



# Tech Info Library

## Apple IIGS: Reading and setting the Clock (2 of 2)

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Security: Everyone

Apple IIGS: Reading and setting the Clock (2 of 2)

=====  
This is a simple program that will display the time and allow the user to enter 3 keys:

1. Escape - Exit the program
2. Up arrow - Increment seconds
3. Down arrow - Decrement seconds

There is a feature limitation in that the program doesn't update the minutes when the seconds become less than zero or greater than 60. It turns out that this is no problem when incrementing the time, but leads to interesting side effects when decrementing it.

The 'macros' short and long should be replaced by the following instructions:

```
short:          long:
-----          -----
sec             clc
xce             xce
sep #30        rep #30
```

They simply put the computer in either 8- (short) or 16- (long) bit mode, whichever is necessary at the time.

Start

```
          short             ; put the computer in 8-bit mode
          lda c010          ; clear the keyboard
loop      jsr ShowTime      ; show the time and date
          jsr ReadKey       ; see if a char was typed, and act on it
          bcc loop         ; carry set if ESCAPE is hit
          rts
```

ShowTime

```
          long
          pea 0000          ; point output buffer to screen
          pea 0400
          ldx #0f03        ; _ReadAsciiTime (put ASCII time onto screen)
```

```

        jsl $e10000
        short
        rts

ReadKey
        lda c000                ; was a key hit?
        bmi KeyHit              ; yes, do something about it.
        clc                     ; no - return to main loop
        rts

KeyHit
        lda c000                ; get the key (high bit set)
        sta c010                ; clear keyboard strobe
        cmp #9b                 ; Escape?
        bne NotESC
        sec                     ; Escape was hit - set Quit flag
        rts

NotESC
        cmp #9a                 ; down arrow?
        beq Arrow
        cmp #9b                 ; up arrow?
        beq Arrow
        clc                     ; neither, return with no error
        rts

Arrow
        sta temp                ; remember which arrow was chosen
        long
        pha                     ; push room on stack for time in hex format
        pha
        pha
        pha
        ldx #0d03               ; _ReadTimeHex (leave everything on the stack
        jsl e10000              ; for _WriteTimeHex later)
        short
        ldx 01,s                ; get the seconds
        ldx temp                ; recall which arrow was hit
        cpx #9a
        beq dnArrow
        inc a                   ; increment time on up arrow
        bra cont

dnArrow
        dec a                   ; decrement time on down arrow

cont
        sta 01,s                ; put it back on the stack
        long
        ldx #0e03               ; _WriteTimeHex
        jsl e10000
        pla                     ; get rid of extra stuff from _GetTimeHex
        short
        jsr ShowTime            ; update the screen
        bra ReadKey            ; see if another key was hit

Temp   ds 1                    ; temporary storage

```

The calls and usage shown in the program are described in "The Apple IIGS Toolbox Reference Manual: Parts 1 and 2" available from Addison-Wesley.

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