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ENGR 271

HW#4, Problem #1

1. There is a sequence of numbers called the Fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144,… (see: https://oeis.org/A000045). Using VMLAB write a short AVR program to calculate and move the numbers into SRAM memory starting at address 0x100. Use two bytes per number. The fourth number is 2, so the memory address 0x106 should have the byte 0x00 and address 0x107 should have the byte 0x02 (big-endian). Stop when the numbers no longer fit in two bytes.

```
.include "C:\VMLAB\include\m168def.inc"
ldi r26, 0
ldi r27, 1
ldi r16, 0
ldi r17, 0
ldi r18, 0
ldi r19, 1                ;initialize values
loop1:                    ;loop to do fib calculations
   st x+, r16
   st x+, r17
   add r17, r19
   adc r16, r18
   st x+, r18
   st x+, r19
   add r19, r17
   adc r18, r16
brcc loop1
```