**ARGC CODE**  
  
  
  
Start: MOV P3, #0FFH; IR connected to Port3. No block, IR’s output is logica1. ff makes P3 input port

CLR P2.0 ;connected to IN1 of L293D, clearing P2 makes it output

CLR P2.1 ;connected to IN2 of L293D, clearing P2 makes it output

CLR P2.2 ; Red traffic light and Alarm

SETB P2.3 ; Green on for all time except for the time Red is switched on

CheckIR: ACALL DELAY

MOV R7, P3 ;IR (1) read.

MOV A, R7

RRC A

JNC MotorForward; ;Jump when CY=0 i.e. IR is blocked.

SJMP CheckIR

BACK1: MOV R7, P3 ;IR(2) read.

MOV A, R7

RRC A

RRC A

JNC SecondIRDetected

SJMP BACK1

MotorForward:SETB P2.2 ; Red light on

CLR P2.3 ; Green light off

ACALL DELAY1

ACALL DELAY1

SETB P2.0 ;This loop closes the gate.

CLR P2.1

ACALL DELAY1

ACALL DELAY1

ACALL DELAY

CLR P2.0

SJMP BACK1

SecondIRDetected:MOV R6,P3 ;Train is cutting IR(2) and is going to pass through it.

MOV A, R6

RRC A

RRC A

JC MotorReverse\_Check\_FirstIR ; Check IR (1) when train crosses IR (2)

SJMP SecondIRDetected ; Wait till train crosses IR (2)

MotorReverse\_Check\_FirstIR:MOV R5,P3

MOV A,R5

RRC A

JNC MotorReverse\_Check\_FirstIR ;Keep looping when IR (1) is cut. Go down once train crosses IR (1)

SecondIR\_Check:MOV R4,P3 ;Check IR (2) after making sure that train has crossed IR(1)

MOV A,R4

RRC A

RRC A

JNC SecondIR\_Check ;Keep looping when IR(2) is cut. Go down when train crosses IR(2)

CLR P2.0 ;This loop opens the gate.

SETB P2.1

ACALL DELAY1

ACALL DELAY1

ACALL DELAY

CLR P2.1

CLR P2.2 ;Red light and Alarm turned off

SETB P2.3 ;Green light back on

SJMP Start

DELAY:MOV R7,#0FFH ;Delay program 1

TOP:MOV R6,#0FFH

MOV R5,#0FFH

BACK:DJNZ R5,BACK

UP:DJNZ R6,UP

DJNZ R7,TOP

RET

DELAY1:MOV R4,#14H ;Delay program 2

OneSec:MOV TMOD,#01H

MOV TL0,#0AFH

MOV TH0,#3CH

SETB TR0

WAIT:JNB TF0,WAIT

CLR TR0

CLR TF0

DJNZ R4,OneSec

RET

END