**Lab 12: Interfacing DAC with 8051**

**Task:You can use a button, when pressed once then generate triangular wave, when pressed again generate the square wave and so on.**

*#include* *<reg51.h>*

*#include* *<stdio.h>*

*sbit* *port* *=P1^1;*

*sbit* *button=P3^2;*

*int* *val;*

*int* *c=1;*

*void* *delay(unsigned* *int* *x);*

*void* *sine\_wave();*

*void* *square();*

*void* *traingular\_wave();*

*void* *sawtooth\_wave();*

*void* *delay(unsigned* *int* *x){*

*unsigned* *int* *i;*

*for(i=0;i<x;i++);*

*}*

*void* *sine\_wave(){*

*int* *sine[]={128,192,238,255,238,192,128,64,17,0,17,64,* *128,192,238,255,238,192,128,64,17,0,17,64};*

*int* *i;*

*for(i=0;i<23;* *i++){*

*P1=sine[i];*

*delay(15);*

*}*

*}*

*void* *square(){*

*P1=0x00;*

*delay(100);*

*P1=0xFF;*

*delay(100);*

*}*

*void* *triangular\_wave()* *{*

*int* *i;*

*for(i* *=* *0;* *i* *<* *256;* *i++)* *{*

*P1* *=* *i;*

*delay(10);*

*}*

*for(i* *=* *255;* *i* *>=* *0;* *i--)* *{*

*P1* *=* *i;*

*delay(10);*

*}*

*}*

*void* *sawtooth\_wave()* *{*

*int* *i;*

*for(i* *=* *0;* *i* *<* *256;* *i++)* *{*

*P1* *=* *i;*

*delay(10);*

*}*

*}*

*void* *init\_interrupt()* *{*

*IT0* *=* *1;*

*EX0* *=* *1;*

*EA* *=* *1;*

*}*

*void* *i\_e()* *interrupt* *0{*

*c++;*

*if(c==4){*

*c=0;*

*}*

*}*

*void* *main(void)*

*{*

*init\_interrupt();*

*while(1)*

*{*

*if(c<3* *&&* *button==0)*

*{*

*c++;*

*}*

*else* *if(c==3* *&&* *button==0)*

*{*

*c=0;*

*}*

*if(c==0)*

*{*

*if(button==0)*

*{*

*c=1;*

*}*

*else*

*{*

*sine\_wave();*

*}*

*}*

*else* *if(c==1)*

*{*

*if(button==0)*

*c=2;*

e*lse*

*square();*

*}*

*else* *if(c==2)*

*{*

*if(button==0)*

*c=3;*

*else*

*triangular\_wave();*

*}*

*else* *if(c==3)*

*{*

*if(button==0)*

*c=0;*

*else*

*sawtooth\_wave();*

*}*

*}*

*}*

Code for Converting Analog Temperature Signal to Digital

Output







