

Moving sprites / Sorting movement from VIC update

by Achim

x+msb

Moving sprites can be annoying in terms of msb handling. To avoid the msb issue you usually use tables for moving the sprites and let a small routine update the VIC registers every frame.

```
spritey:    .byte $00, $00, $00, $00, $00, $00, $00, $00
spritex:    .byte $00, $00, $00, $00, $00, $00, $00, $00
spritemsb:  .byte $00, $00, $00, $00, $00, $00, $00, $00
spritecolor: ...
spritepointer: ...
```

Now simple 16bit additions/subtractions apply to moving sprites. The main program can ignore the msb handling.

Here's a small routine to update VIC registers. Should be called by an irq. Preferably before VIC starts to draw the next frame.

```
        ldx #$07
        ldy #$0e
loop:   lda srpitye,x
        sta $d001,y      //write y
        lda spritex,x
        sta $d000,y      //write x
        lda spritemsb,x
        cmp #$01         //no msb=carry clear / msb=carry set
        rol $d010        //carry -> $d010, repeat 8 times and all bits are
set
        lda spritecolor,x
        sta $d027,x
        lda spritepointer,x
        sta $07f8,x      //screen at $0400

        dey
        dey
        dex
        bpl loop
```

Oldschool: x*2

This allows to use 8bit calculations for moving the sprite on x axis. No need for a msb table anymore. On the downside sprites can only be moved with 2px/frame.

```
spritey:    .byte $00, $00, $00, $00, $00, $00, $00, $00
spritex:    .byte $00, $00, $00, $00, $00, $00, $00, $00
spritecolor: ...
spritepointer: ...
```

Update VIC registers:

```
    ldx #$07
    ldy #$0e
loop: lda srpritey,x
      sta $d001,y      //write y
      lda spritex,x
      asl              //x*2>$ff -> carry set=msb, x*2<=$ff -> carry clear=no
msb  sta $d000,y      //write x*2
      rol $d010      //carry -> $d010
      lda spritecolor,x
      sta $d027,x
      lda spritepointer,x
      sta $07f8,x      //screen at $0400
      dey
      dey
      dex
      bpl loop
```

From:

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

Permanent link:

https://codebase64.org/doku.php?id=base:moving_sprites

Last update: **2015-04-17 04:33**

