TA: Jade Cheng

ICS 312

Homework Solution #17

Due Date: October 01, 2009

Macros for lines Homework Code

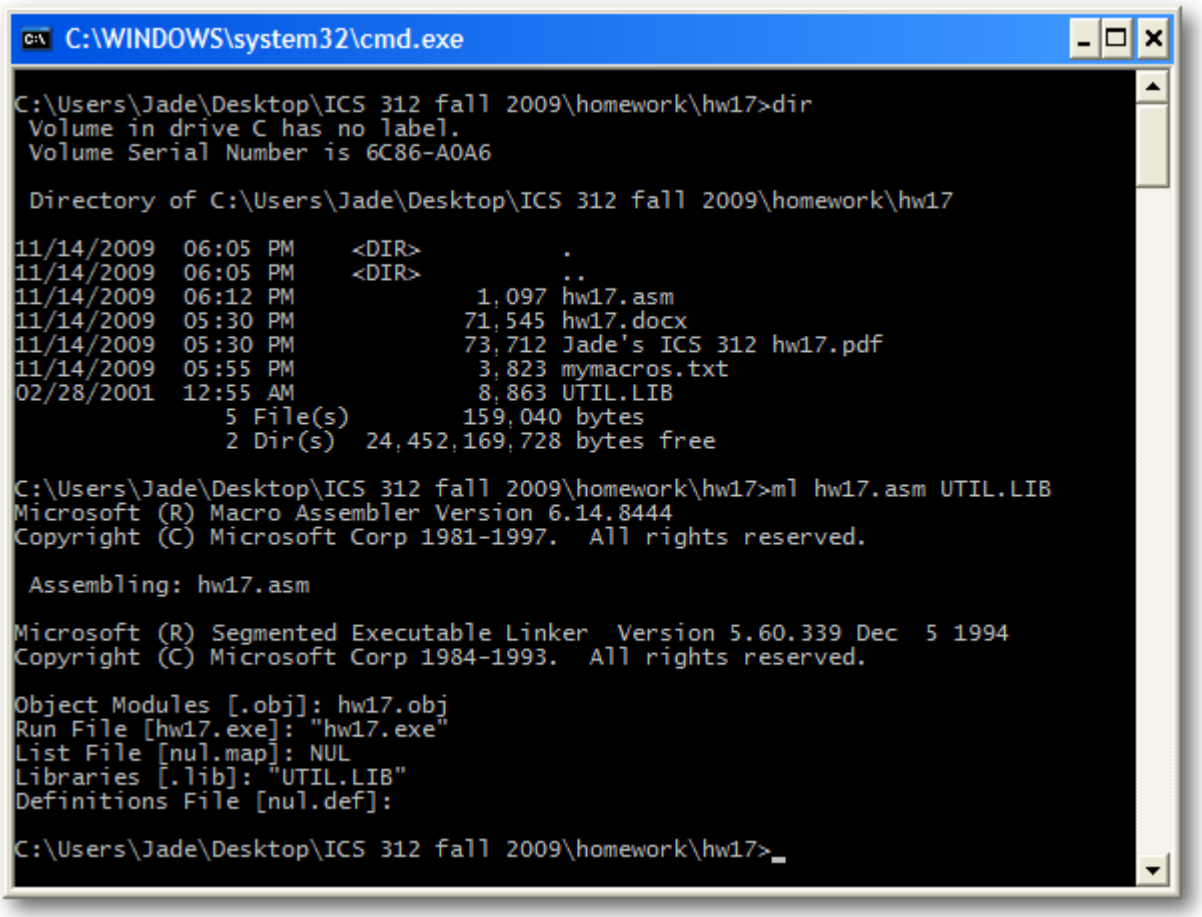
```
:
:                                   ; within the mymacro.txt file
:
;; ------------------------------ Jade's code --------------------------------
;; draw a vertical line
vl  macro x, y, len, color
        local   again
        pusha
        cld                         ; set DF for left to right
        mov     al, color           ; set color
        mov     cx, len             ; number of pixels to display
        mov     di, y*320+x         ; di = rows * 320 + cols
again:
        mov byte ptr es:[di], al
        add di, 320
        loop again
        popa
        endm
;; draw a right diagonal line
drl macro x, y, len, color
        local   again
        pusha
        cld                         ; set DF for left to right
        mov     al, color           ; set color
        mov     cx, len             ; number of pixels to display
        mov     di, y*320+x         ; di = rows * 320 + cols
again:
        mov     byte ptr es:[di], al
        add     di, 321
        loop    again
        popa
        endm
```

