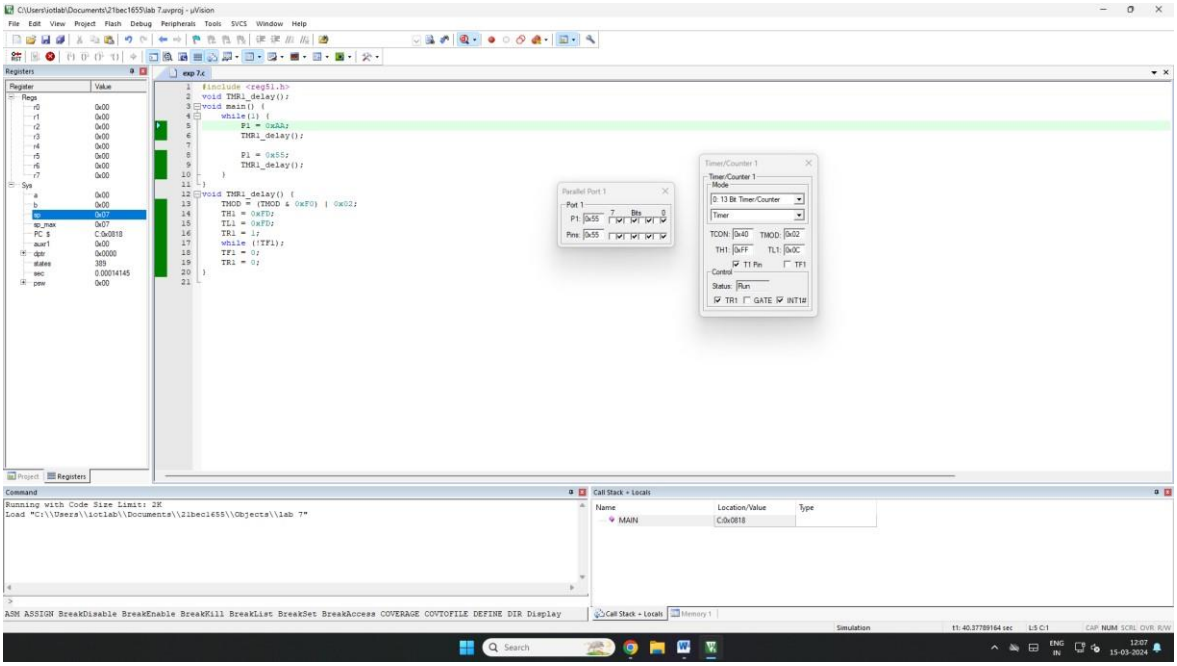
EXPERIMENT 7

PROGRAMS ON TIMER AND COUNTER

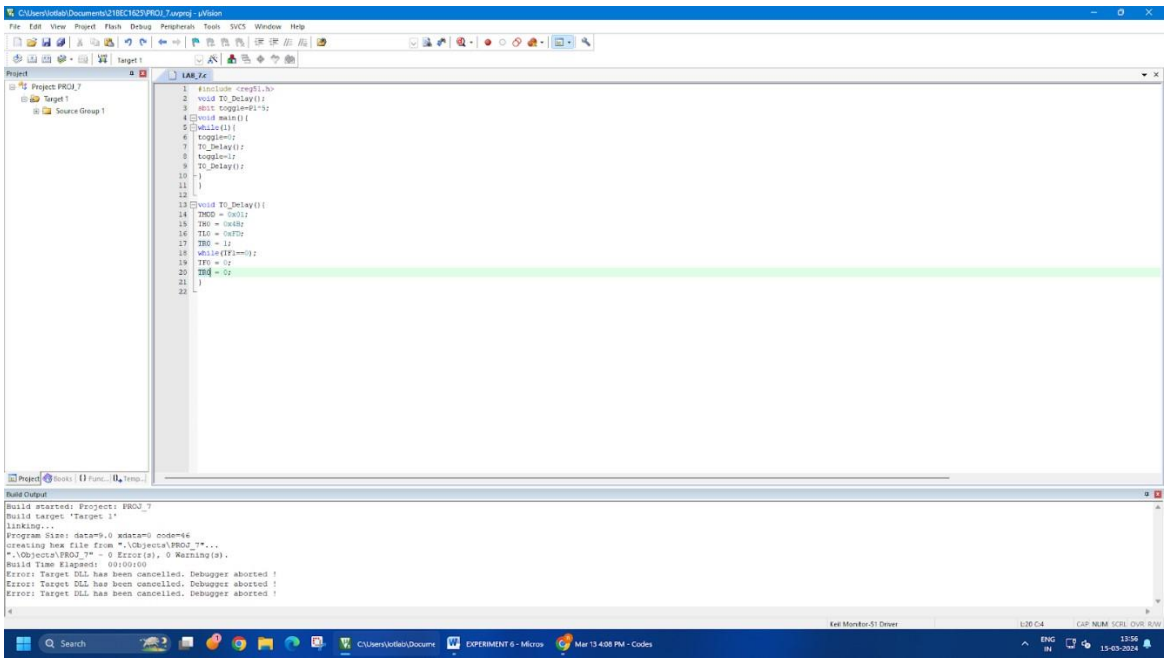
Name : Yash Verma **Reg No: 21BEC1277**

