MINI PROJECT

EMBEDDED SYSTEMS

ITE305

Submitted By:

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Submitted To:

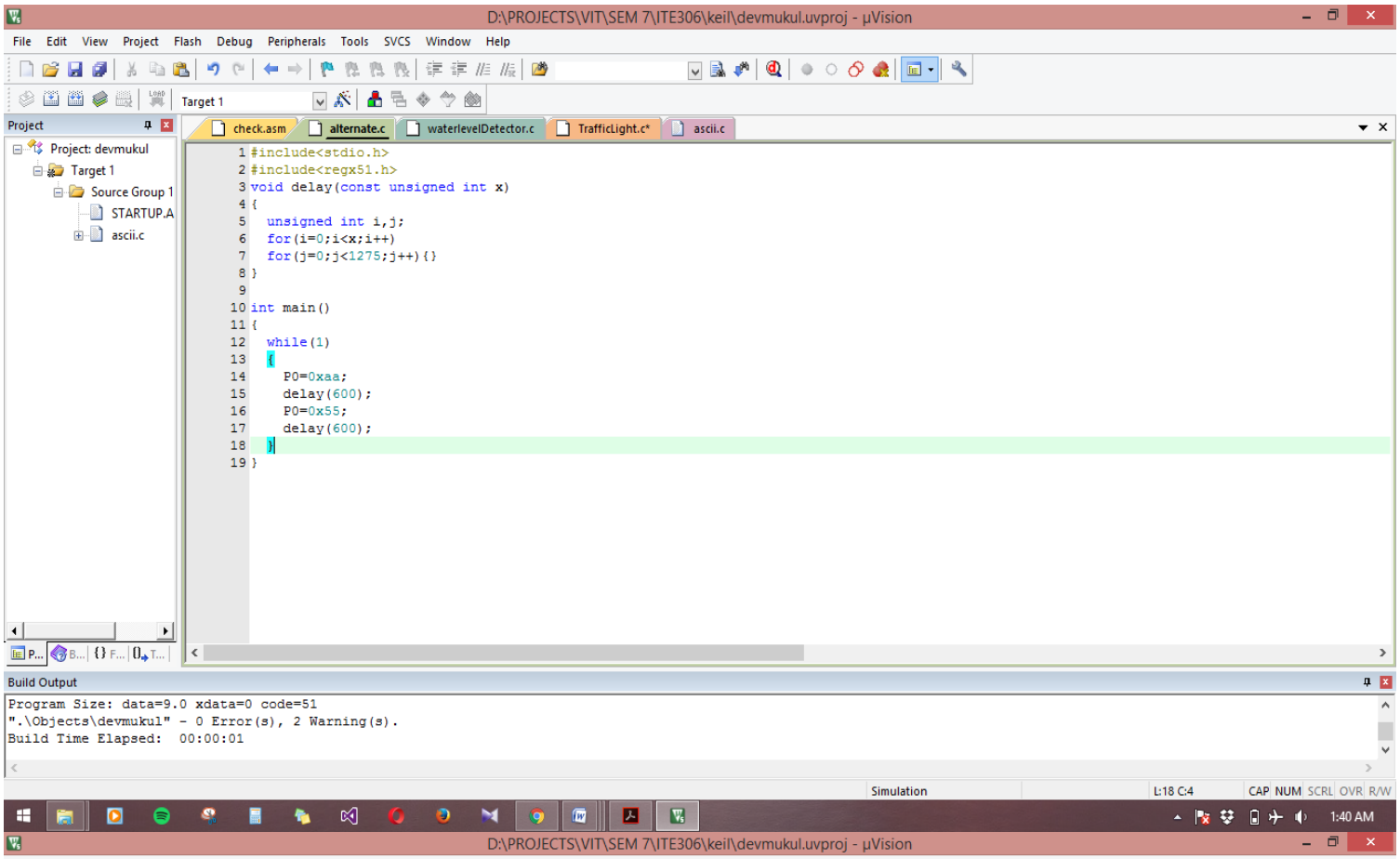
Dr. Balaji Raman

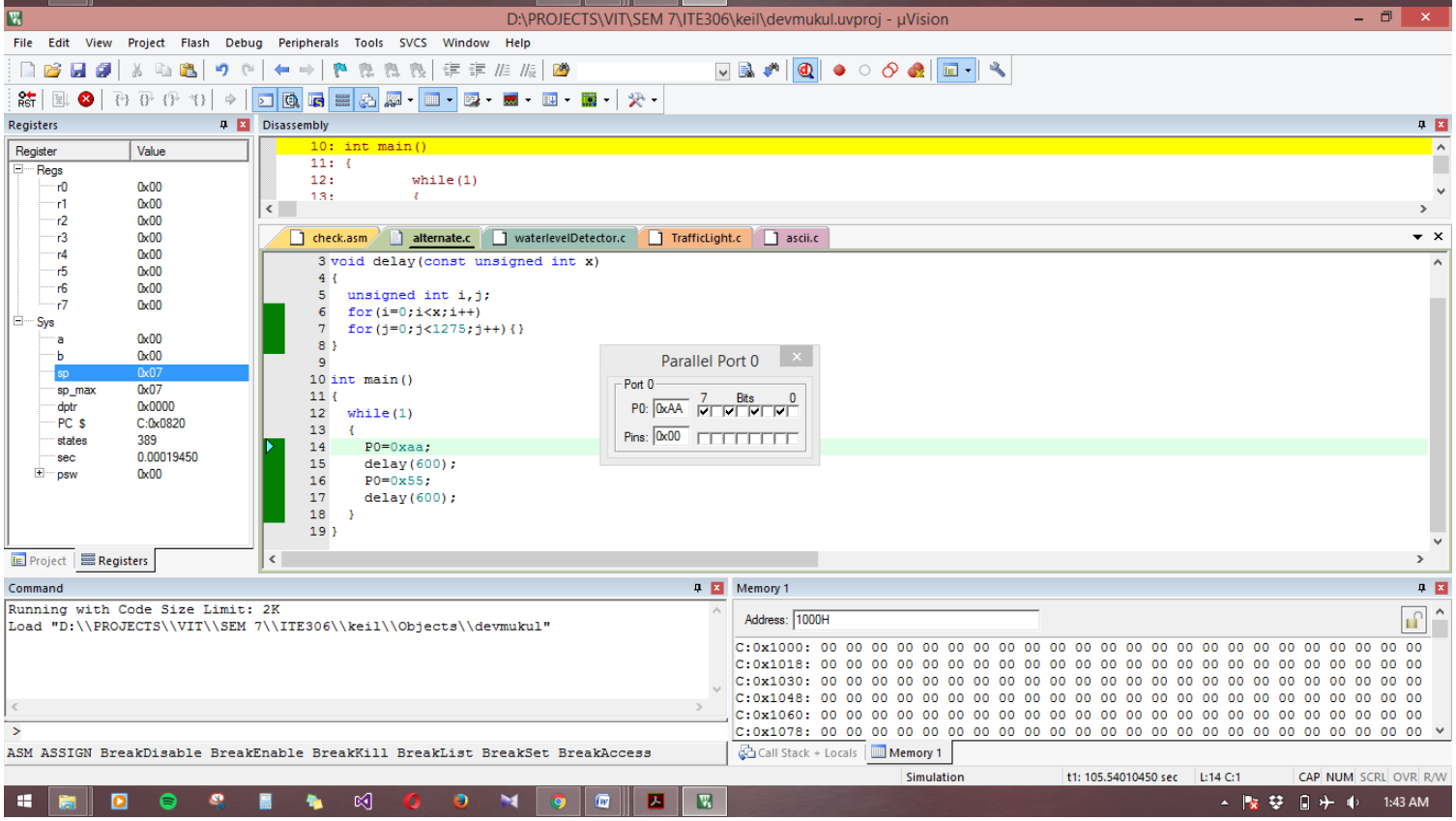
ITE305 Mentor

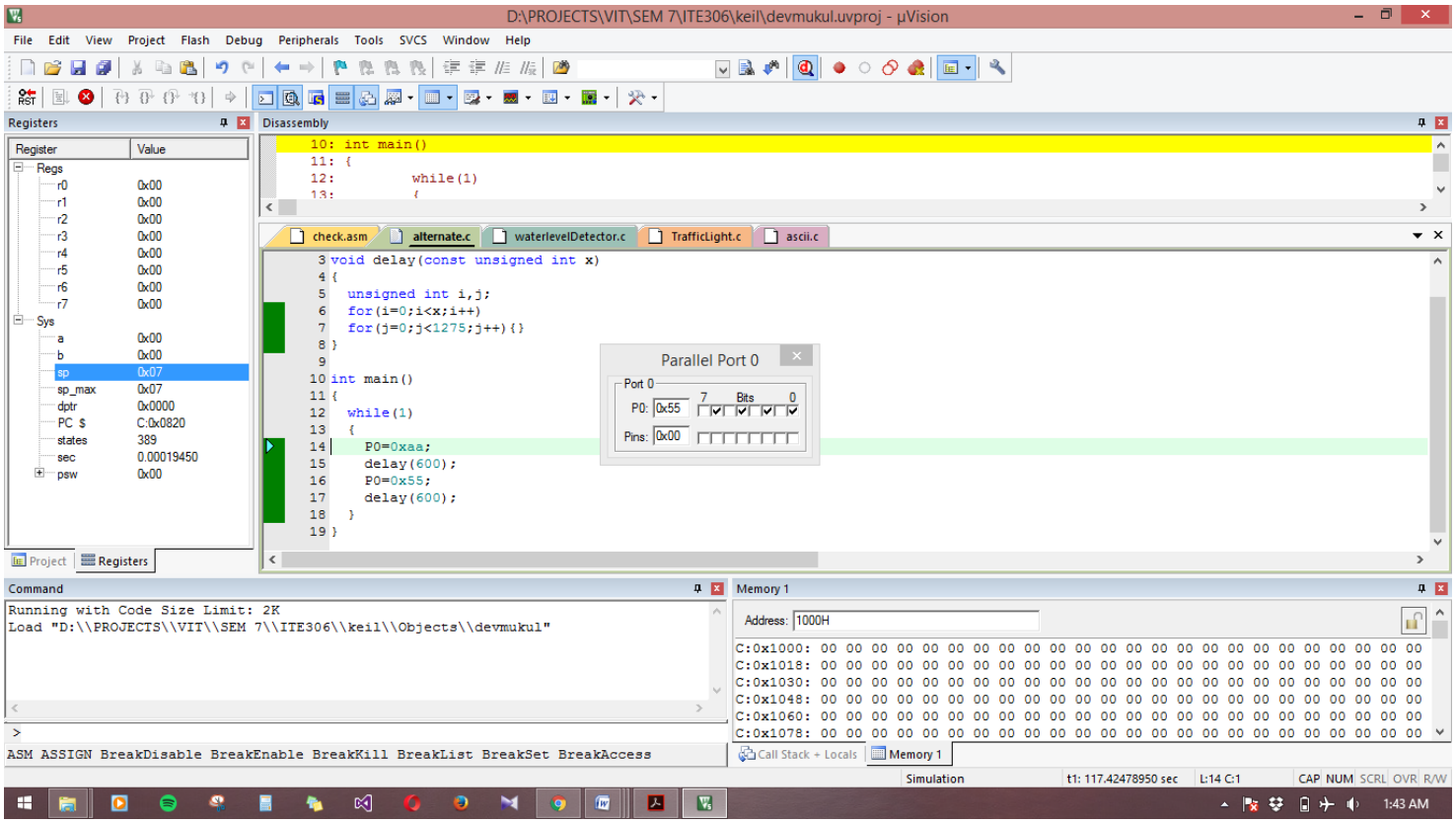
Embedded C program to toggle to alternate bits of port 1

```
#include<stdio.h>
#include<regx51.h>
void delay(const unsigned int x)
{
        unsigned int i,j;
        for(i=0;i<x;i++)
        for(j=0;j<1275;j++){}
}

int main()
{
        while(1)
        {
                P0=0xaa;
                delay(600);
                P0=0x55;
                delay(600);
        }
}
```


