

C:\Users\sohan\Desktop\MC Lab P1\mcip\_1.c - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

```
mclip_1.c
1 #include<stdio.h>
2 #include<reg51.h>
3 char xdata port _at_ 0xe803;
4 char xdata porta _at_ 0xe800;
5 char iodata acc _at_ 0x30;
6 delay(){
7     int j;
8     for(j=0; j < 800; j++){
9    }
10 void main(){
11     port =0x80;
12     while(1){
13         acc =0x11;
14         porta =acc;
15         delay();
16         acc =0x22;
17         porta =acc;
18         delay();
19         acc =0x44;
20         porta =acc;
21         delay();
22         acc =0x88;
23         porta =acc;
24         delay();
25     }
26 }
```

Compiler Resources Compile Log Debug Find Results

Line: 1 Col: 1 Sel: 0 Lines: 26 Length: 353 Insert Done parsing in 0.063 seconds

Type here to search

20:56 16-01-2021

mc\_prog\_1 - Notepad

File Edit Format View Help

:0E802D00E4FFE0FBF00010EBE03F8BF20F5FA  
:01803B002222  
:1080000090E8037480F07830761190E8007411F0F5  
:1080100012802D76227422F012802D76447444F062  
:0D80200012802D76887488F012802D80D992  
:0300000002803C3F  
:0C803C00787FE4F6D8FD758130028000EA  
:00000001FF



1) Drive a Stepper Motor interface to rotate the motor in Anti-clockwise by N steps. Introduce suitable delay between successive steps.

```
#include<stdio.h>
#include<reg51.h>
char xdata port_at_0xe803;
char xdata porta_at_0xe800;
charidata acc_at_0x30;
charidata acc_at_0x30;
delay();
int j;
for(j=0; j<800; j++) {
}
void main() {
    port = 0x80;
    while(1) {
        acc = 0x11;
        porta = acc;
        delay();
        acc = 0x88;
        porta = acc;
        delay();
    }
}
```

mc\_prog\_2 - μVision3 - [C:\Users\sohan\Desktop\MC Lab P2\mcip\_2.c]

File Edit View Project Debug Flash Peripherals Tools SVCS Window Help

Target 1

Project Workspace

Target 1  
Source Group 1  
mcip\_2.c

```
01 #include<stdio.h>
02 #include<reg51.h>
03 char xdata CommW _at_ 0xe803;
04 char xdata portB _at_ 0xe801;
05 char xdata portC _at_ 0xe802;
06 char port[20] = {0x8e,0xf9,0xde,0x86,0xff,0xff,0xff,0x89,0x86,0xc7,0x8c},i;
07 delay()
08 {
09 long u;
10 for(u=0;u<8000;u++);
11 }
12 void main()
13 {
14 int d,b,j,m;
15 unsigned char k;
16 CommW = 0x80;
17 do
18 {
19 i=0;
20 for(d=0;d<3;d++)
21 {
22 for(b=0;b<4;b++)
23 {
24 k = port[i++];
25 for(j=0;j<8;j++)
26 {
27 m=k;
28 k=k&0x80;
29 }
```

Build target 'Target 1'  
compiling mcip\_2.c...  
linking...  
Program Size: data=38.0 xdata=3 code=356  
creating hex file from "mc\_prog\_2"...  
"mc\_prog\_2" - 0 Error(s), 0 Warning(s).

Output Window

Build Command Find in Files

For Help, press F1

Type here to search

Simulation L:1 C:1

20:53 16-01-2021 R/W

C:\Users\sohan\Desktop\MC Lab P2\mclip\_2.c - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

```
mclip_2.c
1 #include<stdio.h>
2 #include<reg51.h>
3 char xdata CommW_at_0xe803;
4 char xdata portB_at_0xe801;
5 char xdata portC_at_0xe802;
6 char port[20] = {0x8e,0xf9,0xde,0x86,0xff,0xff,0xff,0x89,0x86,0xc7,0x8c}, i;
7 delay()
8 {
9     long u;
10    for(u=0; u<8000; u++);
11 }
12 void main()
13 {
14     int d, b, j, m;
15     unsigned char k;
16     CommW = 0x80;
17     do
18     {
19         i = 0;
20         for(d=0; d<3; d++)
21         {
22             for(b=0; b<4; b++)
23             {
24                 k = port[i++];
25                 for(j=0; j < 8; j++)
26                 {
27                     m=k;
28                     k=k&0x80;
29                     if(k==0)
30                         portB=0x00;
31                     else
32                         portB=0x01;
33                     portC = 0x01;
34                     portC = 0x00;
35                 }
36             }
37         }
38     }
39 }
```