TIMER

1. Write an 8051 C program to toggle port P1 continuously with some delay. Use timer 1 and Mode 2 for delay.

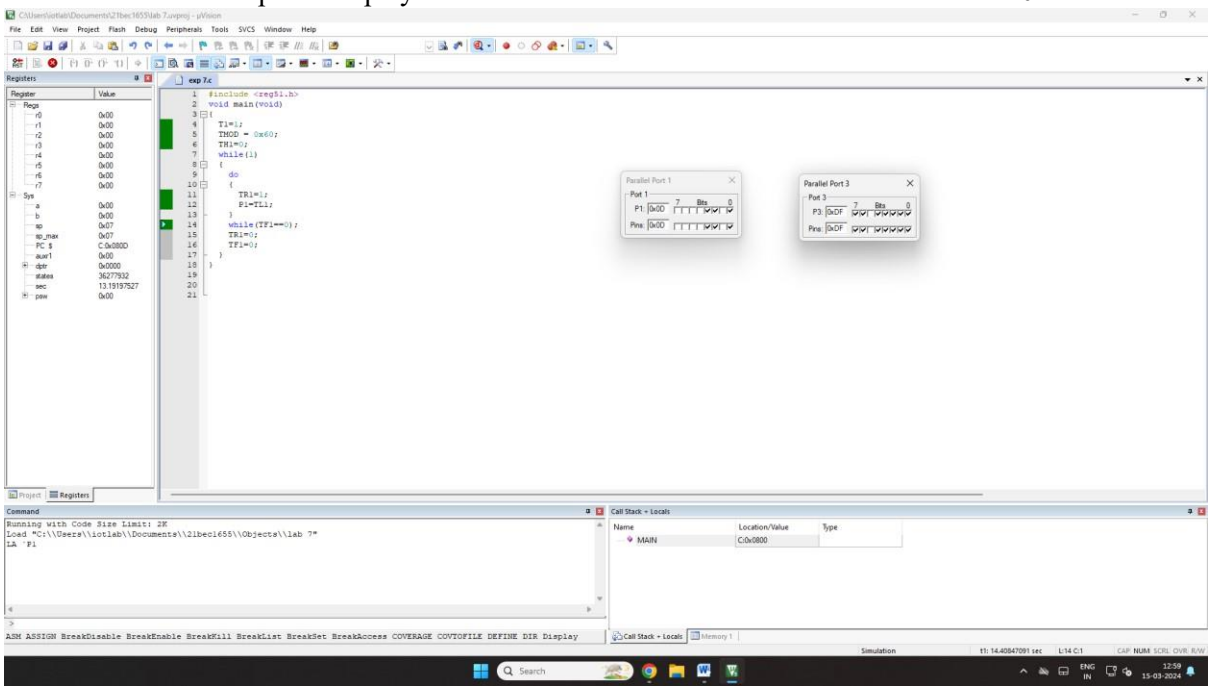


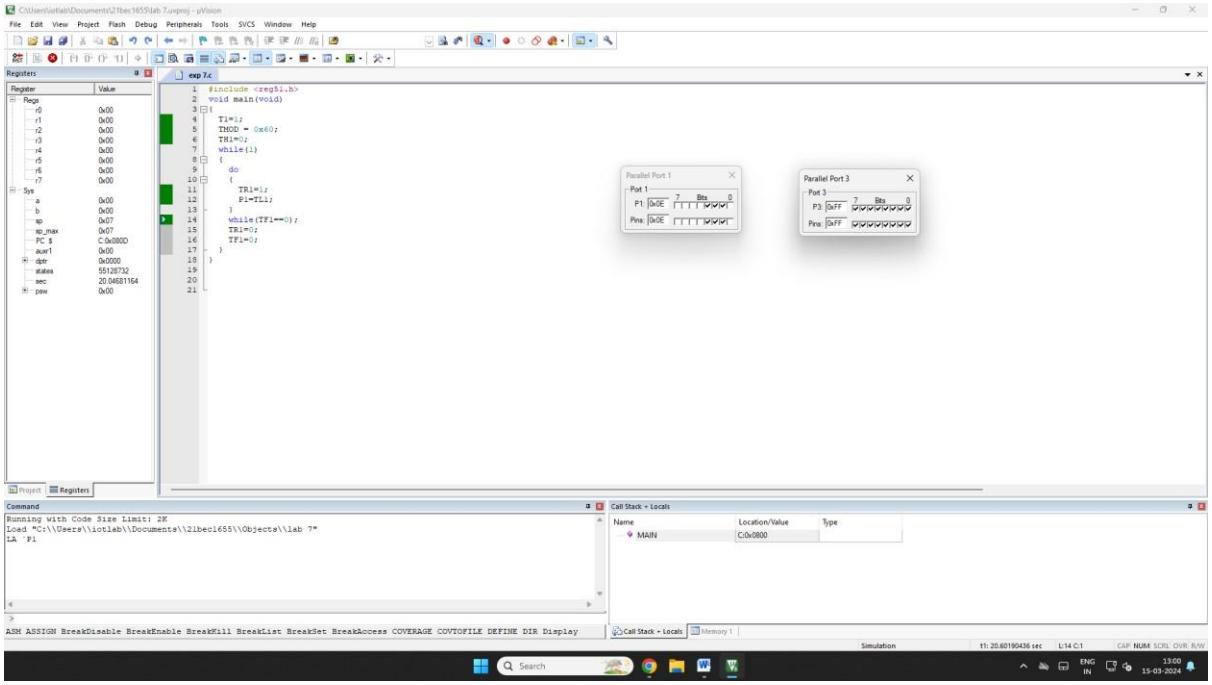
2. Write an 8051 C program to toggle port only bit p1.5 continuously every 50ms.

