1a,$1b,$1c,$1d,$1e,$1f
; ...-$5f
  .byte $40,$41,$42,$43,$44,$45,$46,$47, $48,$49,$4a,$4b,$4c,$4d,$4e,$4f
; $60-...
  .byte $50,$51,$52,$53,$54,$55,$56,$57, $58,$59,$5a,$5b,$5c,$5d,$5e,$5f
; ...-$7f
  .byte $c0,$c1,$c2,$c3,$c4,$c5,$c6,$c7, $c8,$c9,$ca,$cb,$cc,$cd,$ce,$cf
; $80-...
  .byte $d0,$d1,$d2,$d3,$d4,$d5,$d6,$d7, $d8,$d9,$da,$db,$dc,$dd,$de,$df
; ...-$9f
  .byte $60,$61,$62,$63,$64,$65,$66,$67, $68,$69,$6a,$6b,$6c,$6d,$6e,$6f
; $a0-...
  .byte $70,$71,$72,$73,$74,$75,$76,$77, $78,$79,$7a,$7b,$7c,$7d,$7e,$7f
; ...-$bf
  .byte $00,$01,$02,$03,$04,$05,$06,$07, $08,$09,$0a,$0b,$0c,$0d,$0e,$0f
; $c0-...
  .byte $10,$11,$12,$13,$14,$15,$16,$17, $18,$19,$1a,$1b,$1c,$1d,$1e,$1f
; ...-$df
  .byte $60,$61,$62,$63,$64,$65,$66,$67, $68,$69,$6a,$6b,$6c,$6d,$6e,$6f
; $e0-...
  .byte $70,$71,$72,$73,$74,$75,$76,$77, $78,$79,$7a,$7b,$7c,$7d,$7e,$5e
; ...-$ff

```

From: <https://codebase64.org/> - Codebase 64 wiki

Permanent link: https://codebase64.org/doku.php?id=base:petscii_to_screencode

Last update: 2015-04-17 04:33