Compiler Resources Compile Log Debug Find Results

Line: 1 Col: 1 Sel: 0 Lines: 47 Length: 564 Insert Done parsing in 0.234 seconds

Type here to search

20:58 16-01-2021

C:\Users\sohan\Desktop\MC Lab P2\mclip\_2.c - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

```
mclip_2.c
11 L }
12 void main()
13 {
14     int d, b, j , m
15     unsigned char k;
16     CommW = 0x80;
17     do
18     {
19         i=0;
20         for( d=0; d<3; d++)
21         {
22             for( b=0; b<4; b++)
23             {
24                 k = port[ i ++];
25
26                 for( j =0; j <8; j++)
27                 {
28                     m=k;
29                     k=k&0x80;
30                 }
31                 if ( k==00)
32                     port B=0x00;
33                 else
34                     port B=0x01;
35
36                 port C = 0x01;
37                 port C = 0x00;
38                 k=m;
39                 k<<=1;
40             }
41         }
42     }
43     delay();
44 }
45 }
46 while(1);
47 }
```

Compiler Resources Compile Log Debug Find Results

Line: 1 Col: 1 Sel: 0 Lines: 47 Length: 564 Insert Done parsing in 0.234 seconds

Type here to search

Windows Start File Explorer Mail Settings Task View Chrome Edge Word DEV

20:58 ENG 16-01-2021



TDM-GCC 4.9.2 64-bit Release

```
mclip_2.c
11 L }
12 void main()
13 {
14     int d, b, j , m
15     unsigned char k;
16     CommW = 0x80;
17     do
18     {
19         i=0;
20         for( d=0; d<3; d++)
21     {
22         for( b=0; b<4; b++)
23     {
24         k = port[ i ++];
25
26         for( j =0; j <8; j++)
27     {
28         m=k;
29         k=k&0x80;
30     {
31         if ( k==00)
32             port B=0x00;
33         else
34             port B=0x01;
35         }
36         port C = 0x01;
37         port C = 0x00;
38         k=m;
39         k<<=1;
40     }
41     }
42     delay();
43     }
44     }
45     }
46     while(1);
47 }
```

Compiler Resources Compile Log Debug Find Results

Line: 1 Col: 1 Sel: 0 Lines: 47 Length: 564 Insert Done parsing in 0.234 seconds



Type here to search



ENG

20:59  
16-01-2021

mc\_prog\_2 - Notepad

File Edit Format View Help

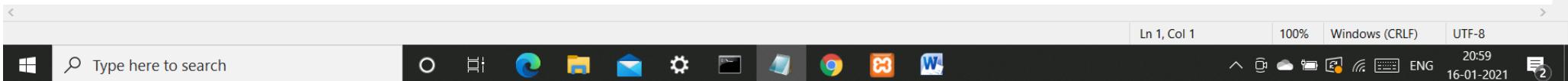
```
:1081340014088EF9DE86FFFFFFF8986C78C0000D6
:06814400000000000000035
:1080FA00E4F524F523F522F521E47F407E1FFDFCFB
:10810A00AB24AA23A922A821C312814B501BE4FA4B
:10811A00F9F8E5242401F524EA3523F523E9352283
:09812A00F522E83521F52180D091
:018133002229
:10808C0090E8037480F0E4F51CF51DF51EE4FFE8A
:10809C00AD1C051C74082DF8E6F9E4FDFCE9751F10
:1080AC0000F520530180E990E8017003F08003741F
:1080BC0001F090E8027401F0E4F0A920E925E0F960
:1080CC000DBD00010CED64084C70D20FBF00010E09
:1080DC00EF64044E70BA1280FA051EE51E7002059C
:0E80EC001DC39403E51D6480948040A180981C
:030000000280007B
:0C800000787FE4F6D8FD758124028047EB
:10814B00EB9FF5F0EA9E42F0E99D42F0EC6480C8AB
:06815B0064809845F0224B
:10800C0002808CE493A3F8E493A34003F68001F27E
:10801C0008DFF48029E493A3F85407240CC8C33375
:10802C00C4540F4420C8834004F456800146F6DF44
:10803C00E4800B0102040810204080908134E47E1F
:10804C00019360BCA3FF543F30E509541FFEE49339
:10805C00A360010ECF54C025E060A840B8E493A300
:10806C00FAE493A3F8E493A3C8C582C8CAC583CA2B
:10807C00F0A3C8C582C8CAC583CADFE9DEE780BEE3
:010111000021
```



mc\_prog\_2 - Notepad

File Edit Format View Help

```
:10810A00AB24AA23A922A821C312814B501BE4FA4B
:10811A00F9F8E5242401F524EA3523F523E9352283
:09812A00F522E83521F52180D091
:018133002229
:10808C0090E8037480F0E4F51CF51DF51EE4FFE8A
:10809C00AD1C051C74082DF8E6F9E4FDFCE9751F10
:1080AC0000F520530180E990E8017003F08003741F
:1080BC0001F090E8027401F0E4F0A920E925E0F960
:1080CC000DBD00010CED64084C70D20FBF00010E09
:1080DC00EF64044E70BA1280FA051EE51E7002059C
:0E80EC001DC39403E51D6480948040A180981C
:030000000280007B
:0C800000787FE4F6D8FD758124028047EB
:10814B00EB9FF5F0EA9E42F0E99D42F0EC6480C8AB
:06815B0064809845F0224B
:10800C0002808CE493A3F8E493A34003F68001F27E
:10801C0008DFF48029E493A3F85407240CC8C33375
:10802C00C4540F4420C8834004F456800146F6DF44
:10803C00E4800B0102040810204080908134E47E1F
:10804C00019360BCA3FF543F30E509541FFEE49339
:10805C00A360010ECF54C025E060A840B8E493A300
:10806C00FAE493A3F8E493A3C8C582C8CAC583CA2B
:10807C00F0A3C8C582C8CAC583CADFE9DEE780BEE3
:01814A000034
:00000001FF
```



