

Tiny CPU - Implementation

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FSM I

```
-----  
Addr. Machine Codes  
00 60          CLA          ;Clear Acc and then add the operand is  
01 20 22      ADD $GDAT     ;equivalent to move the operand to Acc  
03 40 FF      STR $IOP  
05 60          CLA  
06 20 25      ADD $ONE  
08 20 FF      ADD $IOP  
0A A0 0E      JNZ $FG       ;checking fast/slow input  
0C 60          CLA  
0D 60          CLA  
0E 60          FG:        CLA  
0F 20 23      ADD $YDAT  
11 40 FF      STR $IOP  
13 60          CLA  
14 20 24      ADD $RDAT  
16 40 FF      STR $IOP  
18 60          CLA  
19 20 25      ADD $ONE  
1B 20 FF      ADD $IOP  
1D A0 21      JNZ $RG       ;checking fast/slow input  
1F 60          CLA  
20 60          CLA  
21 E0          RG:        RST          ;jump back to addr. 00  
  
22 FE          GDAT: DAT    1111 1110  ;Constant to turn on Green LED  
23 FD          YDAT: DAT    1111 1101  ;Constant for Yellow LED  
24 FB          RDAT: DAT    1111 1011  ;Constant for Red LED  
25 01          ONE:  DAT    0000 0001  ;Constant 1  
                IOP:  EQU    $FF
```

Based on <http://www.ele.uri.edu/Courses/ele306/f01/Tinydoc.pdf>

References

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- [2] https://en.wikiversity.org/wiki/The_necessities_in_SOC_Design
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