**// C programming of PWM1 with different duty cycle**

#include<stdio.h>

#include <lpc17xx.h>

void PWM\_init(void)

{

LPC\_PINCON->PINSEL3 |= (2<<4);// pwm1.1 , p1.18

LPC\_PWM1->TCR=(1<<0);// enable counter and PWM

LPC\_PWM1->PR=0;//to fix the period of pwm

LPC\_PWM1->MCR=(1<<1);//reset the timer on match

LPC\_PWM1->MR0=24999;//ton+toff = 1ms

LPC\_PWM1->PCR=(1<<9);//PWM1 enable

}

int main (void)

{

PWM\_init();

while(1)

{

LPC\_PWM1->MR1=6250; //ton, duty cycle = 24999/6250=25%

//ton=12500,duty cycle = 24999/12500=50%

//ton=18750,duty cycle = 24999/18750=75%

LPC\_PWM1->LER=(1<<1);//Enable the bits in LER register to load and latch the new

//match values in MR1 register

}

}

**Logic:**

Duty Cycle = ton/ton+ton = ton/T

Ex: T = 24999 and ton=6250, Duty Cycle = 25%

Similarly if T = 24999, for 50% Duty Cycle, ton = 12500

**// C programming of PWM1 , PWM2 and PWM3 with different duty cycle**

#include<stdio.h>

#include <lpc17xx.h>

void PWM\_init(void)

{

LPC\_PINCON->PINSEL3 |= (2<<4)|(2<<8)|(2<<10);// pwm1.1 p1.18,pwm1.2 p1.20,pwm1.3 p1.21

LPC\_PWM1->TCR=(1<<0);// enable counter and PWM

LPC\_PWM1->PR=0;//to fix the period of pwm

LPC\_PWM1->MCR=(1<<1);//reset the timer on match

LPC\_PWM1->MR0=24999;//ton+toff = 1ms

LPC\_PWM1->PCR=(1<<9)|(1<<10)|(1<<11);//PWM1,PWM2andPWM3 enable

}

int main (void)

{

PWM\_init();

while(1)

{

LPC\_PWM1->MR1=6250;//ton,duty cycle = 24999/6250=25%

LPC\_PWM1->MR2=12500;//ton=12500,duty cycle = 24999/12500=50%

LPC\_PWM1->MR3=18750;//ton=18750,duty cycle = 24999/18750=75%

LPC\_PWM1->LER=0xe;//Enable the bits in LER register to load and latch the new

//match values in MR1,MR2 and MR3 registers

}

}

**// C programming of PWM1 with different duty cycle to control the speed of DC motor/dimming of**

**LED**

#include<stdio.h>

#include <lpc17xx.h>

uint32\_t x;

void delay(uint32\_t);

void PWM\_init(void)

{

LPC\_PINCON->PINSEL3 |= (2<<4);// pwm1.1 , p1.18

LPC\_PWM1->TCR=(1<<0);// enable counter and PWM

LPC\_PWM1->PR=0;//to fix the period of pwm

LPC\_PWM1->MCR=(1<<1);//reset the timer on match

LPC\_PWM1->MR0=500;//24999;//ton+toff = 1ms

LPC\_PWM1->PCR=(1<<9);//PWM enable

}

int main (void)

{

PWM\_init();

while(1)

{

for(x=0;x<=500;x=x+10)

{

LPC\_PWM1->MR1=x; //ton,duty cycle = 24999/6250=25%

//ton=12500,duty cycle = 24999/12500=50%

//ton=18750,duty cycle = 24999/18750=75%

LPC\_PWM1->LER=(1<<1);//Enable the bits in LER register to load and latch the new

//match values

delay(300000);

}

}

}

void delay(uint32\_t i)

{

uint32\_t a;

for(a=0;a<=i;a++);

}