MC

Display messages FIRE & HELP alternately with flickering effects on a 7-segment display interface for a suitable period of time. Ensure a flashing rate that makes it easy to read both the messages.

A.

```
#include <stdio.h>
#include <meg51.h>
char xdata CommW_at_0xc803;
char xdata portB_at_0xe801;
char xdata portC_at_0xe802;
char portT[20] = { 0x8c, 0xf9, 0xde, 0x86, 0xff, 0xff, 0xff,
    0xff, 0x89, 0x86, 0xc7, 0x8c }, i;
delay();
long u;
for(u=0; u<8000; u++);
```

}

```
void main() {
    int d, b, j, m;
    unsigned char k;
    CommW = 0xc80;
    do {
        i = 0;
        for(d = 0; d < 3; d++)
            for(b = 0; b < 4; b++)
                k = portT[i++];
        for(j = 0; j < 8; j++)
            m = k;
        k = k & 0x80;
    }
    if(k == 0)
        portB = 0x00;
    else
```

h&B = 0x01;

{ h&C = 0x01;

h&C = 0x00;

k=m;

k<<=1;

} }

delay();

} }

while(1);

{

mc\_prog\_3 - μVision3 - [C:\Users\sohan\Desktop\MC Lab P3\mcip\_3.c]

File Edit View Project Debug Flash Peripherals Tools SVCS Window Help

Target 1

Project Workspace

Target 1  
Source Group 1  
mcip\_3.c

```
01 #include<stdio.h>
02 #include<reg51.h>
03 char xdata commW _at_ 0xe803;
04 char xdata portB _at_ 0xe801;
05 char xdata portC _at_ 0xe802;
06 char port[20] = {0xff, 0xff, 0xff, 0xff, 0x83, 0x88, 0xC8, 0x82, 0xC7, 0xC0, 0xAF, 0x86},i;
07 delay()
08 {
09 long u;
10 for(u=0;u<4000;u++);
11 }
12 void main(){
13 int d,b,j,m;
14 unsigned char k;
15 commW = 0x80;
16 do{
17 i=0;
18 for(d=0;d<1;d++) {
19 for(b=13;b>0;b--) {
20 delay();
21 k=port[i++];
22 for(j=0;j<8;j++) {
23 m=k;
24 k=k&0x80;
25 if(k==00)
26 portB=0x00;
27 else
28 portB=0x01;
29 portC=0x01;
30 portC=0x00;
31 k=m;
32 }
33 }
34 }
35 }
36 }
```

Build target 'Target 1'  
compiling mcip\_3.c...  
linking...  
Program Size: data=40.0 xdata=3 code=372  
creating hex file from "mc\_prog\_3"..."mc\_prog\_3" - 0 Error(s), 0 Warning(s).

Type here to search

mc\_prog\_3 - μVision3 - [C:\Users\sohan\Desktop\MC Lab P3\mcip\_3.c]

File Edit View Project Debug Flash Peripherals Tools SVCS Window Help

Target 1

Project Workspace

Target 1  
Source Group 1  
mcip\_3.c

```
08 {
09 long u;
10 for(u=0;u<4000;u++) {
11 }
12 void main() {
13 int d,b,j,m;
14 unsigned char k;
15 commW = 0x80;
16 do{
17 i=0;
18 for(d=0;d<1;d++) {
19 for(b=13;b>0;b--) {
20 delay();
21 k=port[i++];
22 for(j=0;j<8;j++) {
23 m=k;
24 k=k&0x80;
25 if(k==00)
26 portB=0x00;
27 else
28 portB=0x01;
29 portC=0x01;
30 portC=0x00;
31 k=m;
32 k<=1;
33 }
34 delay();
35 }
36 while(1);
37 }
38 }
```

Build target 'Target 1'  
compiling mcip\_3.c...  
linking...  
Program Size: data=40.0 xdata=3 code=372  
creating hex file from "mc\_prog\_3"..."mc\_prog\_3" - 0 Error(s), 0 Warning(s).

