M&I PROJECT

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AIM
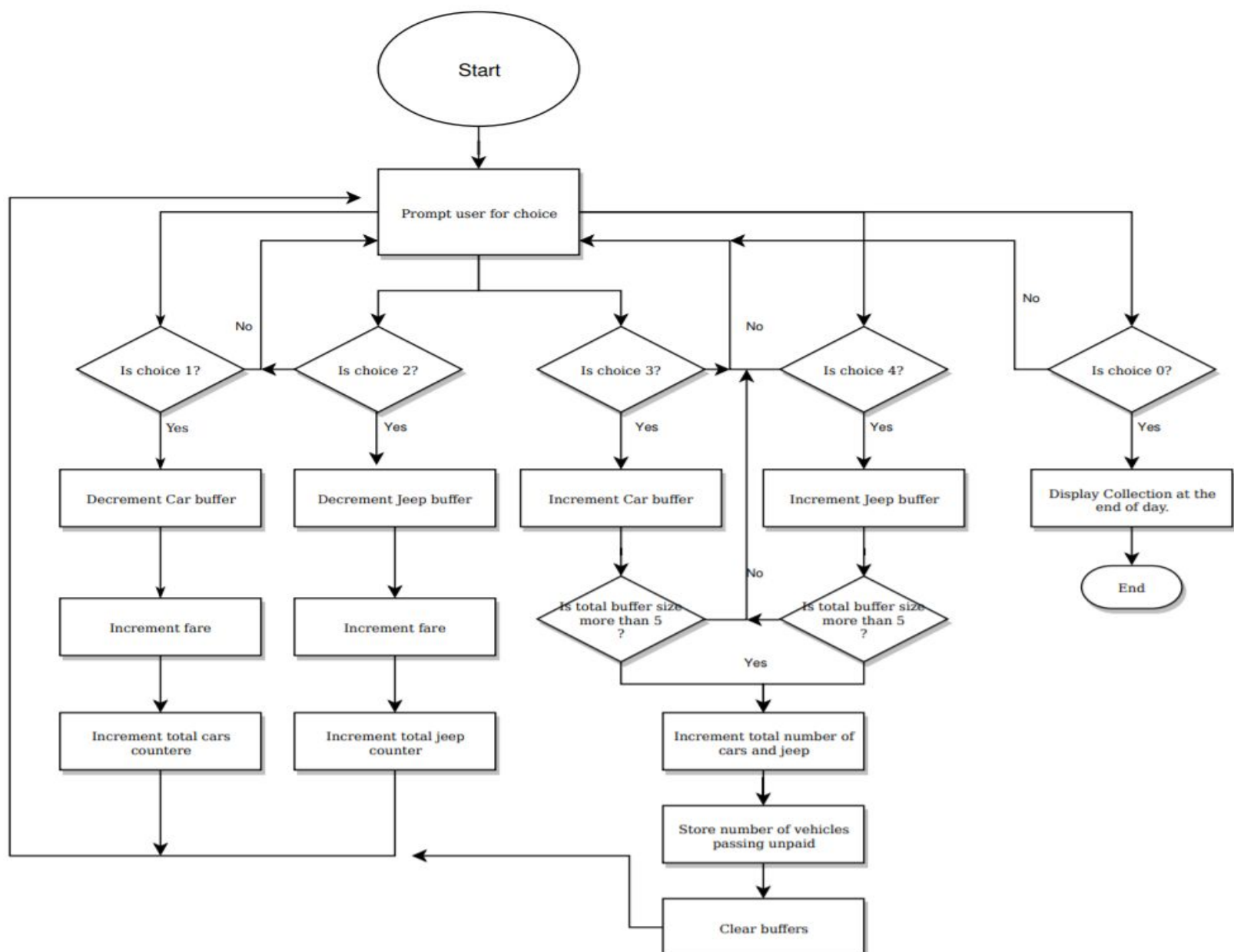
Toll gate system with yellow line feature.

APPARATUS

1- 8085 microprocessor kit.

ALGORITHM

1. Initialize system and clear buffers and counters.
2. Prompt user for choice
3. If choice is 1 decrement car buffer and increment number of cars passed and fair.
4. If choice is 2 decrement jeep buffer and increment number of jeeps passed and fair.
5. If choice is 3 increment car buffer.
6. If choice is 4 increment jeep buffer.
7. Check if total buffer size is greater than threshold. If So, add buffers to their respective counters and clear buffers. Fair Won't increase this time.
8. If choice is zero end the program displaying total collection, else repeat from step 2.

FLOW CHART

Start

Prompt user for choice

Is choice 1?
No
Yes

Is choice 2?
Yes

Is choice 3?
No
Yes

Is choice 4?
Yes

Is choice 0?
No
Yes

Decrement Car buffer

Decrement Jeep buffer

Increment Car buffer

Increment Jeep buffer

Display Collection at the end of day.

Increment fare

Increment fare

Is total buffer size more than 5 ?
No

Is total buffer size more than 5 ?

End

Increment total cars countere

Increment total jeep counter

Yes

Increment total number of cars and jeep

Store number of vehicles passing unpaid

Clear buffers

CODE

```
;<Toll Gate>

jmp start

;code
start: nop



ST:          CPI 01H
       CZ CAR
       CPI 02H
       CZ JEEP
       CPI 03H
       CZ BUFF_CAR
       CPI 04H
       CZ BUFF_JEEP
       CPI 00H
       JZ LOOP
       JMP ST
LOOP:            LDA 7100H
       MOV C,A
       LDA 7101H
       ADD C
       STA 7102H
       HLT

CAR:              LXI H,7001H
       DCR M
       LXI H,7000H
       INR M
       LXI H,7100H
       MOV A,M
       ADI 02H
       MOV M,A
       MVI A,0FFH
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        RET


JEEP:            LXI H,7003H
        DCR M
        LXI H,7002H
        INR M
        LXI H,7101H
        MOV A,M
        ADI 05H
        MOV M,A
        MVI A,0FFH
        RET


BUFF_CAR:    LXI H,7001H
             INR M
             LDA 7003H
             MOV C,A
             ADD M
             CPI 05H
             JC L1
             LDA 7200H
             ADD M
             STA 7200H
             LDA 7201H
             ADD C
             STA 7201H
             LXI H,7001H
             MVI M,00H
             LXI H,7003H
                MVI M,00H
     L1:     MVI A,0FFH
        RET


BUFF_JEEP:    LXI H,7003H
                INR M
                LDA 7001H
                MOV C,A
                ADD M
                CPI 05H
                JC L3
                LDA 7201H
                ADD M
                STA 7201H
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```
        LDA 7200H
        ADD C
        STA 7200H
        LXI H,7001H
        MVI M,00H
        LXI H,7003H
        MVI M,00H
L3:     MVI A,0FFH
  RET
```