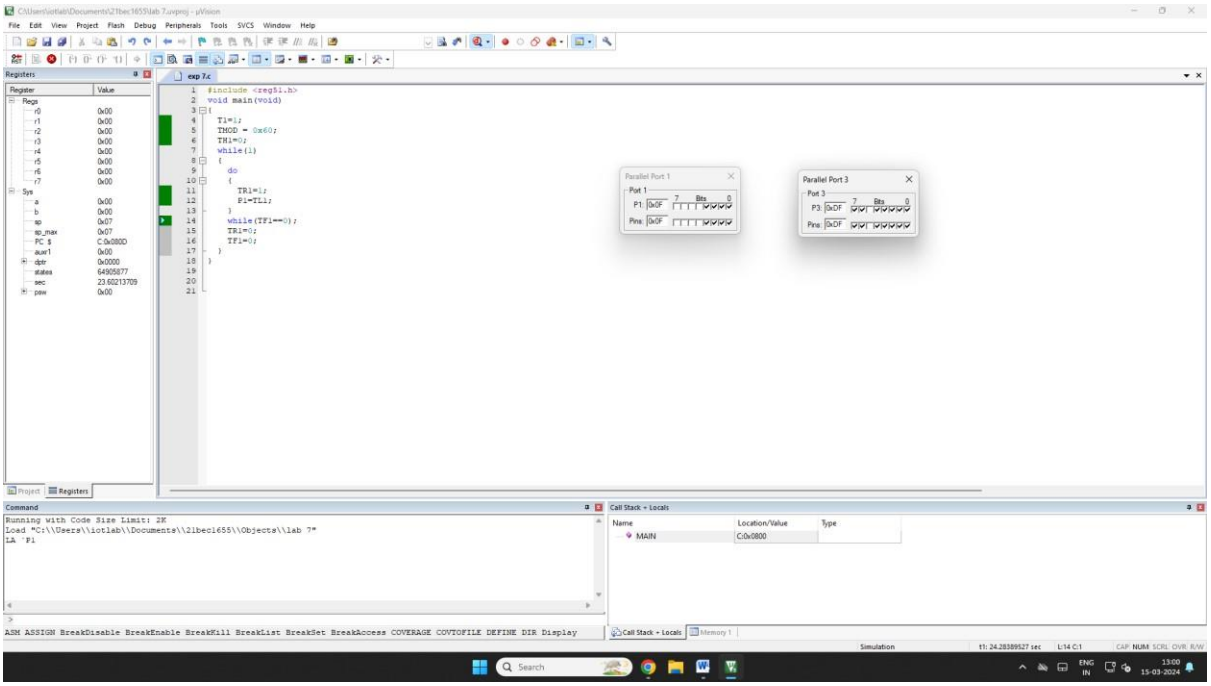


COUNTER

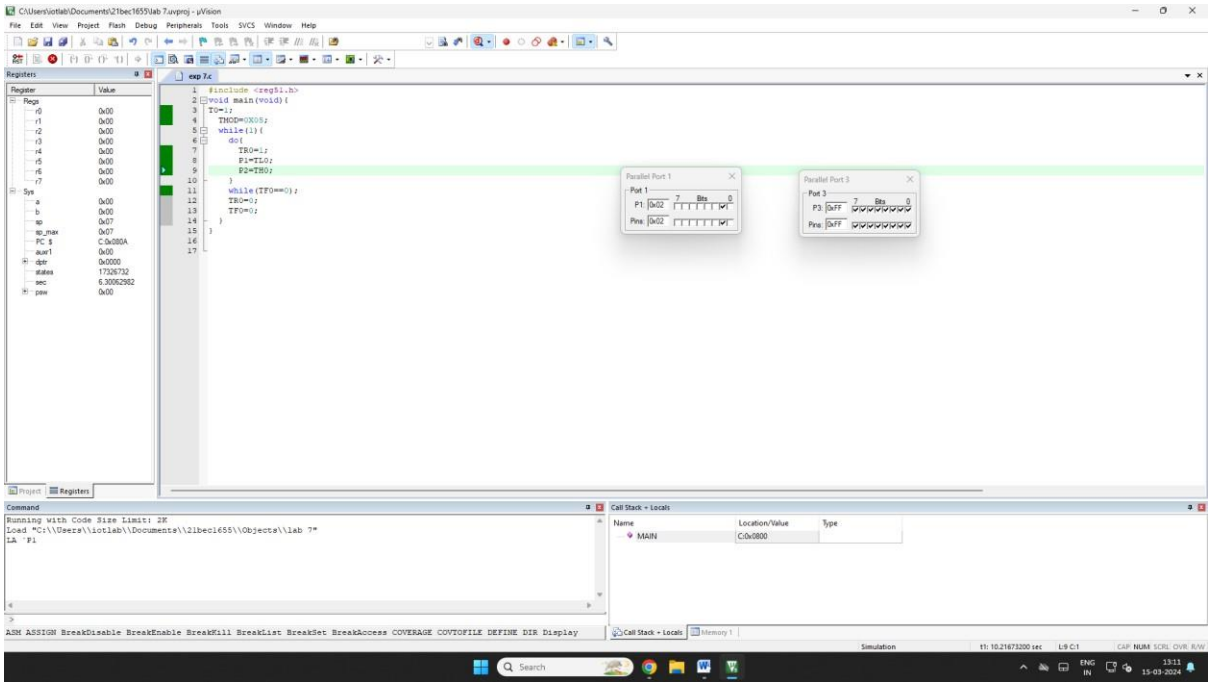
1. Assume that a 1-Hz external clock is being fed into pin T1(P3.5). Write a C program for counter 1 in mode 2 to count up and display the state of the TL1 count on P1. Start the count at 0H.