Type here to search



C:\Users\sohan\Desktop\MC Lab P3\mclip\_3.c - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

```
mclip_3.c

1 #include<stdio.h>
2 #include<reg51.h>
3 char xdata commW_at_ 0xe803;
4 char xdata portB_at_ 0xe801;
5 char xdata portC_at_ 0xe802;
6 char port[20] = {0xff, 0xff, 0xff, 0xff, 0x83, 0x88, 0xC8, 0x82, 0xC7, 0xC0, 0xAF, 0x86}, i;
7 delay()
8 {
9 long u;
10 for(u=0; u<4000; u++);
11 }
12 void main(){
13 int d, b, j, m
14 unsigned char k;
15 commW = 0x80;
16 do{
17 i=0;
18 for(d=0; d<1; d++) {
19 for(b=13, b>0; b--) {
20 delay();
21 k=port[i++];
22 for(j=0; j <8; j++) {
23 m=k;
24 k=k&0x80;
25 if(k==00)
26 portB=0x00;
27 else
28 portB=0x01;
29 portC=0x01;
30 portC=0x00;
31 k=m;
32 k<=1;
33 }
34 delay();
35 }
36 while(1);
37 }
```

Compiler Resources Compile Log Debug Find Results

Line: 13 Col: 11 Sel: 0 Lines: 37 Length: 558 Insert Done parsing in 0.016 seconds

Type here to search

21:04 16-01-2021

mc\_prog\_3 - Notepad

File Edit Format View Help

:108144001408FFFFFFFF8388C882C7C0AF86000002  
:068154000000000000000025  
:10810A00E4F526F525F524F523E47FA07E0FFDFC92  
:10811A00AB26AA25A924A823C312815B501BE4FA23  
:10812A00F9F8E5262401F526EA3525F525E9352469  
:09813A00F524E83523F52380D07B  
:018143002219  
:10808C0090E8037480F0E4F51CF51DF51E751F00D7  
:10809C0075200D12810AAF1C051C74082FF8E6FF21  
:1080AC00E4FDFCEF752100F522530780EF90E80109  
:1080BC007003F080037401F090E8027401F0E4F0B6  
:1080CC00AF22EF25E0FF0DBD00010CED64084C70F4  
:1080DC00D2E52015207002151FD3E5209400E51F72  
:1080EC006480948050AD12810A051EE51E70020555  
:0E80FC001DC39401E51D64809480409180882E  
:030000000280007B  
:0C800000787FE4F6D8FD758126028047E9  
:10815B00EB9FF5F0EA9E42F0E99D42F0EC6480C89B  
:06816B0064809845F0223B  
:10800C0002808CE493A3F8E493A34003F68001F27E  
:10801C0008DFF48029E493A3F85407240CC8C33375  
:10802C00C4540F4420C8834004F456800146F6DF44  
:10803C00E4800B0102040810204080908144E47EOF  
:10804C00019360BCA3FF543F30E509541FFEE49339  
:10805C00A360010ECF54C025E060A840B8E493A300  
:10806C00FAE493A3F8E493A3C8C582C8CAC583CA2B  
:10807C00E0A3C08C582C8C582C8CAC583CA2B



Type here to search



Ln 1, Col 1

100%

Windows (CRLF)

UTF-8



21:04  
16-01-2021

mc\_prog\_3 - Notepad

File Edit Format View Help

```
:10812A00F9F8E5262401F526EA3525F525E9352469
:09813A00F524E83523F52380D07B
:018143002219
:10808C0090E8037480F0E4F51CF51DF51E751F00D7
:10809C0075200D12810AAF1C051C74082FF8E6FF21
:1080AC00E4FDFCEF752100F522530780EF90E80109
:1080BC007003F080037401F090E8027401F0E4F0B6
:1080CC00AF22EF25E0FF0DBD00010CED64084C70F4
:1080DC00D2E52015207002151FD3E5209400E51F72
:1080EC006480948050AD12810A051EE51E70020555
:0E80FC001DC39401E51D64809480409180882E
:030000000280007B
:0C800000787FE4F6D8FD758126028047E9
:10815B00EB9FF5F0EA9E42F0E99D42F0EC6480C89B
:06816B0064809845F0223B
:10800C0002808CE493A3F8E493A34003F68001F27E
:10801C0008DFF48029E493A3F85407240CC8C33375
:10802C00C4540F4420C8834004F456800146F6DF44
:10803C00E4800B0102040810204080908144E47E0F
:10804C00019360BCA3FF543F30E509541FFEE49339
:10805C00A360010ECF54C025E060A840B8E493A300
:10806C00FAE493A3F8E493A3C8C582C8CAC583CA2B
:10807C00F0A3C8C582C8CAC583CADFE9DEE780BEE3
:01815A000024
:00000001FF
```

Q) Display messages BANGALORE in scrolling fashion on a 7-segment display interface for a suitable period of time.

```
#include <stdio.h>
#include <reg51.h>
char xdata CommW_at_0xc803;
char xdata portB_at_0xc801;
char xdata portC_at_0xc802;
char port[20] = {0xff, 0xff, 0xff, 0xff, 0x83, 0x88, 0xc8, 0x82,
                 0xc7, 0xc0, 0xAF, 0x86}, i;
delay()
{
    long u;
    for(u=0; u<4000; u++);
}
void main()
{
    int d, b, f, m;
    unsigned char k;
    CommW=0x80;
    do
    {
        i=0;
        for(d=0; d<1; d++)
        {
            for(b=0; b>0; b--)
            {
                delay();
                k=port[i++];
                for(j=0; j<2; j++)
                {
                    m=k;
                    k=k&0xc80;
                }
                if(k==0)
                    portB=0x00;
                else
                    portB=0x01;
            }
        }
    }
}
```

heatC = 0x01;

heatC = 0x00;

k = m;

