实验报告

一、实验内容

Write a program in LC-3 machine language that counts the number of "ones"

in location x3050 and stores the result in location x3051. Your program

should start with the first instruction in x3000. Your program should

terminate with the Halt instruction, which is a trap to the operating

system. The instruction is: 1111000000100101. The TRAP instruction will

be explained on Monday in class.

二、解题思路（流程图）

①注意最高位，负数最高位为1，计数器增一；正数或0不操作

②左移一位，重复步骤①

③结束条件:数据为0，输出计数器数据

三、代码和注释

0011 0000 0000 0000 ;begin at 0x3000

0101 0110 1110 0000 ;R3<-0 x3000

0010 0000 0100 1110 ;R0<-M[x3050] x3001

0000 011 0 0000 0001 ;BRzp x3004 x3002

0001 011 011 1 0000 1 ;R3<-R3+1 x3003

0001 0000 0000 0000 ;R0<-R0+R0 left shifting x3004

0000 011 0 0000 0001 ;BRzp x3007 x3005

0001 011 011 1 0000 1 ;R3<-R3+1 x3006

0000 1011 1111 1100 ;BRnpx3004 x3007

0011 011 0 0100 1000 ;M[x3051]<-R3 x3008

1111 000000100101 ;Halt x3009

四、运行结果截图

