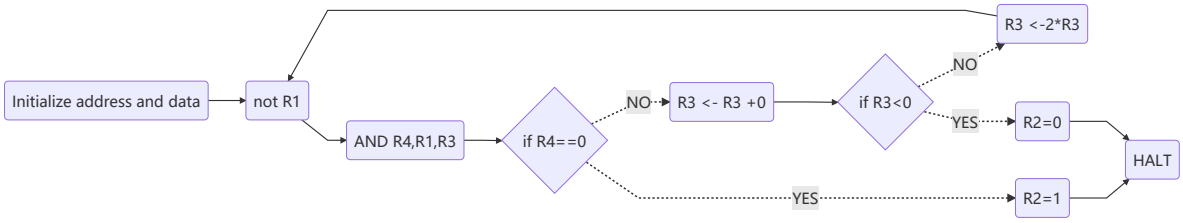
LAB1 REPORT

chart:



Code:

```
0011 0000 0000 0000; tell the simulator to put the program at x3000
; initial variable
0010 001 011111111 ; load the data in x3100 to R1
0101 010 010 1 00000 ; clear r2
0101 011 011 1 00000 ; clear r3
0001 011 011 1 00111 ; assign r3 with 00111
0101 100 100 1 00000 ; clear r4
1001 001 001 111111; NOT r1
;loop
0101 100 001 0 00011; AND r1 r3 ,result store in r4
0000 010 000000100; if r4=0,output 1 else go on
0001 011 011 1 00000 ; r3 <- r3+0
0000 100 000000011 ;if r3 < 0 ,output is 0
0001 011 011 0 00011 ; r3<-r3*2
0000 111 111111010 ;back loop

0001 010 010 1 00001; r2<-r2+1
1111 0000 0010 0101; trap x25
```

Algorithm:

1. use NOT R1,R1 to process the data
2. then AND r4,r1,r3 to check whether there is a sequential 111 in r1.
3. If there is , the r4 will be 0 and we break the loop and make R2 equal to 1. If there isn't , R4 will not be 0 and go on loop.
4. if R3==1110 0000 0000 0000, then it means that loop comes to an end and we should break the loop and make R2 equal to 0.

Check:

- TA : Do you use counter?

  Me : No,I didn't.

  TA : So how do you manage to do that?

  Me :First,I load R1. Then ,I use NOT R1,R1.Then I AND r4,r1,r3.

  TA : OK ,that's fine.