.

k <<= 1;

{

}

delay();

{

}

while(1);

{

mc\_prog\_4\_wd - μVision3 - [C:\Users\sohan\Desktop\MC Lab P4\mcip\_4\_wd.c]

File Edit View Project Debug Flash Peripherals Tools SVCS Window Help

Target 1

Project Workspace

Target 1  
Source Group 1  
mclp\_4\_wd.c

```
01 #include<reg52.h>
02 #include<stdio.h>
03 void delay(int);
04 void main() {
05     do{
06         P2 = 0x01;
07         delay(1000);
08         P2 = 0x02;
09         delay(1000);
10         P2 = 0x04;
11         delay(1000);
12         P2 = 0x08;
13         delay(1000);
14     }
15     while(1);
16 }
17 void delay(int k){
18     int i,j;
19     for (i=0;i<k;i++) {
20         for (j=0;j<100;j++) {
21         }
22     }
23 }
```

mclp\_4\_wd

Build target 'Target 1'  
linking...  
Program Size: data=9.0 xdata=0 code=83  
creating hex file from "mc\_prog\_4\_wd"..."  
"mc\_prog\_4\_wd" - 0 Error(s), 0 Warning(s).

Output Window

Build Command Find in Files Simulation

Type here to search

C:\Users\sohan\Desktop\MC Lab P4\mcip\_4\_wd.c - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

```
mcip_4_wd.c

1 #include<reg52.h>
2 #include<stdio.h>
3 void delay(int);
4 void main(){
5 do{
6 P2 = 0x01;
7 delay(1000);
8 P2 = 0x02;
9 delay(1000);
10 P2 = 0x04;
11 delay(1000);
12 P2 = 0x08;
13 delay(1000);
14 }
15 while(1);
16 }
17 void delay(int k){
18 int i, j;
19 for(i=0; i <k; i++){
20 for(j=0; j <100; j++)
21 }
22 }
23 }
```

Compiler Resources Compile Log Debug Find Results

Line: 1 Col: 1 Sel: 0 Lines: 23 Length: 275 Insert Done parsing in 0.094 seconds

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21:24 16-01-2021

mc\_prog\_4\_wd - Notepad

File Edit Format View Help

```
|:10802A0075A00112800075A00212800075A00412CA
:0A803A00800075A00812800080E6A7
:048000007FE87E0394
:10800400E4FDFCC3ED9FEE6480F8EC6480985015A9
:10801400E4FBFA0BBB00010AEB64644A70F50DBD86
:0580240000010C80DEEC
:018029002234
:0300000002804437
:0C804400787FE4F6D8FD75810702802AE1
:00000001FF
```



4) Drive a Stepper Motor interface to rotate the motor in clockwise by N steps. Introduce suitable delay between successive steps.

### A. WAVE DRIVE :-

```
#include <reg52.h>
#include <stdio.h>

void delay(int);
void main()
{
    do
    {
        P2 = 0x01;
        delay(1000);
        P2 = 0x02;
        delay(1000);
        P2 = 0x04;
        delay(1000);
        P2 = 0x08;
        delay(1000);
    }
    while(1);
}

void delay(int k)
{
    int i, j;
    for(i=0; i<k; i++)
    {
        for(j=0; j<100; j++)
    }
}
```

## FULL DRIVE:

```
#include <reg52.h>
#include <stdio.h>
void delay(int);
void main()
{
    P2 = 0x03;
    delay(1000);
    P2 = 0x06;
    delay(1000);
    P2 = 0x09; P2 = 0x0c;
    delay(1000);
    P2 = 0x09;
    delay(1000);
}
```

```
}  
white(1);
```

```
?  
void delay(int k)  
{  
    int i, j;  
    for(i=0; i<k; i++)  
        for(j=0; j<100; j++)  
            ???
```

## HALF DRIVE :-

```
#include <reg52.h>
#include <stdio.h>
void delay(int);
void main()
{
    do
    {
        P2 = 0x01;
        delay(1000);
        P2 = 0x03;
        delay(1000);
        P2 = 0x02;
        delay(1000);
        P2 = 0x06;
        delay(1000);
        P2 = 0x04;
        delay(1000);
        P2 = 0x0C;
        delay(1000);
        P2 = 0x08;
        delay(1000);
        P2 = 0x09;
        delay(1000);
    }
    while(1);
}

void delay(int k)
{
    int j, i;
    for(i=0; i<k; i++)
    {
        for(j=0; j<100; j++)
    }
}
```

mc\_prog\_5 - μVision3 - [C:\Users\sohan\Desktop\MC Lab P5\mcip\_5.c]