D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Target 1
Project
Project: devmukul
Target 1
Source Group 1
STARTUP.A
ascii.c
check.asm
alternate.c
waterlevelDetector.c
TrafficLight.c*
ascii.c
1 #include<stdio.h>
2 #include<regx51.h>
3 void delay(const unsigned int x)
4 {
5 unsigned int i,j;
6 for(i=0;i<x;i++)
7 for(j=0;j<1275;j++){}
8 }
9
10 int main()
11 {
12 while(1)
13 {
14 P0=0xaa;
15 delay(600);
16 P0=0x55;
17 delay(600);
18 }
19 }
Build Output
Program Size: data=9.0 xdata=0 code=51
".\Objects\devmukul" - 0 Error(s), 2 Warning(s).
Build Time Elapsed: 00:00:01
Simulation
L:18 C:4
CAP NUM SCRL OVR R/W
1:40 AM

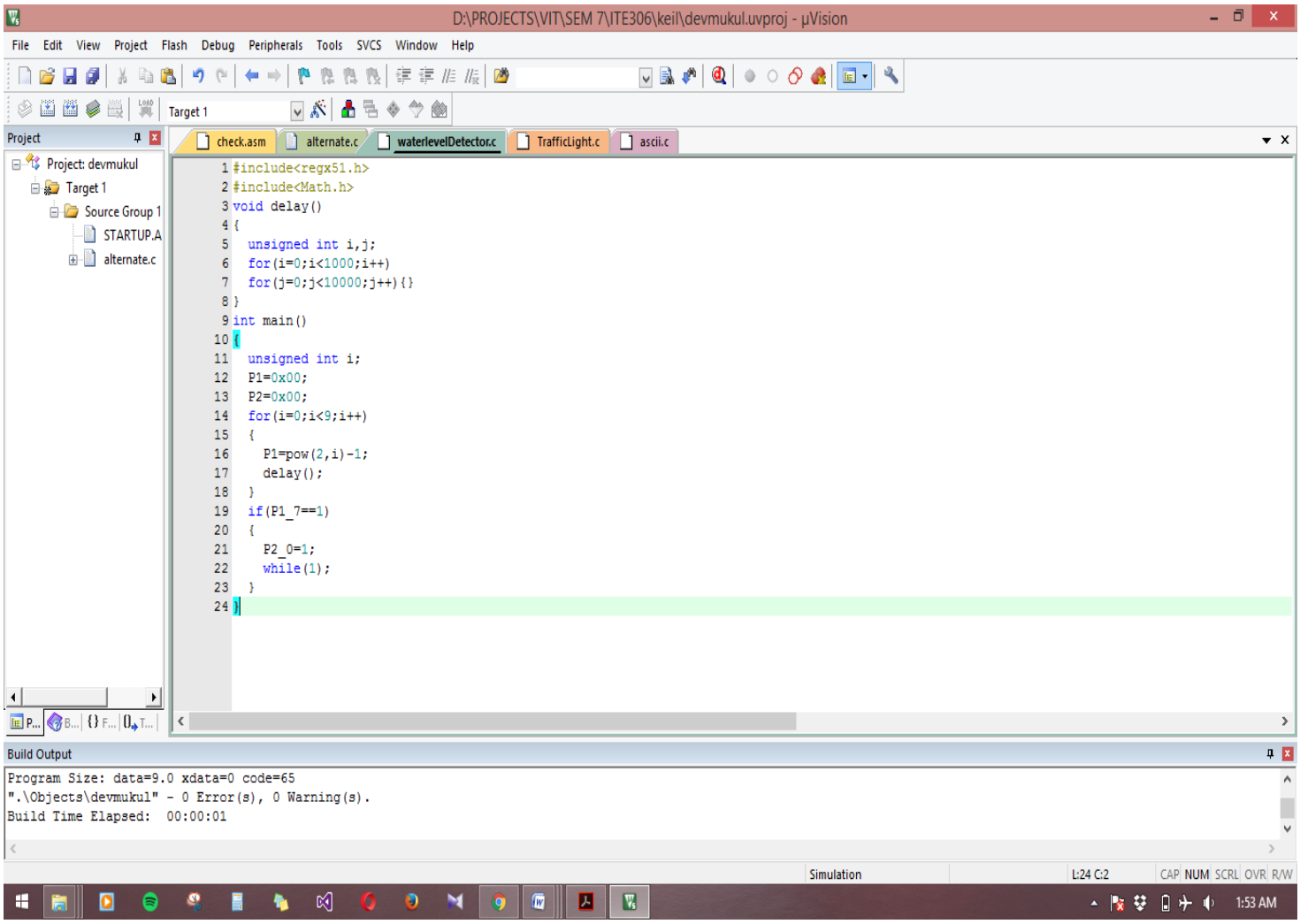

D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x07
sp_max 0x07
dptr 0x0000
PC $ C:0x0820
states 389
sec 0.00019450
psw 0x00
Disassembly
10: int main()
11: {
12: while(1)
check.asm
alternate.c
waterlevelDetector.c
TrafficLight.c
ascii.c
3 void delay(const unsigned int x)
4 {
5 unsigned int i,j;
6 for(i=0;i<x;i++)
7 for(j=0;j<1275;j++){}
8 }
9
10 int main()
11 {
12 while(1)
13 {
14 P0=0xaa;
15 delay(600);
16 P0=0x55;
17 delay(600);
18 }
19 }
Parallel Port 0
Port 0
P0: 0xAA 7 Bits 0
Pins: 0x00
Project Registers
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals
Memory 1
Simulation
t1: 105.54010450 sec
L:14 C:1
CAP NUM SCRL OVR R/W
1:43 AM