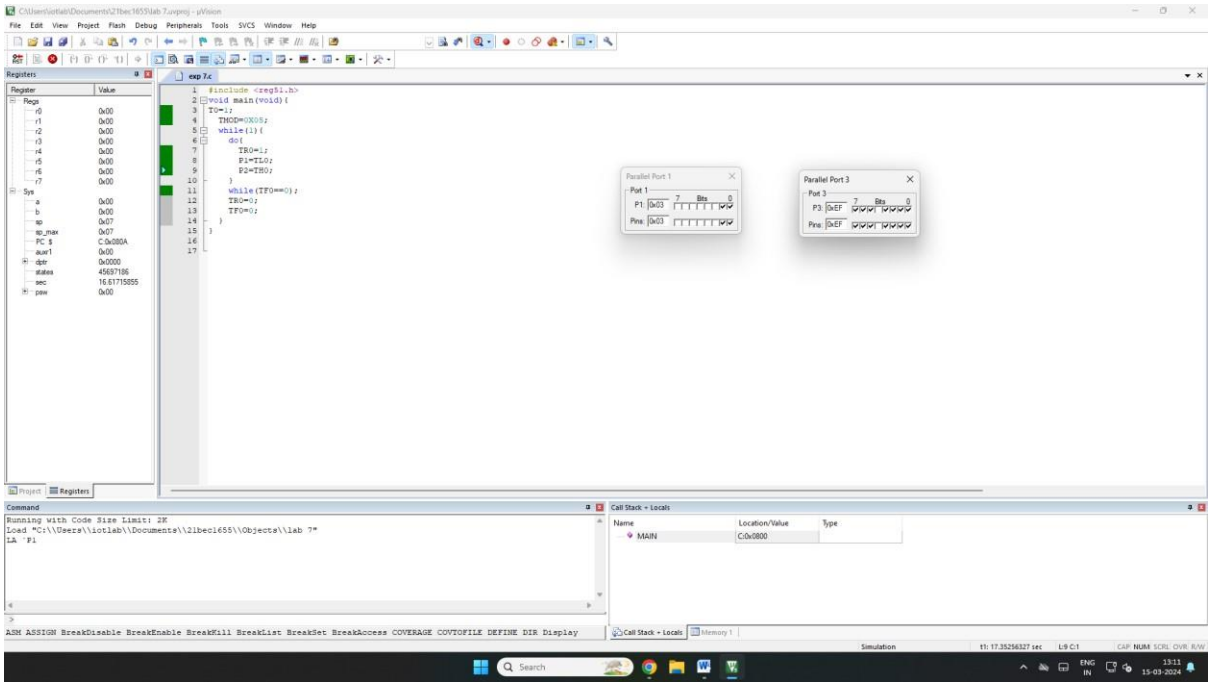


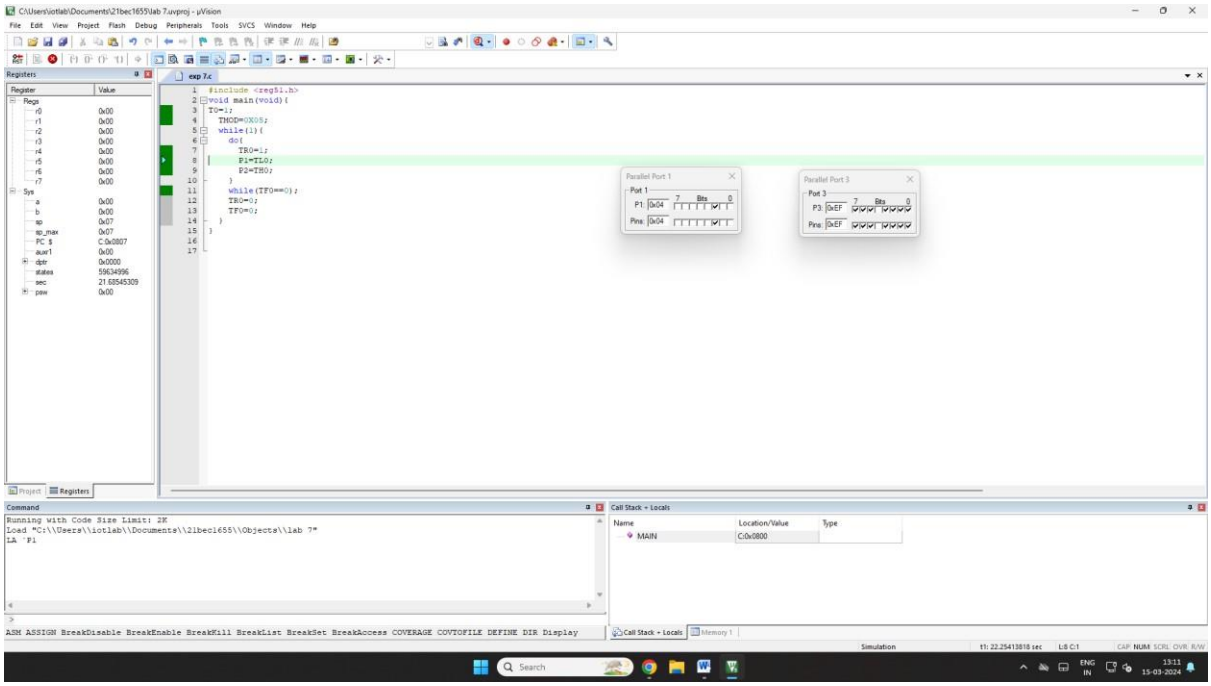




2. Assume that a 1-Hz external clock is being fed into pin T0(P3.4). Write a C program for counter 0 in mode 1 to count up and display the state of the TL0 and TH0 registers on P1 and P2, respectively.

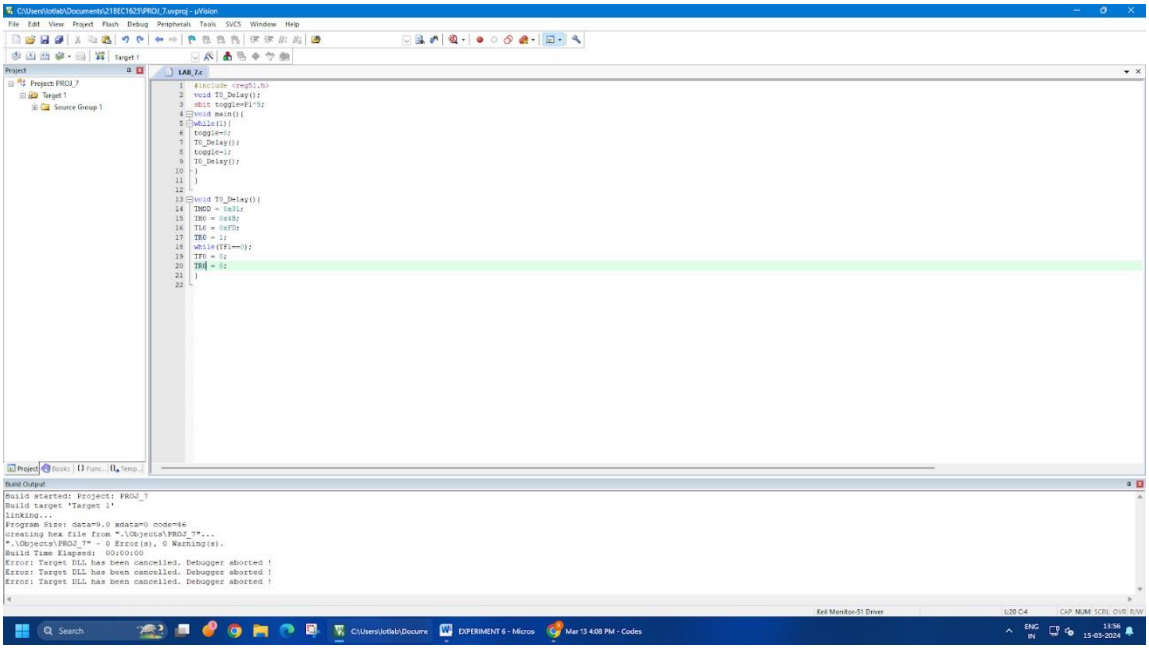



C:\Users\iotlab\Documents\21bec1655\lab 7.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
exp 7.c
#include <reg51.h>
void main(void){
T0=1;
TMOD=0X05;
while(1){
do{
TR0=1;
P1=TL0;
P2=TH0;
}
while(TF0==0);
TR0=0;
TF0=0;
}
}
Parallel Port 1
Port 1
P1: 0x03
Pins: 0x03
Parallel Port 3
Port 3
P3: 0xEF
Pins: 0xEF
Command
Running with Code Size Limit: 2K
Load "C:\\Users\\iotlab\\Documents\\21bec1655\\Objects\\lab 7"
LA `P1
Call Stack + Locals
Name
Location/Value
Type
MAIN
C:0x0800
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess COVERAGE COVTOFILE DEFINE DIR Display
Simulation
t1: 17.35256327 sec
L9 C:1
13:11
15-03-2024