File Edit View Project Debug Flash Peripherals Tools SVCS Window Help

Target 1

Project Workspace

Target 1  
Source Group 1  
mcip\_5.c

```
001 #include<stdio.h>
002 #include<reg51.h>
003
004 unsigned char xdata CommandWord _at_ 0xe803;
005 unsigned char xdata PortA _at_ 0xe800;
006 unsigned char xdata PortB _at_ 0xe801;
007 unsigned char xdata PresentFloor,RequestedFloor,Step = 0xf0;
008 unsigned long xdata Count,i;
009
010 Delay()
011 {
012     for(Count = 0; Count <= 4500; Count++);
013 }
014
015 Reset()
016 {
017     Step = Step & 0x0f;
018     PortA = Step;
019     Step = Step | 0xf0;
020     PortA = Step;
021 }
022 GoUp()
023 {
024     switch(RequestedFloor)
025     {
026         case 0xd: while(Step < 0xf3)
027         {
028             Step++;
029             PortA = Step;
030             Delay();
031         }
032     }
033 }
```

Build target 'Target 1'  
compiling mcip\_5.c...  
linking...  
Program Size: data=9.0 xdata=14 code=529  
creating hex file from "mc\_prog\_5"...  
"mc\_prog\_5" - 0 Error(s), 0 Warning(s).

Output Window

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mc\_prog\_5 - μVision3 - [C:\Users\sohan\Desktop\MC Lab P5\mcip\_5.c]

File Edit View Project Debug Flash Peripherals Tools SVCS Window Help

Target 1

Project Workspace

Target 1  
Source Group 1  
mcip\_5.c

```
031 }
032 Reset();
033 break;
034
035 case 0x0b: while(Step < 0xf6)
036 {
037 Step++;
038 PortA = Step;
039 Delay();
040 }
041 Reset();
042 break;
043
044 case 0x07: while(Step < 0xf9)
045 {
046 Step++;
047 PortA = Step;
048 Delay();
049 }
050 Reset();
051 break;
052
053 }
054 }
055 GoDown()
056 {
057 switch(RequestedFloor)
058 {
059 case 0xd: while(Step > 0xf3)
060 {
061 Step--;
062 }
063 }
064 }
```

Build target 'Target 1'  
compiling mcip\_5.c...  
linking...  
Program Size: data=9.0 xdata=14 code=529  
creating hex file from "mc\_prog\_5"..."mc\_prog\_5" - 0 Error(s), 0 Warning(s).

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mc\_prog\_5 - μVision3 - [C:\Users\sohan\Desktop\MC Lab P5\mcip\_5.c]

File Edit View Project Debug Flash Peripherals Tools SVCS Window Help

Target 1

Project Workspace

Target 1  
Source Group 1  
mcip\_5.c

```
059 case 0x0d: while(Step > 0xf3)
060 {
061     Step--;
062     PortA = Step;
063     Delay();
064 }
065 Reset();
066 break;
067
068 case 0x0b: while(Step > 0xf6)
069 {
070     Step--;
071     PortA = Step;
072     Delay();
073 }
074 Reset();
075 break;
076
077 case 0x0e: while(Step > 0xf0)
078 {
079     Step--;
080     PortA = Step;
081     Delay();
082 }
083 Reset();
084 break;
085
086 }
087
088 void main()
089 {

```

Build target 'Target 1'  
compiling mcip\_5.c...  
linking...  
Program Size: data=9.0 xdata=14 code=529  
creating hex file from "mc\_prog\_5"...  
"mc\_prog\_5" - 0 Error(s), 0 Warning(s).

Type here to search

mc\_prog\_5 - μVision3 - [C:\Users\sohan\Desktop\MC Lab P5\mcip\_5.c]

File Edit View Project Debug Flash Peripherals Tools SVCS Window Help

Target 1

Project Workspace

Target 1  
Source Group 1  
mcip\_5.c

```
076 case 0x0e: while(Step > 0xf0)
077 {
078     Step--;
079     PortA = Step;
080     Delay();
081 }
082 Reset();
083 break;
084 }
085
086 }
087 }
088 void main()
089 {
090     CommandWord = 0x82;
091     PortA = 0xf0;
092     PresentFloor = 0x0e;
093     while(1){
094         RequestedFloor = PortB;
095         RequestedFloor = RequestedFloor& 0x0f;
096
097         if(RequestedFloor != 0x0f && RequestedFloor != PresentFloor){
098             if(RequestedFloor<PresentFloor)
099                 GoUp();
100            else
101                GoDown();
102            PresentFloor = RequestedFloor;
103        }
104    }
105
106 }
```

Build target 'Target 1'  
compiling mcip\_5.c...  
linking...  
Program Size: data=9.0 xdata=14 code=529  
creating hex file from "mc\_prog\_5"...  
"mc\_prog\_5" - 0 Error(s), 0 Warning(s).