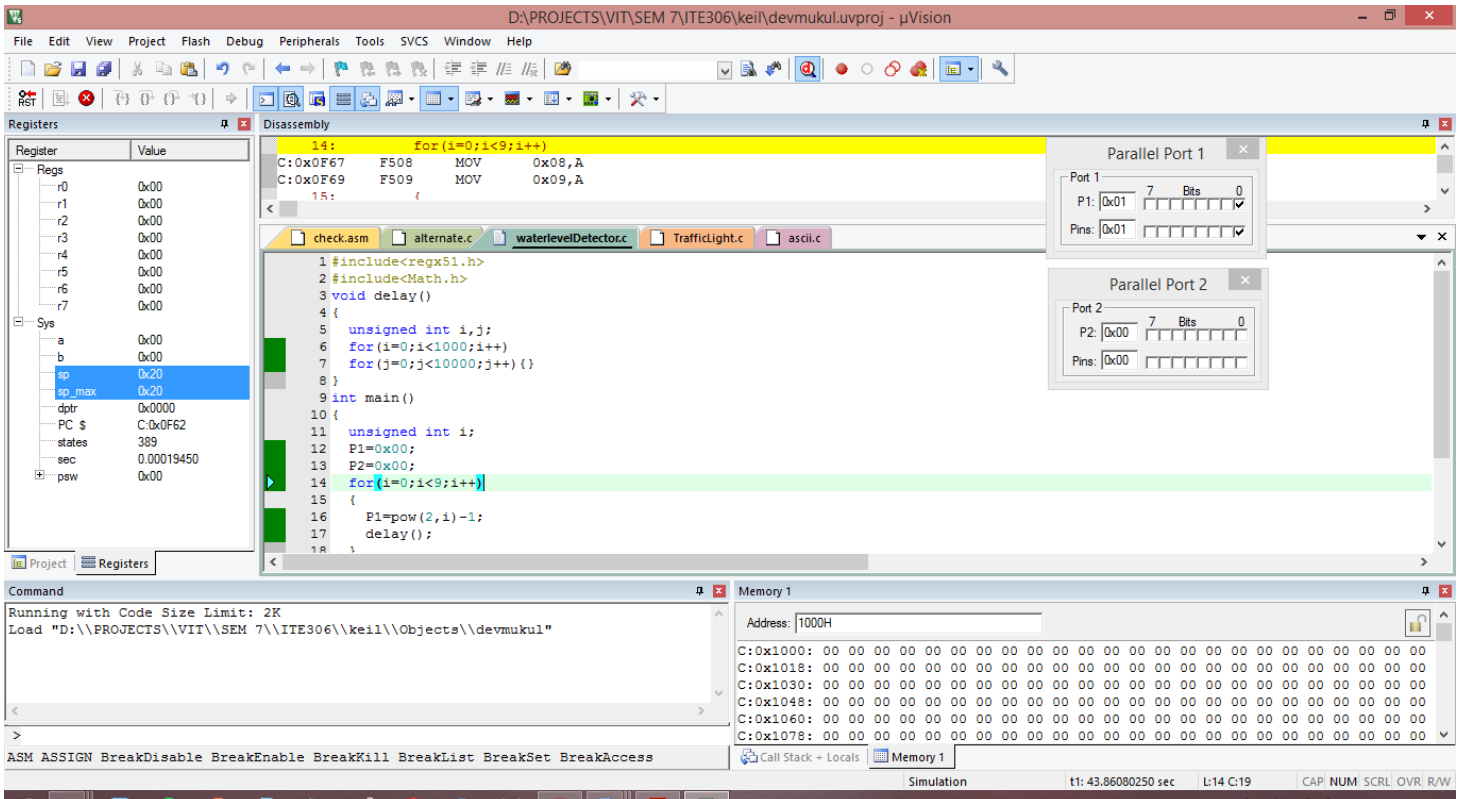


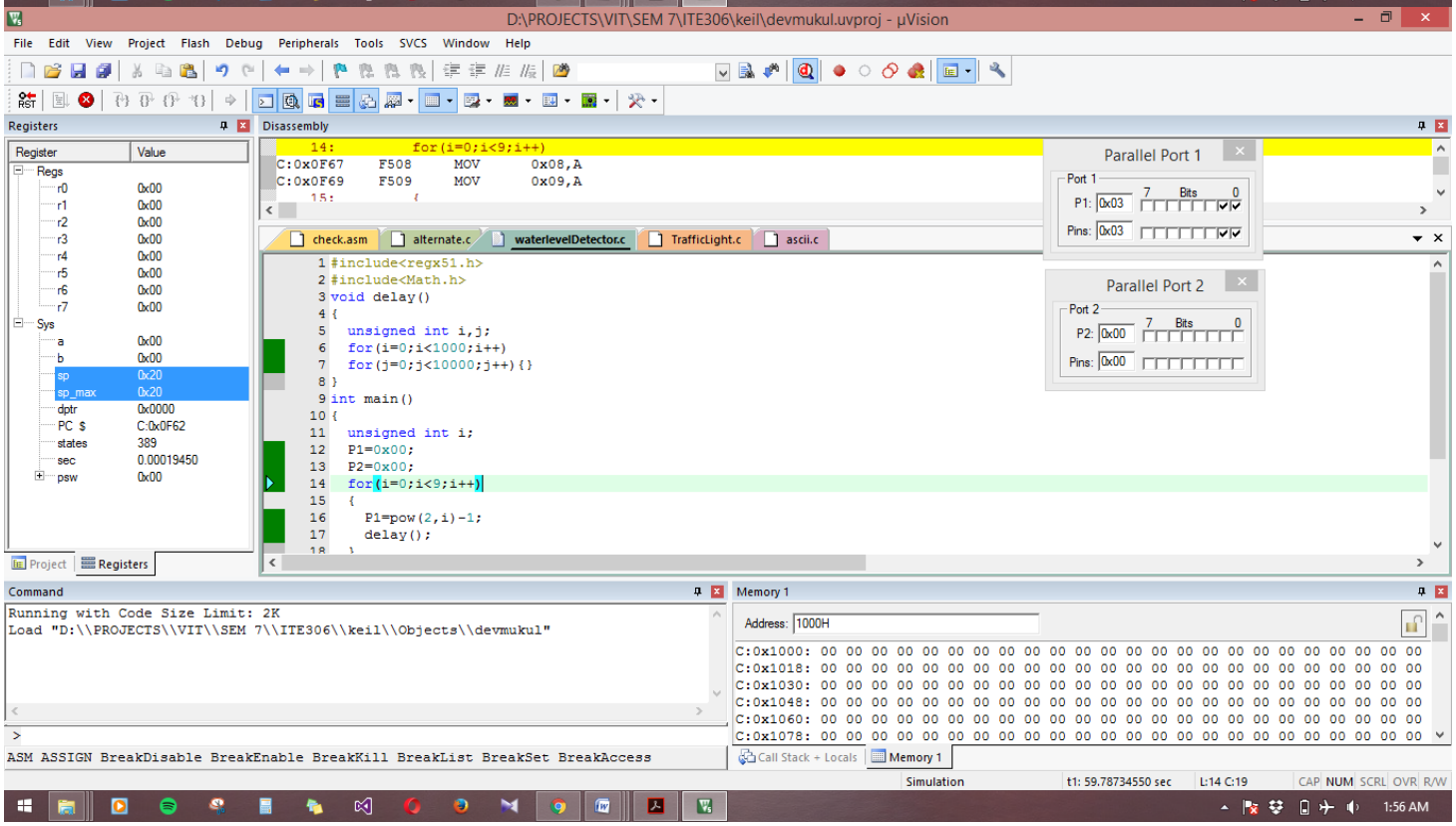
Embedded C program to implement Water-Level Detector

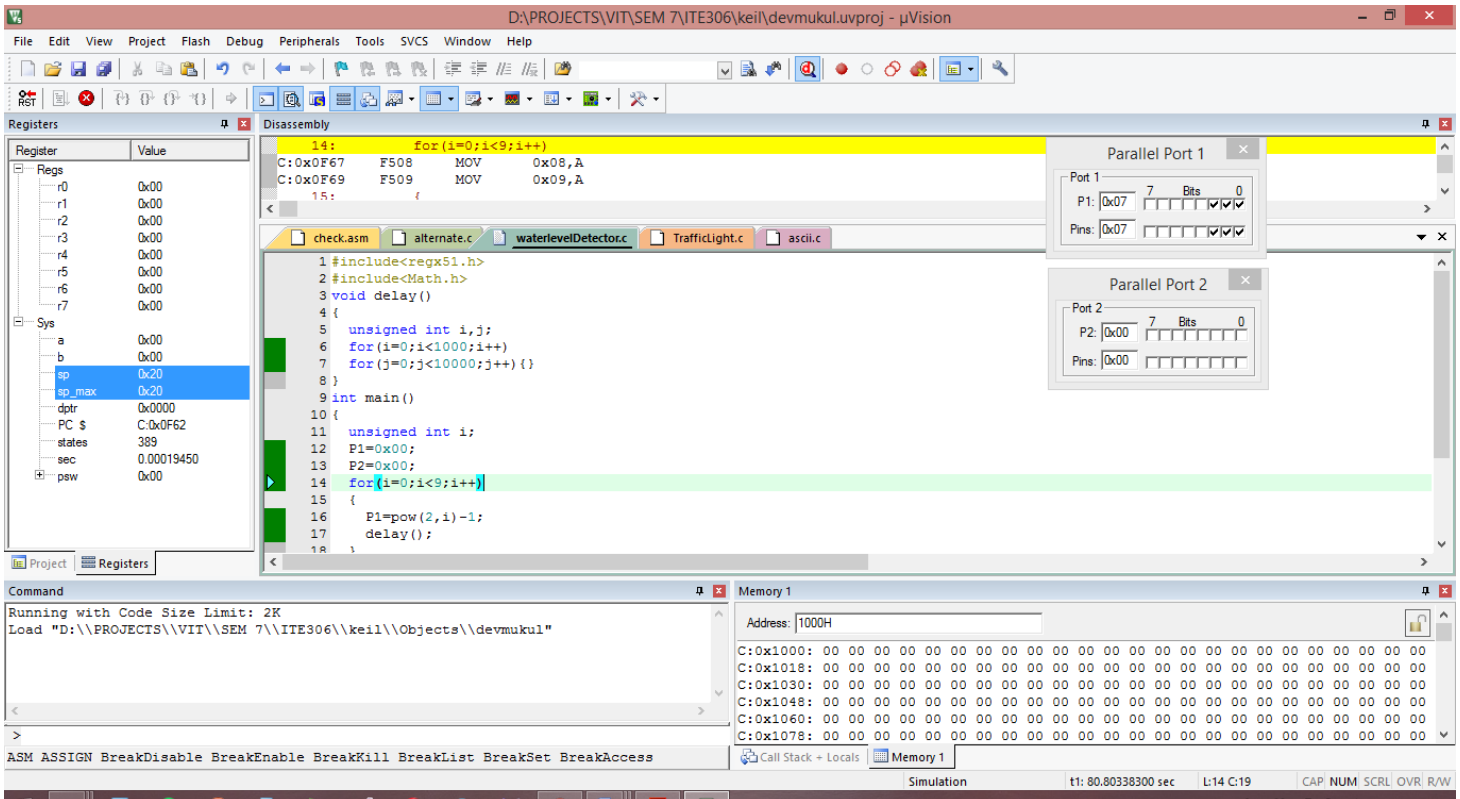
```
#include<regx51.h>
#include<Math.h>
void delay()
{
        unsigned int i,j;
        for(i=0;i<1000;i++)
        for(j=0;j<10000;j++){}
}
int main()
{
        unsigned int i;
```

