CPE 390: Microprocessor Systems

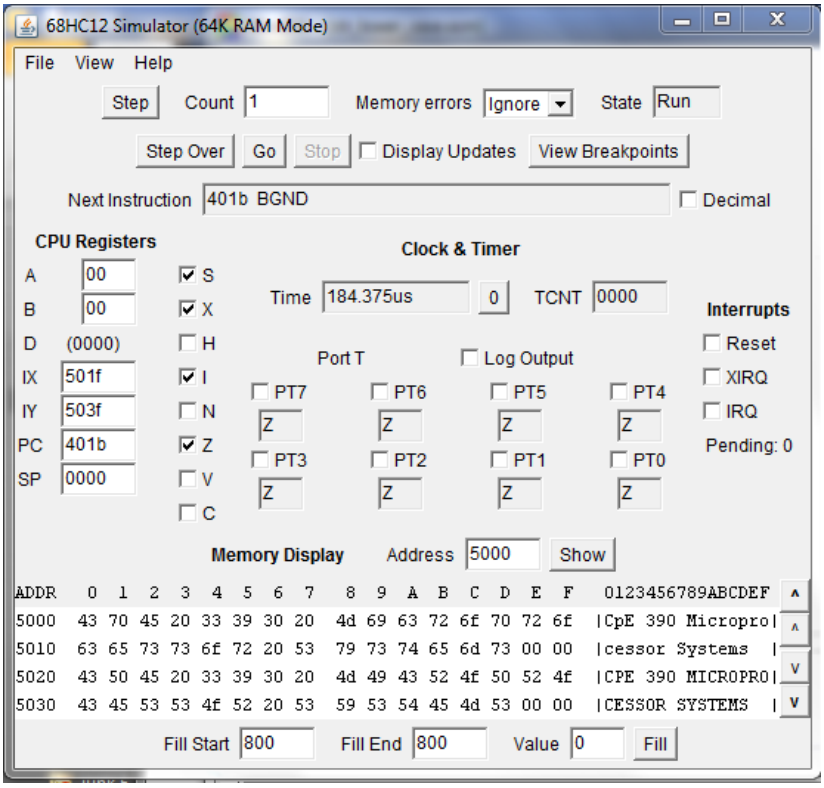
Solutions HW4 (total = 40 pts.)

1.

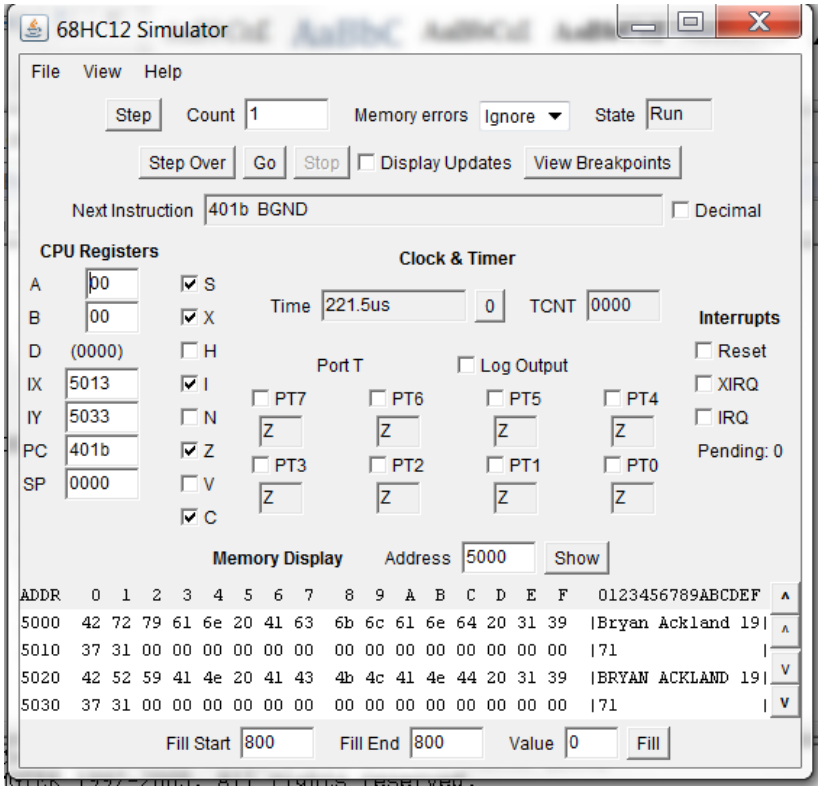
```
ch_a:   EQU     $61
ch_z:   EQU     $7A

        ORG     $5000
stra:   DC.B    "CpE 390 Microprocessor Systems",0
        ORG     $5020
strb:

        ORG $4000
        ldx     #stra
        ldy     #strb
loop:   ldaa    1,X+
        beq     done
        cmpa    #ch_a
        blo     skip
        cmpa    #ch_z
        bhi     skip
        suba    #$20
skip:   staa    1,Y+
        bra     loop
done:   staa    1,Y+
```

(10 points)

**The code must check for a NULL to determine the end of the string. If the code counts characters (knowing the length of this particular string) take off 2 points.



(5 points)



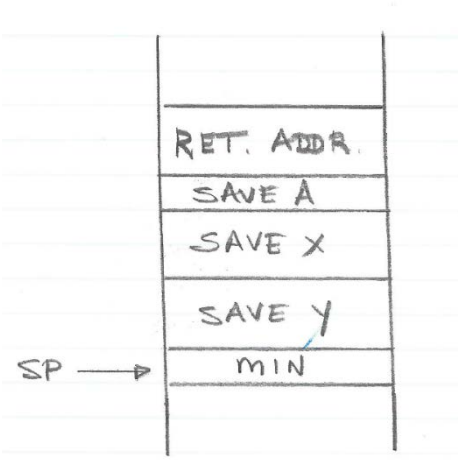
(3 points)

2.

	ADDR	DATA
	$4800	??
	$47FF	$2B
	$47FE	??
	$47FD	$2B
	$47FC	$41
SP →	$47FB	$56
	$47FA	$82
	$47F9	$56

Also Y= $5682 (7 points)

3.



(5 points)

```
minsum:   pshb              ; save acc B
          pshx              ; save X
          pshy              ; save Y
          leas   -1, SP     ; create space for local min
          ldab   0, X       ; load first P
          addb   0, Y       ; create sum
          stab   0, SP      ; initialize min with first sum
loop:     ldab   1, X+      ; load next P
          addb   1, Y+      ; next sum
          cmpb   0,SP       ; compare to current min
          bge    skip       ; skip if not less than
          stab   0,SP       ; update min if new value smaller
skip:     dbne   A, loop    ; done yet?
          ldaa   0, SP      ; load result into A
          leas   1, SP      ; release local space
          puly              ; restore Y
          pulx              ; restore X
          pulb              ; restore B
          rts
```

(This is just one example of what code may look like.) (10 points)