Output Window

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Simulation

L:13 C:1

21:36 16-01-2021 R/W

C:\Users\sohan\Desktop\MC Lab P5\mclp\_5.c - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

```
mclp_5.c
1 #include<stdio.h>
2 #include<reg51.h>
3
4 unsigned char xdata CommandWord_at_0xe803;
5 unsigned char xdata PortA_at_0xe800;
6 unsigned char xdata PortB_at_0xe801;
7 unsigned char xdata PresentFloor, RequestedFloor, Step = 0xf0;
8 unsigned long xdata Count, i;
9
10 Delay()
11 {
12     for (Count = 0; Count <= 4500; Count++);
13 }
14
15 Reset()
16 {
17     Step = Step & 0x0f;
18     PortA = Step;
19     Step = Step | 0xf0;
20     PortA = Step;
21 }
22 GoUp()
23 {
24     switch(RequestedFloor)
25 {
26     case 0x0d: while(Step < 0xf3)
27     {
28         Step++;
29         PortA = Step;
30         Delay();
31     }
32     Reset();
33     break;
34
35     case 0x0b: while(Step < 0xf6)
36     {
37         Step++;
38         PortA = Step;
39     }
40     Reset();
41     break;
42 }
43 }
```

Compiler Resources Compile Log Debug Find Results

Line: 104 Col: 3 Sel: 0 Lines: 105 Length: 1355 Insert Done parsing in 0.031 seconds

Type here to search

21:37 16-01-2021

C:\Users\sohan\Desktop\MC Lab P5\mclip\_5.c - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

```
mclip_5.c
29 Port A = Step;
30 Delay();
31 }
32 Reset();
33 break;
34
35 case 0x0b: while(Step < 0xf6)
36 {
37 Step++;
38 Port A = Step;
39 Delay();
40 }
41 Reset();
42 break;
43
44 case 0x07: while(Step < 0xf9)
45 {
46 Step++;
47 Port A = Step;
48 Delay();
49 }
50 Reset();
51 break;
52
53 }
54 }
55 GoDown()
56 {
57 switch(RequestedFloor)
58 {
59 case 0xd: while(Step > 0xf3)
60 {
61 Step--;
62 Port A = Step;
63 Delay();
64 }
65 Reset();
66 break;
}
```

Compiler Resources Compile Log Debug Find Results

Line: 104 Col: 3 Sel: 0 Lines: 105 Length: 1355 Insert Done parsing in 0.031 seconds

Type here to search

21:37 ENG 16-01-2021

C:\Users\sohan\Desktop\MC Lab P5\mclip\_5.c - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

mclip\_5.c

```
66     break;
67
68 case 0x0b: while(Step > 0xf6)
69 {
70     Step--;
71     PortA = Step;
72     Delay();
73 }
74 Reset();
75 break;
76
77 case 0xe: while(Step > 0xf0)
78 {
79     Step--;
80     PortA = Step;
81     Delay();
82 }
83 Reset();
84 break;
85
86 }
87 }
88 void main()
89 {
90     CommandWord = 0x82;
91     PortA = 0xf0;
92     PresentFloor = 0xe;
93     while(1){
94         RequestedFloor = PortB;
95         RequestedFloor = RequestedFloor & 0x0f;
96
97         if(RequestedFloor != 0x0f && RequestedFloor != PresentFloor){
98             if(RequestedFloor < PresentFloor)
99                 GoUp();
100            else
101                GoDown();
102            PresentFloor = RequestedFloor;
103        }
104 }
```

Compiler Resources Compile Log Debug Find Results

Line: 104 Col: 3 Sel: 0 Lines: 105 Length: 1355 Insert Done parsing in 0.031 seconds

Type here to search

21:37 16-01-2021

C:\Users\sohan\Desktop\MC Lab P5\mclip\_5.c - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

TDM-GCC 4.9.2 64-bit Release

(globals)

mclip\_5.c

```
69 {  
70     Step--;  
71     PortA = Step;  
72     Delay();  
73 }  
74     Reset();  
75     break;  
76 }  
77 case 0xe: while(Step > 0xf0)  
78 {  
79     Step--;  
80     PortA = Step;  
81     Delay();  
82 }  
83     Reset();  
84     break;  
85 }  
86 }  
87 }  
88 void main()  
89 {  
90     CommandWord = 0x82;  
91     PortA = 0xf0;  
92     PresentFloor = 0xe;  
93     while(1){  
94         RequestedFloor = PortB;  
95         RequestedFloor = RequestedFloor & 0x0f;  
96 }  
97 if(RequestedFloor != 0x0f && RequestedFloor != PresentFloor){  
98     if(RequestedFloor < PresentFloor)  
99         GoUp();  
100    else  
101        GoDown();  
102    PresentFloor = RequestedFloor;  
103 }  
104 }||
```

Compiler Resources Compile Log Debug Find Results

Line: 104 Col: 3 Sel: 0 Lines: 105 Length: 1355 Insert Done parsing in 0.031 seconds