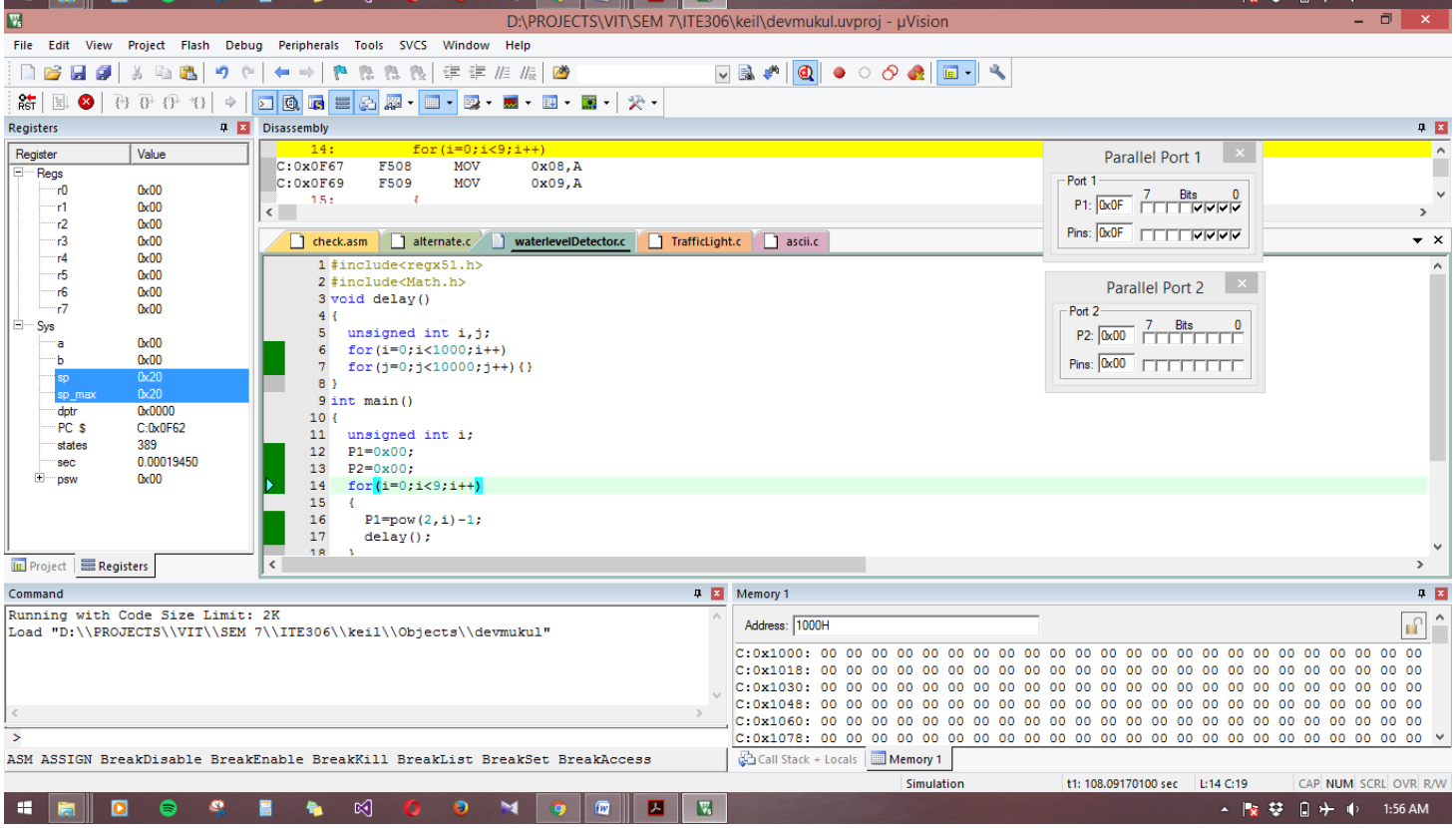
```
        P1=0x00;
        P2=0x00;
        for(i=0;i<9;i++)
        {
                P1=pow(2,i)-1;
                delay();
        }
        if(P1_7==1)
        {
                P2_0=1;
                while(1);
        }
}
```