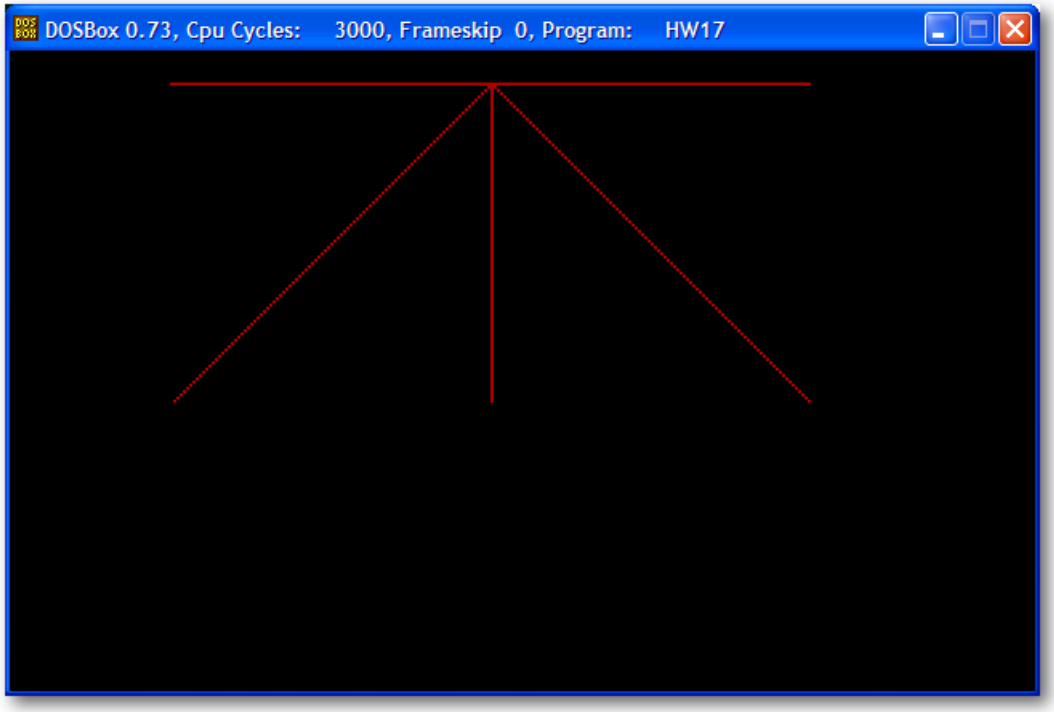
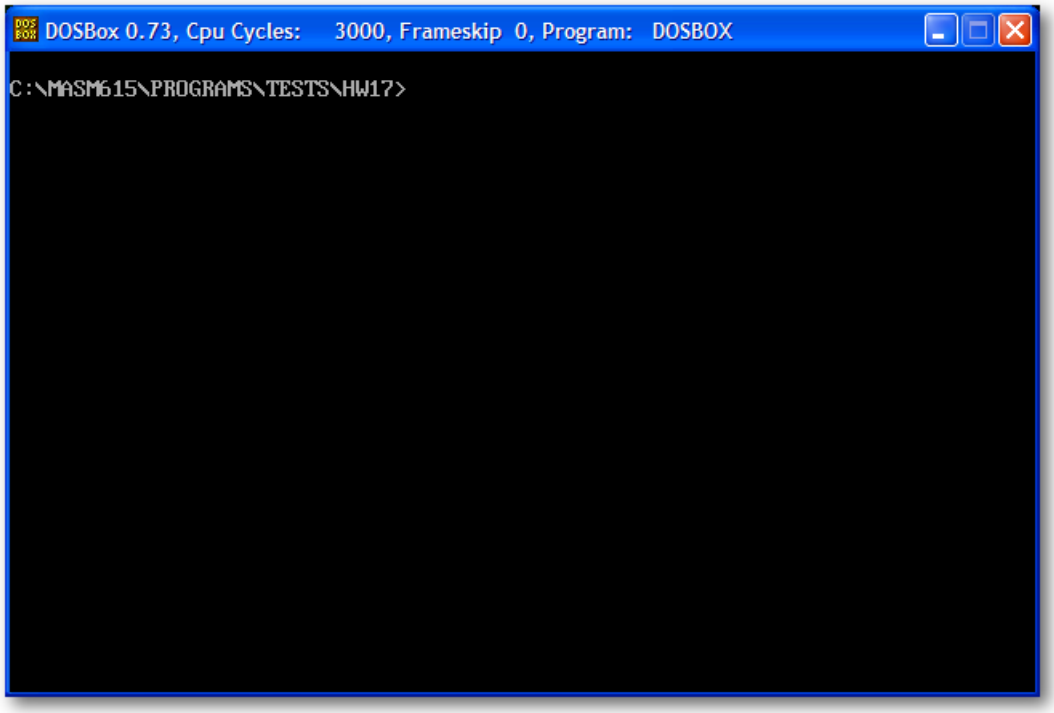
```
;; draw a left diagonal line
dll macro x, y, len, color
        local   again
        pusha
        cld                         ; set DF for left to right
        mov     al, color           ; set color
        mov     cx, len             ; number of pixels to display
        mov     di, y*320+x         ; di = rows * 320 + cols
again:
        mov     byte ptr es:[di], al
        add     di, 319
        loop    again
        popa
        endm

;; draw a horizontal line
hl  macro x, y, len, color
        mov     di, y*320+x         ; di = rows * 320 + cols
        cld                         ; from left to right
        mov     cx, len             ; draw len that long
        mov     al, color           ; color attribute
        rep     stosb
        endm
;; -------------------------- End of Jade's code -----------------------------
```

```
; this program tests the draw line macros in the mymacro.txt file.
        .model small
        .586
        .stack      100h
        .code
        include mymacros.txt        ; include mymacros.txt file
main    proc
        mov     ax, @data
        mov     ds, ax
        mov     ah, 0               ; set graphics mode
        mov     al, 13h
        int     10h
        mov     ax, 0a000h          ; set ES
        mov     es, ax
```

```
        hl      50, 10, 200, 4      ; draw a horizontal line
        vl      150, 10, 100, 4     ; draw a vertical line
        drl     150, 10, 100, 4     ; draw a right diagonal line
        dll     150, 10, 100, 4     ; draw a left diagonal line
        mov     ah, 1               ; wait for a keystroke
        int     21h
        mov     ah, 0               ; restore graphics mode to mode 3
        mov     al, 3h              ; and clear the screen
        int     10h
        mov     ax, 4C00h           ; 4c in ah is dos exit fn with return code in al
        int     21h
main    endp
        end     main
```

Macros for lines Homework Output





Clicking any key: