//C Program to implement up-counting using SysTick

```
#include "LPC17xx.h"

 uint32_t x;
int main(void)
{
        SysTick->CTRL |= 1 << 2; //Select CPU Clock
        SysTick->CTRL |= 1 << 0; //Enable SysTick
        SysTick->CTRL |= 1 << 1; //Enable SysTick Interrupts
        //SysTick->CTRL |=(1<<0)|(1<<1)|(1<<2);// in one line
        SysTick->LOAD = 999999; //100MHz clock, 1ms = 100000 counts

        LPC_GPIO0->FIODIR = 0xffffffff; //Configure Port0 as output mode

        while(1)
                {
                        LPC_GPIO0->FIOPIN = x;
                }
 }


      void SysTick_Handler(void)
            {
                  SysTick->CTRL &= ~(1<<16);//Clear System Tick counter flag
                    x++;
             }
```

Logic:

If System Clock = 100 MHz and for 100ms

LOAD = (100,000000/1000)*100 - 1

//C Program to implement up-counting and monitor the value and take some action by comparing the value using SysTick

```
#include "LPC17xx.h"
 uint32_t x=0,y;
int main(void)
        {
        SysTick->CTRL |= 1 << 2; //Select CPU Clock
        SysTick->CTRL |= 1 << 0; //Enable SysTick
        SysTick->CTRL |= 1 << 1; //Enable SysTick Interrupts
        //SysTick->CTRL |=(1<<0)|(1<<1)|(1<<2);// in one line
        SysTick->LOAD = 999999; //100MHz clock, 1ms = 100000 counts

        LPC_GPIO0->FIODIR = 0xffffffff; //Configure Port0 as output mode
        LPC_GPIO1->FIODIR = 0xffffffff; //Configure Port1 as output mode
        while(1)
                {
                //do nothing
                }
        }

    void SysTick_Handler(void)
      {
           SysTick->CTRL &= ~(1<<16);//Clear System Tick counter flag
                    x++;
           LPC_GPIO0->FIOPIN = x;
           switch(x)
             {
                  case (0x05):
                   LPC_GPIO1->FIOSET =(1<<0);
                  break;

                 case (0x0a):
                LPC_GPIO1->FIOSET =(1<<8);
                break;

               case (0x0f):
              LPC_GPIO1->FIOSET =(1<<16);
               break;

             case (0x15):
              LPC_GPIO1->FIOSET =(1<<24);
             break;

           case (0x1a):
          LPC_GPIO1->FIOSET =(1<<31);
           break;
    }}
```