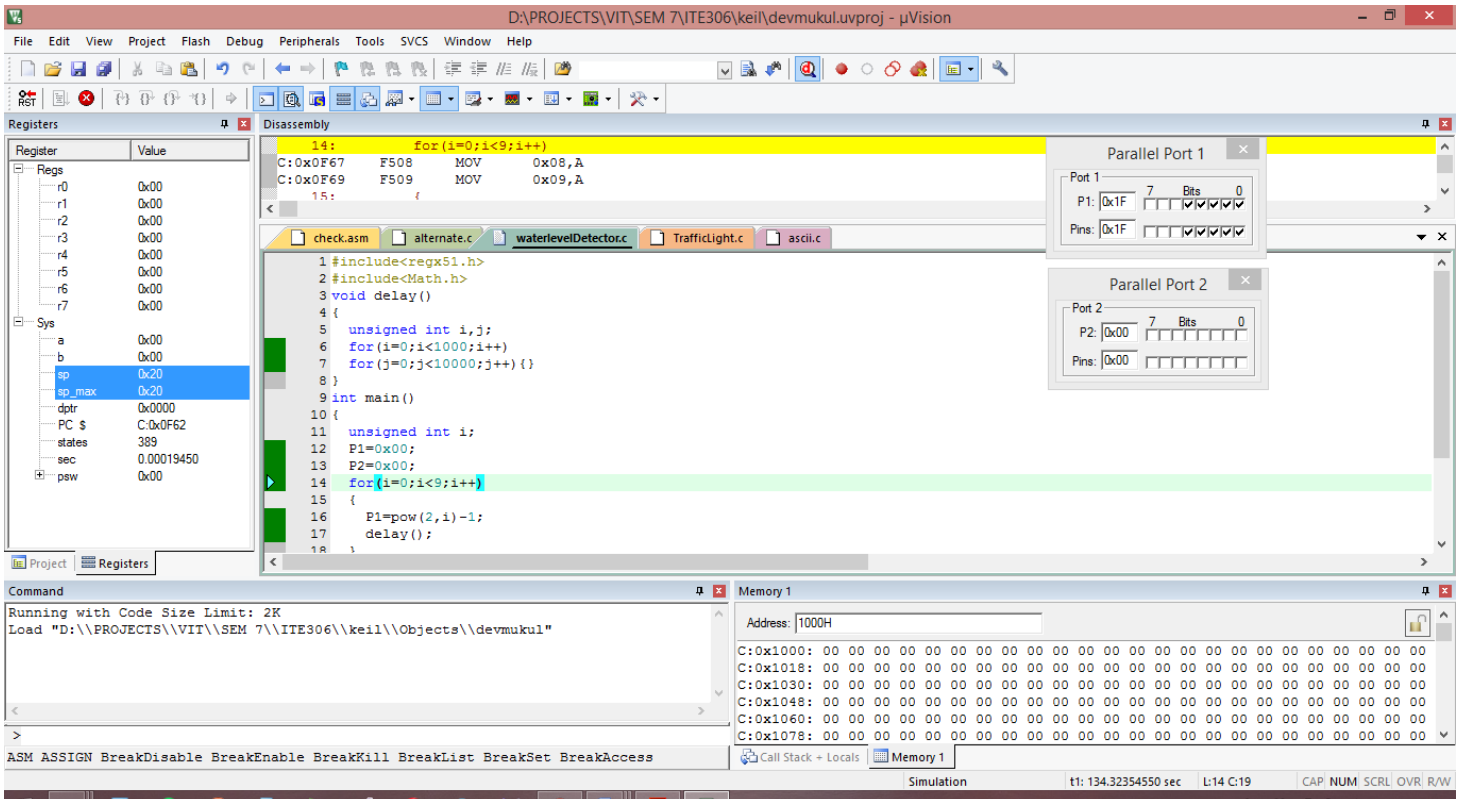


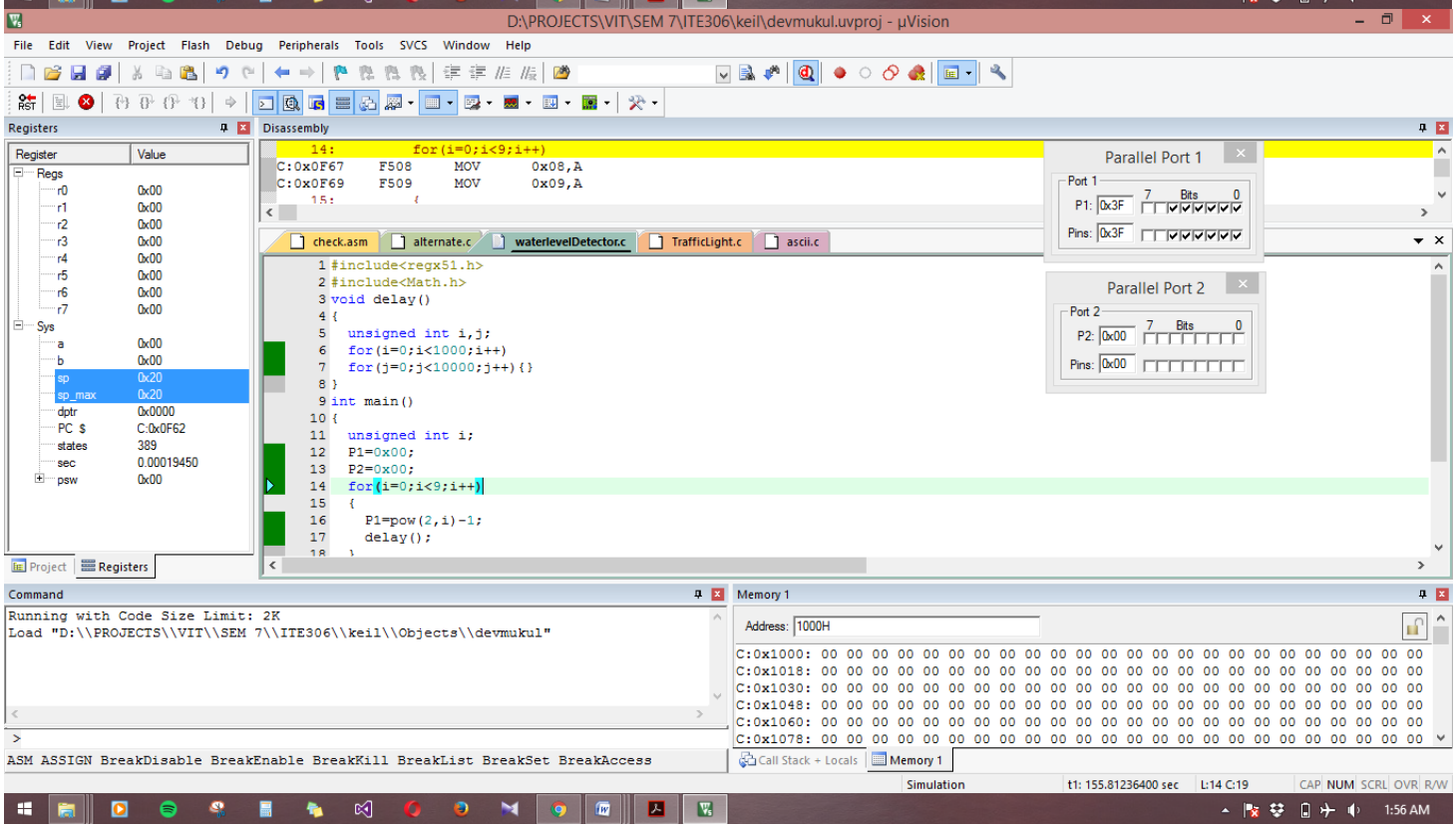

D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x20
sp_max 0x20
dptr 0x0000
PC $ C:0x0F62
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
14: for(i=0;i<9;i++)
C:0x0F67 F508 MOV 0x08,A
C:0x0F69 F509 MOV 0x09,A
15: {
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
1 #include<regx51.h>
2 #include<Math.h>
3 void delay()
4 {
5 unsigned int i,j;
6 for(i=0;i<1000;i++)
7 for(j=0;j<10000;j++){}
8 }
9 int main()
10 {
11 unsigned int i;
12 P1=0x00;
13 P2=0x00;
14 for(i=0;i<9;i++)
15 {
16 P1=pow(2,i)-1;
17 delay();
Parallel Port 1
Port 1
P1: 0x01
7 Bits 0
Pins: 0x01
Parallel Port 2
Port 2
P2: 0x00
7 Bits 0
Pins: 0x00
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 43.86080250 sec L:14 C:19 CAP NUM SCRL OVR R/W
1:56 AM

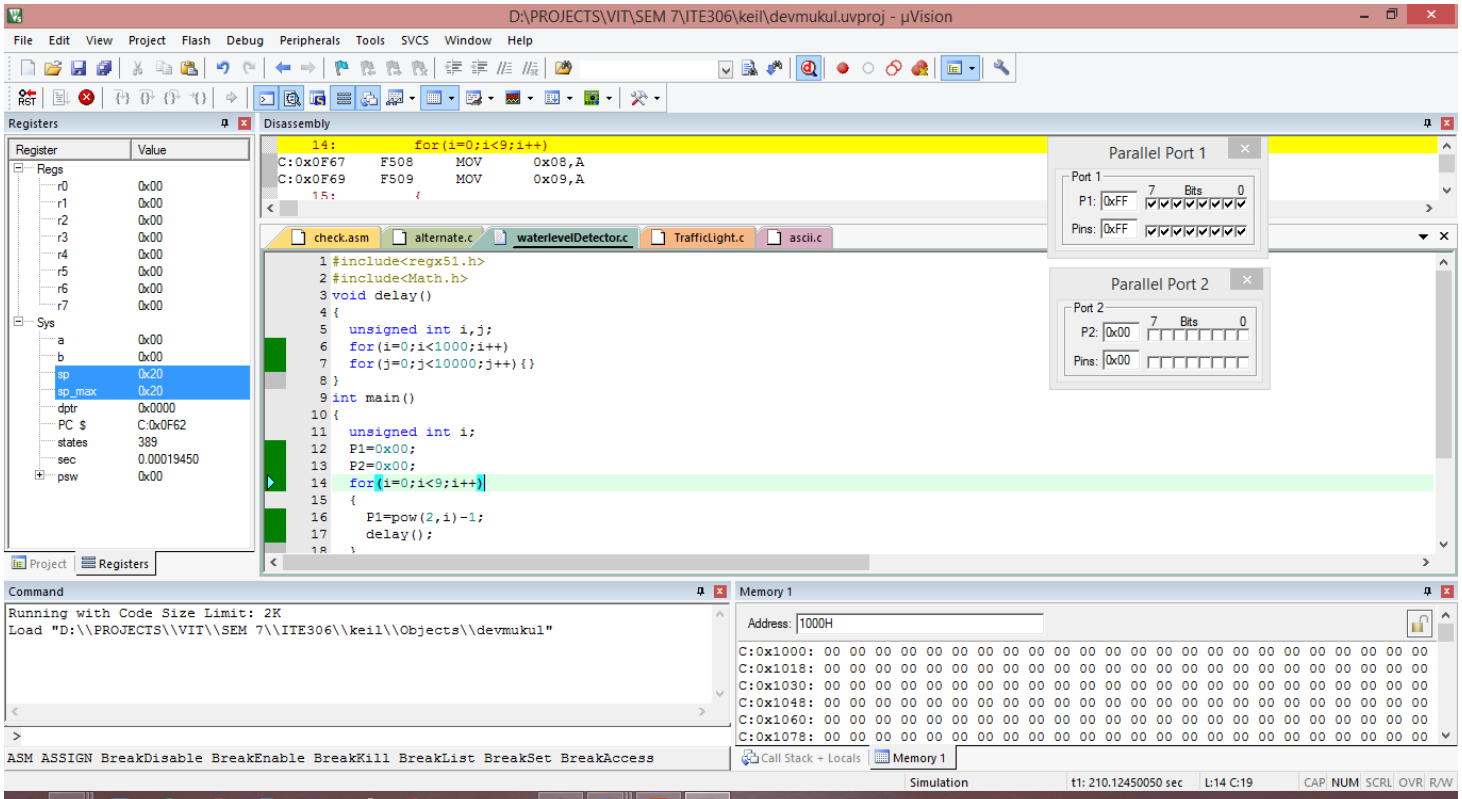

D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x20
sp_max 0x20
dptr 0x0000
PC $ C:0x0F62
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
14: for(i=0;i<9;i++)
C:0x0F67 F508 MOV 0x08,A
C:0x0F69 F509 MOV 0x09,A
15: {
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
1 #include<regx51.h>
2 #include<Math.h>
3 void delay()
4 {
5 unsigned int i,j;
6 for(i=0;i<1000;i++)
7 for(j=0;j<10000;j++){}
8 }
9 int main()
10 {
11 unsigned int i;
12 P1=0x00;
13 P2=0x00;
14 for(i=0;i<9;i++)
15 {
16 P1=pow(2,i)-1;
17 delay();
Parallel Port 1
Port 1
P1: 0x03
7 Bits 0
Pins: 0x03
Parallel Port 2
Port 2
P2: 0x00
7 Bits 0
Pins: 0x00
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 59.78734550 sec L:14 C:19 CAP NUM SCRL OVR R/W
1:56 AM

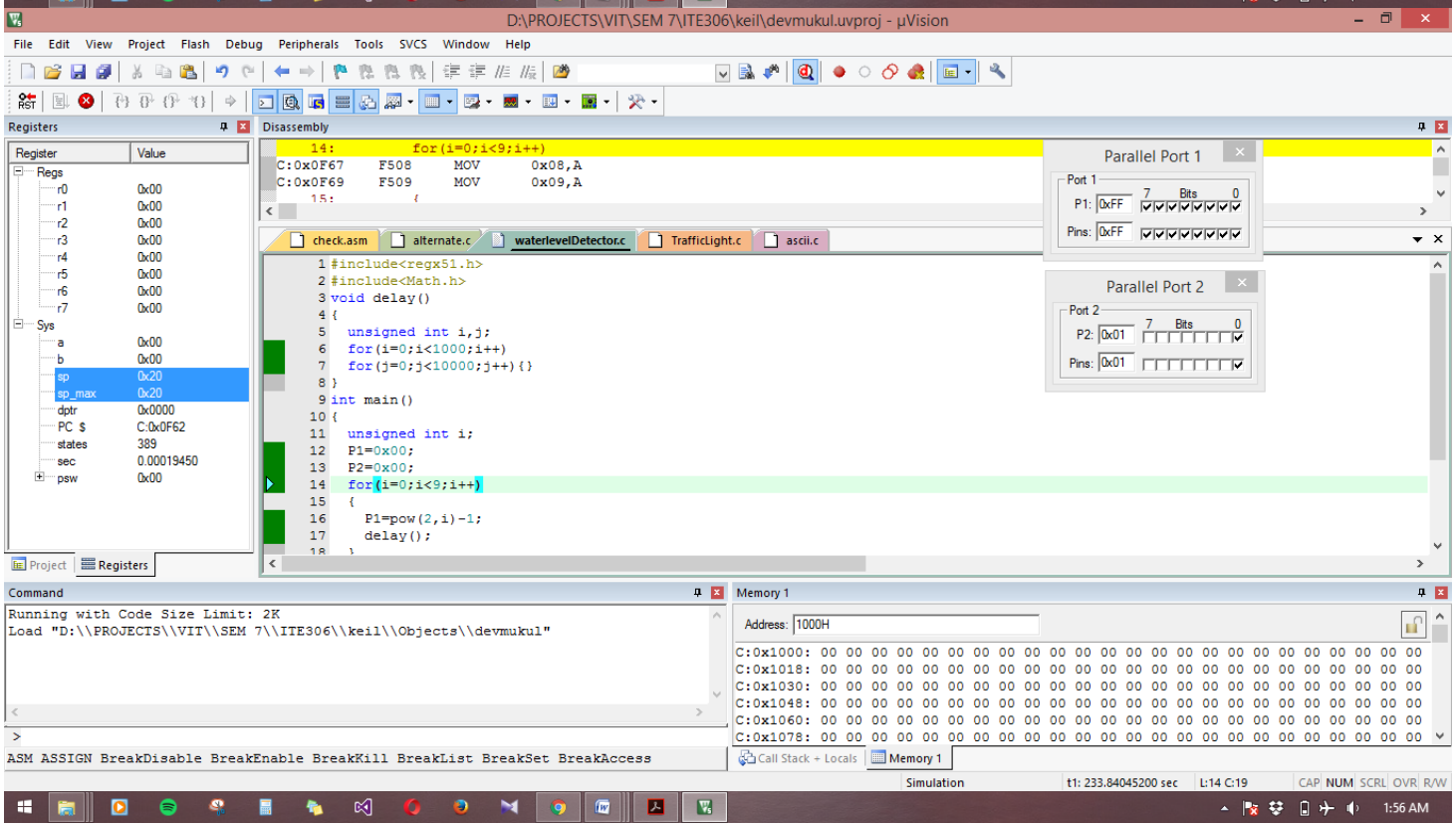

D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x20
sp_max 0x20
dptr 0x0000
PC $ C:0x0F62
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
14: for(i=0;i<9;i++)
C:0x0F67 F508 MOV 0x08,A
C:0x0F69 F509 MOV 0x09,A
15: {
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
1 #include<regx51.h>
2 #include<Math.h>
3 void delay()
4 {
5 unsigned int i,j;
6 for(i=0;i<1000;i++)
7 for(j=0;j<10000;j++){}
8 }
9 int main()
10 {
11 unsigned int i;
12 P1=0x00;
13 P2=0x00;
14 for(i=0;i<9;i++)
15 {
16 P1=pow(2,i)-1;
17 delay();
Parallel Port 1
Port 1
P1: 0x07
7 Bits 0
Pins: 0x07
Parallel Port 2
Port 2
P2: 0x00
7 Bits 0
Pins: 0x00
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 80.80338300 sec L:14 C:19 CAP NUM SCRL OVR R/W
1:56 AM