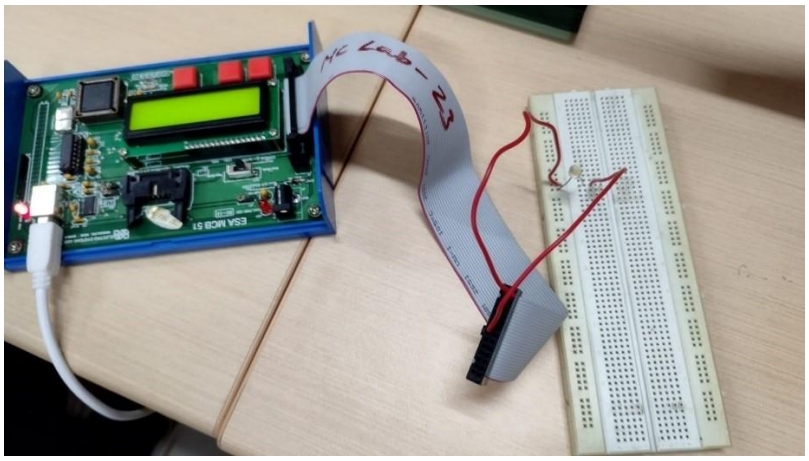

C:\Users\iotlab\Documents\21bec1655\lab 7.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
exp 7.c
#include <reg51.h>
void main(void){
T0=1;
TMOD=0X05;
while(1){
do{
TR0=1;
P1=TL0;
P2=TH0;
}
while(TF0==0);
TR0=0;
TF0=0;
}
}
Parallel Port 1
Port 1
P1: 0x04
Pins: 0x04
Parallel Port 3
Port 3
P3: 0xEF
Pins: 0xEF
Command
Running with Code Size Limit: 2K
Load "C:\\Users\\iotlab\\Documents\\21bec1655\\Objects\\lab 7"
LA `P1
Call Stack + Locals
Name
Location/Value
Type
MAIN
C:0x0800
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess COVERAGE COVTOFILE DEFINE DIR Display
Simulation
t1: 22.25413818 sec
L9 C:1
13:11
15-03-2024

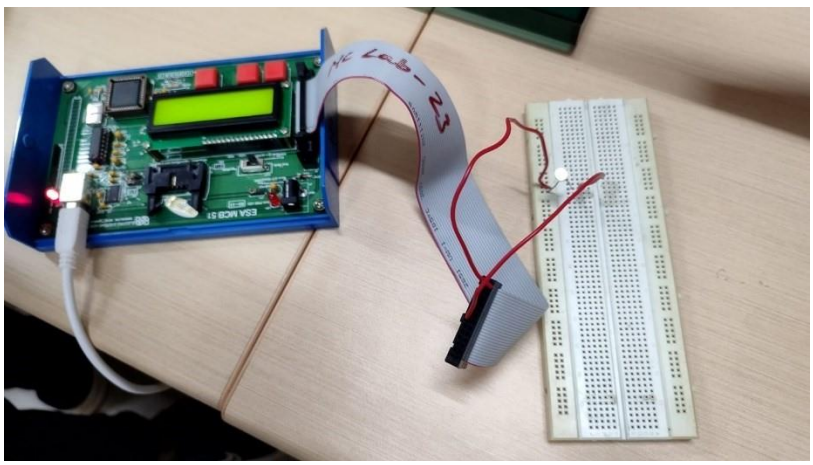
HARDWARE:

1. Write an 8051 C program to toggle port only bit p1.5 continuously every 50ms.



Output: The LED toggles.





RESULT:

Hence the programs on timer and counter has been done and verified.