Type here to search

21:37 16-01-2021

mc\_prog\_5 - Notepad

File Edit Format View Help

```
:04820900410004F03C
:08808C00E004F0E090E800F0D0
:108094009000001280F800000000E47F947E11FD3F
:1080A400FC900000E0F8A3E0F9A3E0FAA3E0FBD31E
:1080B4001280DB5021900000E0FCA3E0FDA3E0FE71
:1080C400A3E02401FFE43EFEE43DFDE43CFC90001B
:0780D400001280EC80C422C1
:1081F300900004E0540FF090E800F044F090000485
:06820300F090E800F022FB
:1081B300900005E024F9602624FC601224FE702F51
:1081C300900004E0C394F3502312808C80F290005B
:1081D30004E0C394F6500512808C80F2800E900068
:1081E30004E0C394F9500512808C80F21281F322CB
:10812900900005E024F5601724FD60250470359062
:108139000004E0D394F34029E01412808E80F0907B
:108149000004E0D394F64007E01412808E80F0809A
:1081590010900004E0D394F04007E01412808E8060
:05816900F01281F32279
:10816E0090E8037482F090E80074F0F090000A74C6
:10817E000EF090E801E0900005F0540FF0640F60EF
:10818E00F190000AE0FF900005E0FE6F60E4EEC3A0
:10819E009F50051281B38003128129900005E09053
:0581AE00000AF080CD85
:030000000280007B
:0C800000787FE4F6D8FD75810702804708
:1080DB00EB9FF5F0EA9E42F0E99D42F0E89C45F0FB
:0100ED0000270
```

mc\_prog\_5 - Notepad

File Edit Format View Help

```
:05816900F01281F32279
:10816E0090E8037482F090E80074F0F090000A74C6
:10817E000EF090E801E0900005F0540FF0640F60EF
:10818E00F190000AE0FF900005E0FE6F60E4EEC3A0
:10819E009F50051281B3800312812990005E09053
:0581AE00000AF080CD85
:030000000280007B
:0C800000787FE4F6D8FD75810702804708
:1080DB00EB9FF5F0EA9E42F0E99D42F0E89C45F0FB
:0180EB002272
:0C80EC00ECF0A3EDF0A3EEF0A3EFF02207
:1080F800A8828583F0D083D08212810F12810F125B
:10810800810F12810FE473E493A3C583C5F0C5837F
:10811800C8C582C8F0A3C583C5F0C583C8C582C8D1
:018128002234
:10800C0002816EE493A3F8E493A34003F68001F29B
:10801C0008DFF48029E493A3F85407240CC8C33375
:10802C00C4540F4420C8834004F456800146F6DF44
:10803C00E4800B0102040810204080908209E47E49
:10804C00019360BCA3FF543F30E509541FFEE49339
:10805C00A360010ECF54C025E060A840B8E493A300
:10806C00FAE493A3F8E493A3C8C582C8CAC583CA2B
:10807C00F0A3C8C582C8CAC583CADFE9DEE780BEE3
:01820D000070
:00000001FF
```

57. Program to done the elevator interface.

```
A. #include <stdio.h>
#include <gicv51.h>
unsigned char xdata CommandWord_at_0xe803;
unsigned char xdata PortA_at_0xe800;
unsigned char xdata PortB_at_0xe801;
unsigned char xdata PresentFloor, RequestedFloor, Step = 0xef0;
unsigned long xdata Count, i;
Delay();
for (Count = 0; Count <= 4500; Count++);
{
    Reset();
    Step = Step & 0x0f;
    PortA = Step;
    Step = Step | 0xf0;
    PortA = Step;
}
GIOVPC();
Switch (RequestedFloor) {
    case 0xd0: while (Step < 0xf3) {
        Step++;
        PortA = Step;
        Delay();
    }
    Reset();
    break;
}
case 0xb0: while (Step < 0xf6) {
    Step++;
    PortA = Step;
    Delay();
}
Reset();
```

```
break;  
case 0x07: while(CStep < 0xf9){  
    Step++;  
    PortA = Step;  
    Delay();  
}  
Reset();  
break;  
}  
GoDown();
```

```
Switch(RequestedFloor);  
case 0x0d: while(CStep > 0xf3){  
    Step--;  
    PortA = Step;  
    Delay();  
}  
Reset();  
break;  
case 0x0b: while(CStep > 0xfc){  
    Step--;  
    PortA = Step;  
    Delay();  
}  
Reset();  
break;
```

```
case 0x0c: while(CStep > 0xf0){  
    Step--;  
    PortA = Step;  
    Delay();  
}  
Reset();  
break;  
}}
```

```
void main() {
    CommandWord = 0x8d;
    PortA = 0xf0;
    PresentFloor = 0xe;
    while(1) {
        RequestedFloor = PortB;
        RequestedFloor = RequestedFloor & 0x0f;
        if(RequestedFloor != 0x0f && RequestedFloor != PresentFloor) {
            if(RequestedFloor < PresentFloor)
                GoUp();
            else
                GoDown();
            PresentFloor = RequestedFloor;
        }
        RequestedFloor = PortB;
    }
}
```