D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x20
sp_max 0x20
dptr 0x0000
PC $ C:0x0F62
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
14: for(i=0;i<9;i++)
C:0x0F67 F508 MOV 0x08,A
C:0x0F69 F509 MOV 0x09,A
15: {
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
1 #include<regx51.h>
2 #include<Math.h>
3 void delay()
4 {
5 unsigned int i,j;
6 for(i=0;i<1000;i++)
7 for(j=0;j<10000;j++){}
8 }
9 int main()
10 {
11 unsigned int i;
12 P1=0x00;
13 P2=0x00;
14 for(i=0;i<9;i++)
15 {
16 P1=pow(2,i)-1;
17 delay();
Parallel Port 1
Port 1
P1: 0x0F
7 Bits 0
Pins: 0x0F
Parallel Port 2
Port 2
P2: 0x00
7 Bits 0
Pins: 0x00
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 108.09170100 sec L:14 C:19 CAP NUM SCRL OVR R/W
1:56 AM


D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x20
sp_max 0x20
dptr 0x0000
PC $ C:0x0F62
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
14: for(i=0;i<9;i++)
C:0x0F67 F508 MOV 0x08,A
C:0x0F69 F509 MOV 0x09,A
15: {
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
1 #include<regx51.h>
2 #include<Math.h>
3 void delay()
4 {
5 unsigned int i,j;
6 for(i=0;i<1000;i++)
7 for(j=0;j<10000;j++){}
8 }
9 int main()
10 {
11 unsigned int i;
12 P1=0x00;
13 P2=0x00;
14 for(i=0;i<9;i++)
15 {
16 P1=pow(2,i)-1;
17 delay();
Parallel Port 1
Port 1
P1: 0x1F
Pins: 0x1F
7 Bits 0
Parallel Port 2
Port 2
P2: 0x00
Pins: 0x00
7 Bits 0
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 134.32354550 sec L:14 C:19
CAP NUM SCRL OVR R/W
1:56 AM


D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x20
sp_max 0x20
dptr 0x0000
PC $ C:0x0F62
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
14: for(i=0;i<9;i++)
C:0x0F67 F508 MOV 0x08,A
C:0x0F69 F509 MOV 0x09,A
15: {
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
1 #include<regx51.h>
2 #include<Math.h>
3 void delay()
4 {
5 unsigned int i,j;
6 for(i=0;i<1000;i++)
7 for(j=0;j<10000;j++){}
8 }
9 int main()
10 {
11 unsigned int i;
12 P1=0x00;
13 P2=0x00;
14 for(i=0;i<9;i++)
15 {
16 P1=pow(2,i)-1;
17 delay();
Parallel Port 1
Port 1
P1: 0x3F
Pins: 0x3F
7 Bits 0
Parallel Port 2
Port 2
P2: 0x00
Pins: 0x00
7 Bits 0
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 155.81236400 sec L:14 C:19
CAP NUM SCRL OVR R/W
1:56 AM

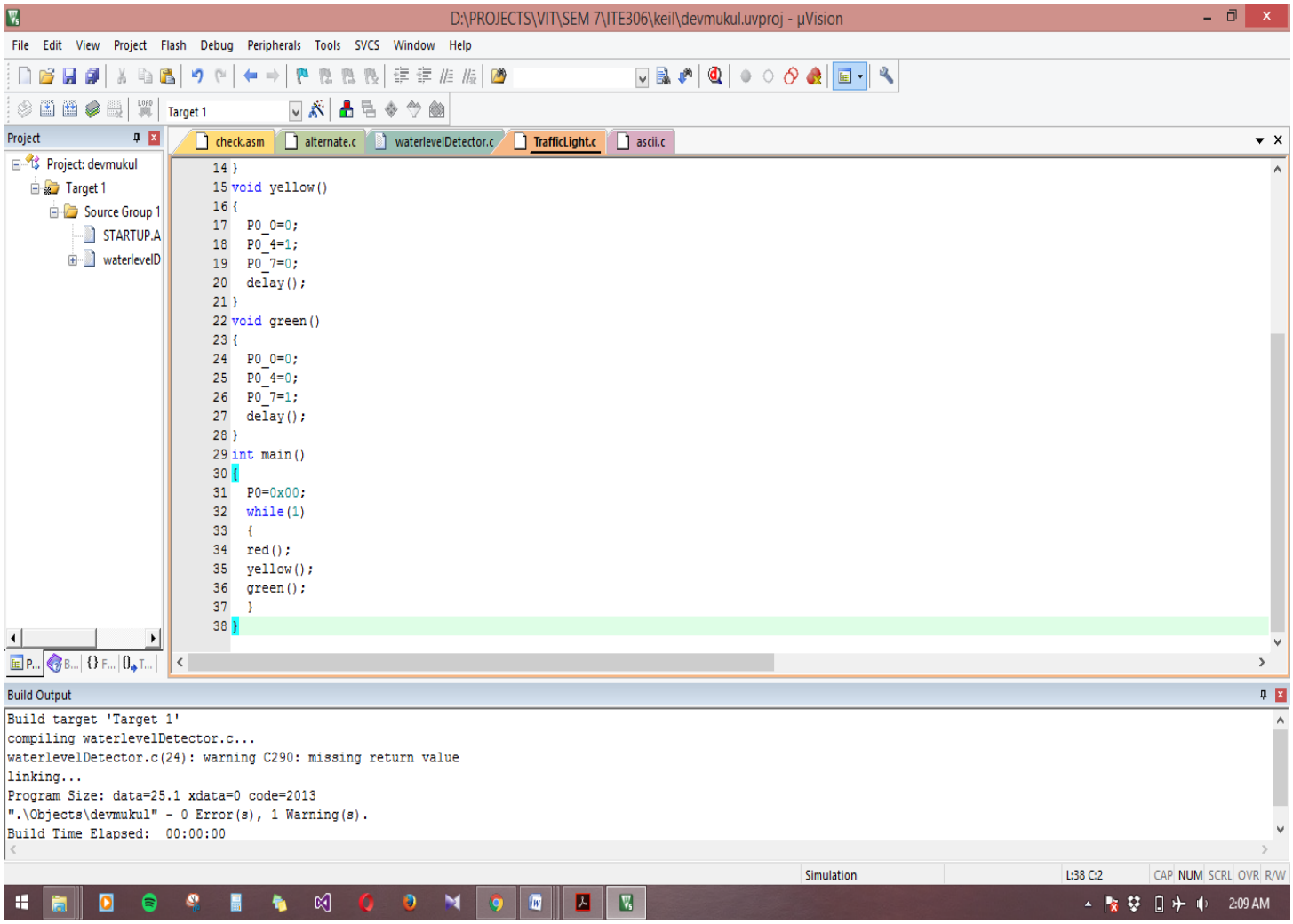

D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x20
sp_max 0x20
dptr 0x0000
PC $ C:0x0F62
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
14: for(i=0;i<9;i++)
C:0x0F67 F508 MOV 0x08,A
C:0x0F69 F509 MOV 0x09,A
15: {
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
1 #include<regx51.h>
2 #include<Math.h>
3 void delay()
4 {
5 unsigned int i,j;
6 for(i=0;i<1000;i++)
7 for(j=0;j<10000;j++){}
8 }
9 int main()
10 {
11 unsigned int i;
12 P1=0x00;
13 P2=0x00;
14 for(i=0;i<9;i++)
15 {
16 P1=pow(2,i)-1;
17 delay();
Parallel Port 1
Port 1
P1: 0xFF
7 Bits 0
Pins: 0xFF
Parallel Port 2
Port 2
P2: 0x00
7 Bits 0
Pins: 0x00
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 210.12450050 sec L:14 C:19
CAP NUM SCRL OVR R/W
1:56 AM

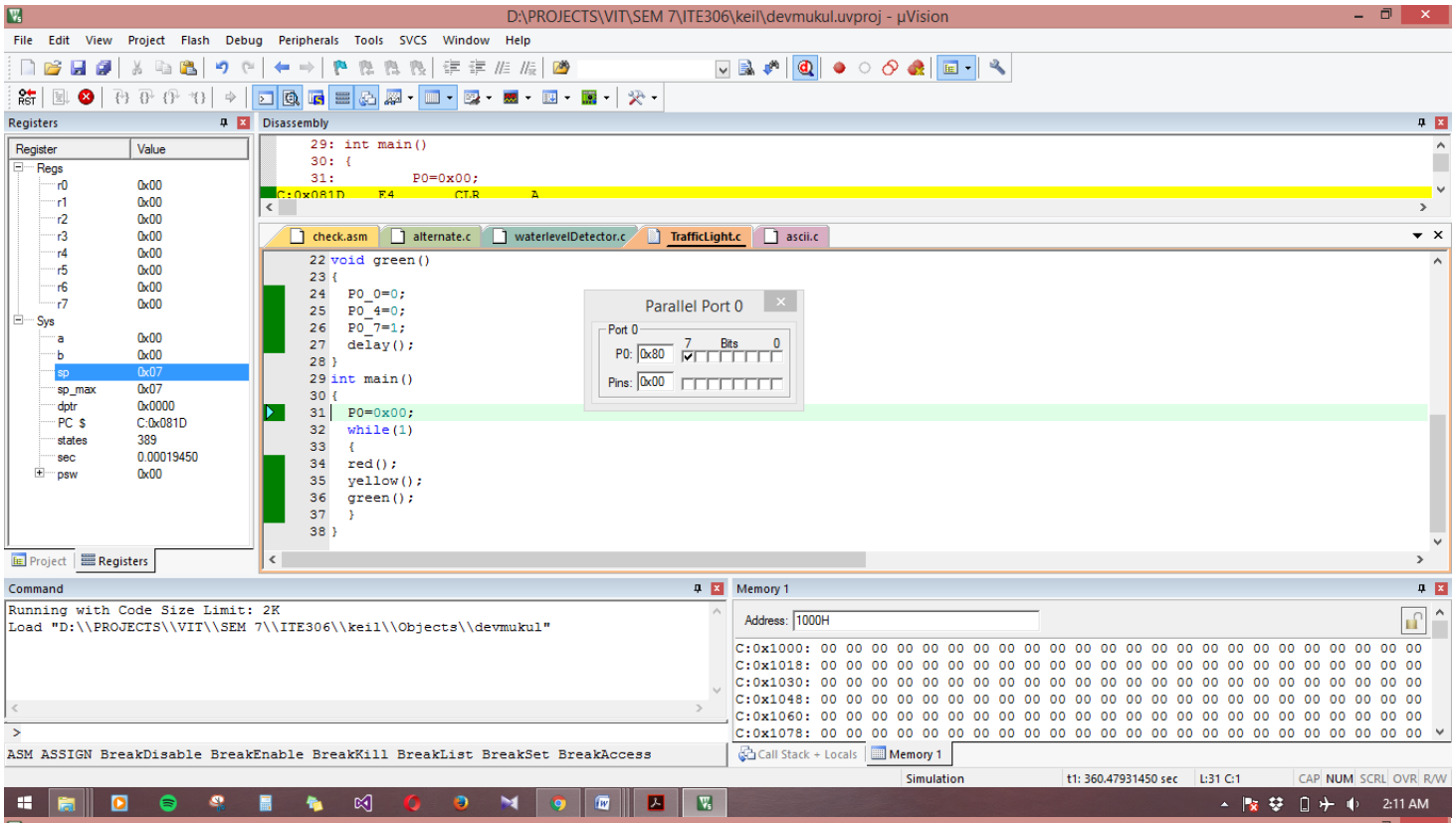

D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x20
sp_max 0x20
dptr 0x0000
PC $ C:0x0F62
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
14: for(i=0;i<9;i++)
C:0x0F67 F508 MOV 0x08,A
C:0x0F69 F509 MOV 0x09,A
15: {
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
1 #include<regx51.h>
2 #include<Math.h>
3 void delay()
4 {
5 unsigned int i,j;
6 for(i=0;i<1000;i++)
7 for(j=0;j<10000;j++){}
8 }
9 int main()
10 {
11 unsigned int i;
12 P1=0x00;
13 P2=0x00;
14 for(i=0;i<9;i++)
15 {
16 P1=pow(2,i)-1;
17 delay();
Parallel Port 1
Port 1
P1: 0xFF
7 Bits 0
Pins: 0xFF
Parallel Port 2
Port 2
P2: 0x01
7 Bits 0
Pins: 0x01
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 233.84045200 sec L:14 C:19
CAP NUM SCRL OVR R/W
1:56 AM

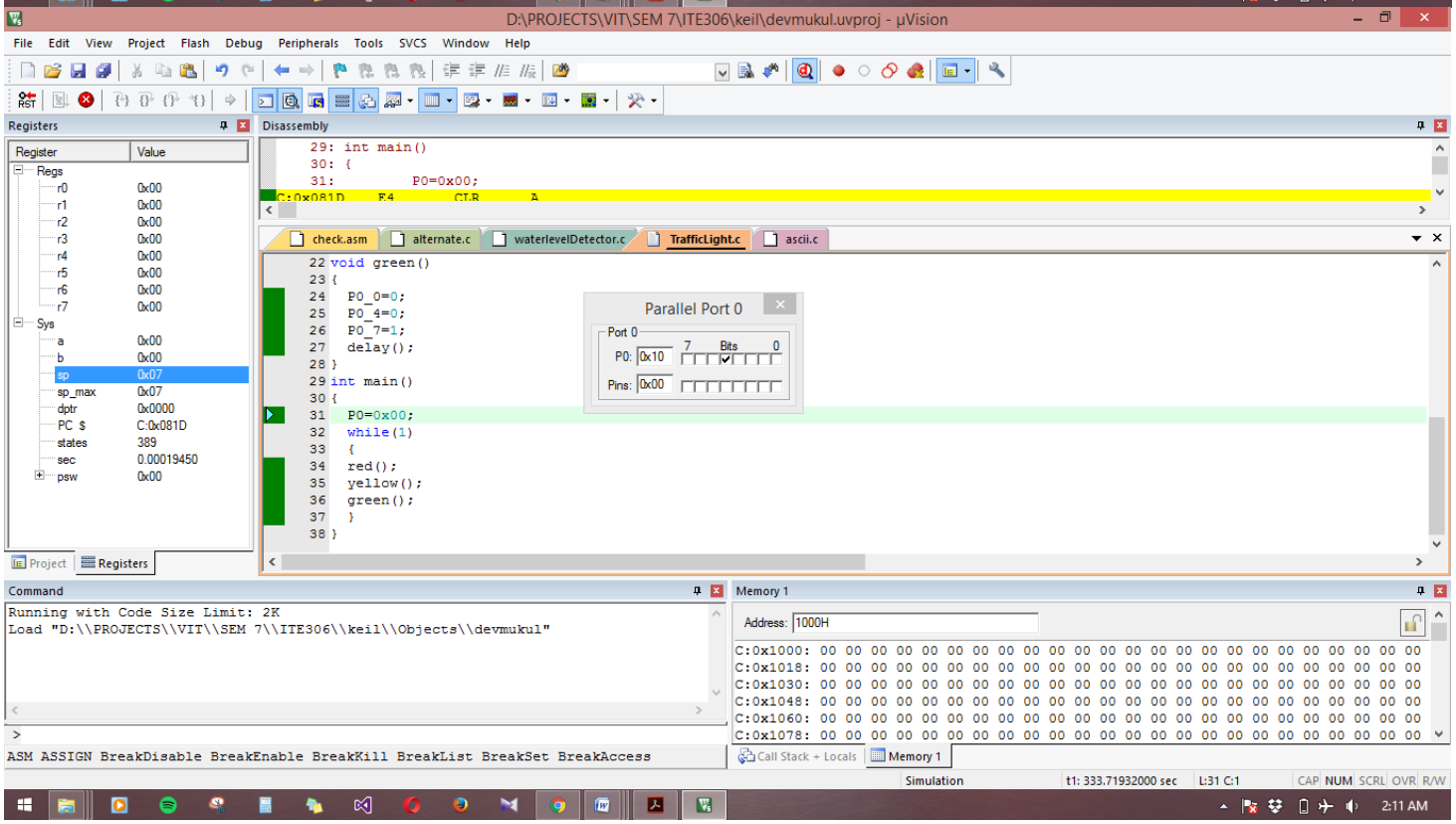
Embedded C program to implement Traffic Control Signal

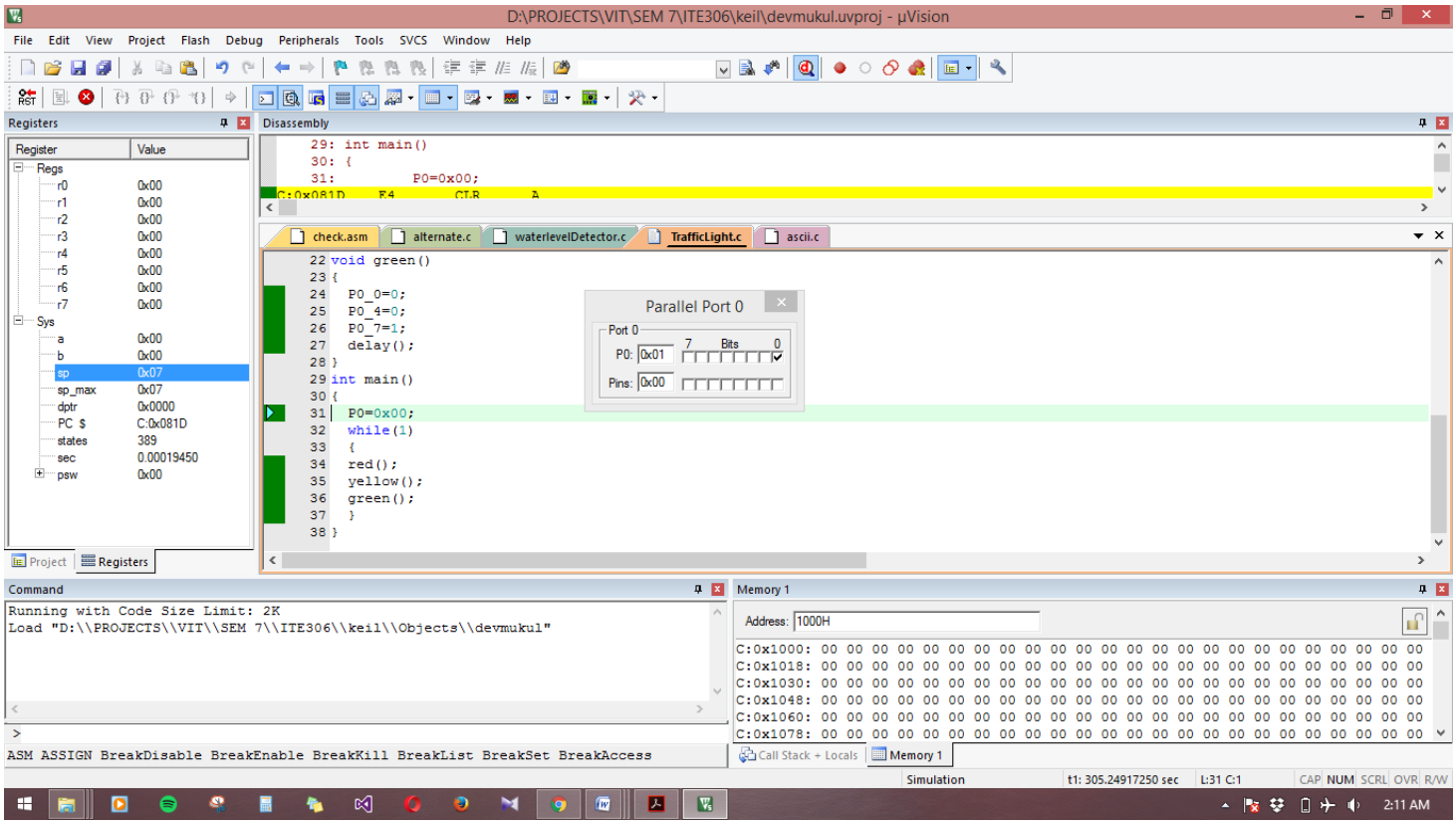
```
#include<regx51.h>
void delay()
{
	unsigned int i,j;
	for(i=0;i<1000;i++)
	for(j=0;j<10000;j++){}
}
void red()
{
	P0_0=1;
	P0_4=0;
	P0_7=0;
	delay();
}
void yellow()
{
	P0_0=0;
	P0_4=1;
	P0_7=0;
	delay();
}
void green()
{
	P0_0=0;
	P0_4=0;
	P0_7=1;
	delay();
}
int main()
```

```
{
        P0=0x00;
        while(1)
        {
        red();
        yellow();
        green();
        }
}
```



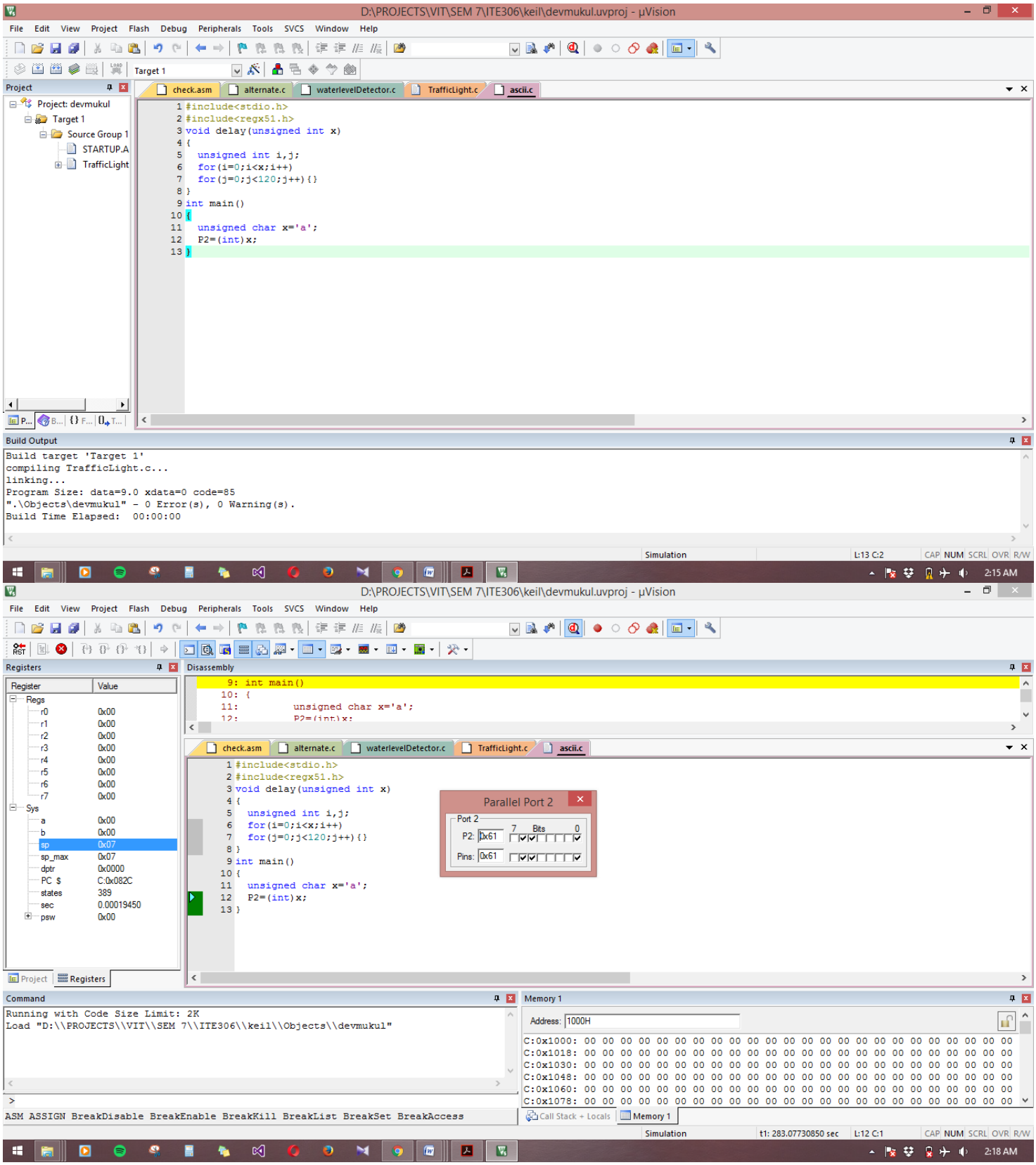

D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x07
sp_max 0x07
dptr 0x0000
PC $ C:0x081D
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
29: int main()
30: {
31: P0=0x00;
C:0x081D E4 CLR A
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
22 void green()
23 {
24 P0_0=0;
25 P0_4=0;
26 P0_7=1;
27 delay();
28 }
29 int main()
30 {
31 P0=0x00;
32 while(1)
33 {
34 red();
35 yellow();
36 green();
37 }
38 }
Parallel Port 0
Port 0
P0: 0x80
7 Bits 0
Pins: 0x00
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 360.47931450 sec L:31 C:1
CAP NUM SCRL OVR R/W
2:11 AM


D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x07
sp_max 0x07
dptr 0x0000
PC $ C:0x081D
states 389
sec 0.00019450
psw 0x00
Project Registers
Disassembly
29: int main()
30: {
31: P0=0x00;
C:0x081D E4 CLR A
check.asm alternate.c waterlevelDetector.c TrafficLight.c ascii.c
22 void green()
23 {
24 P0_0=0;
25 P0_4=0;
26 P0_7=1;
27 delay();
28 }
29 int main()
30 {
31 P0=0x00;
32 while(1)
33 {
34 red();
35 yellow();
36 green();
37 }
38 }
Parallel Port 0
Port 0
P0: 0x10
7 Bits 0
Pins: 0x00
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals Memory 1
Simulation t1: 333.71932000 sec L:31 C:1
CAP NUM SCRL OVR R/W
2:11 AM



Embedded C Program to send ASCII value of the characters

```
#include<stdio.h>
#include<regx51.h>
void delay(unsigned int x)
{
        unsigned int i,j;
        for(i=0;i<x;i++)
        for(j=0;j<120;j++){}
}
int main()
{
        unsigned char x='a';
        P2=(int)x;
}
```


D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Target 1
Project
Project: devmukul
Target 1
Source Group 1
STARTUP.A
TrafficLight
check.asm
alternate.c
waterlevelDetector.c
TrafficLight.c
ascii.c
1 #include<stdio.h>
2 #include<regx51.h>
3 void delay(unsigned int x)
4 {
5 unsigned int i,j;
6 for(i=0;i<x;i++)
7 for(j=0;j<120;j++){}
8 }
9 int main()
10 {
11 unsigned char x='a';
12 P2=(int)x;
13 }
Build Output
Build target 'Target 1'
compiling TrafficLight.c...
linking...
Program Size: data=9.0 xdata=0 code=85
".\Objects\devmukul" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:00
Simulation
L:13 C:2
CAP NUM SCRL OVR R/W
2:15 AM
D:\PROJECTS\VIT\SEM 7\ITE306\keil\devmukul.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Regs
r0 0x00
r1 0x00
r2 0x00
r3 0x00
r4 0x00
r5 0x00
r6 0x00
r7 0x00
Sys
a 0x00
b 0x00
sp 0x07
sp_max 0x07
dptr 0x0000
PC $ C:0x082C
states 389
sec 0.00019450
psw 0x00
Project
Registers
Disassembly
9: int main()
10: {
11: unsigned char x='a';
12: P2=(int)x;
check.asm
alternate.c
waterlevelDetector.c
TrafficLight.c
ascii.c
1 #include<stdio.h>
2 #include<regx51.h>
3 void delay(unsigned int x)
4 {
5 unsigned int i,j;
6 for(i=0;i<x;i++)
7 for(j=0;j<120;j++){}
8 }
9 int main()
10 {
11 unsigned char x='a';
12 P2=(int)x;
13 }
Parallel Port 2
Port 2
P2: 0x61
7 Bits 0
Pins: 0x61
Command
Running with Code Size Limit: 2K
Load "D:\\PROJECTS\\VIT\\SEM 7\\ITE306\\keil\\Objects\\devmukul"
ASM ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess
Memory 1
Address: 1000H
C:0x1000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1018: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1048: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
C:0x1078: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Call Stack + Locals
Memory 1
Simulation
t1: 283.07730850 sec
L:12 C:1
CAP NUM SCRL OVR R/W
2:18 AM