

Stepper motor

```
#include <reg52.h>

#define Stepper_Port P0          /* Define Stepper Motor Port */

/* Function to provide delay of 1ms at 11.0592 MHz */
void delay(unsigned int count)
{
    int i,j;
    for(i=0; i<count; i++)
        for(j=0; j<112; j++);
}

int main(void)
{
    int i,period;
    period = 100; /* Set period in between two steps of Stepper Motor */
    while (1)
    {
        /* Rotate Stepper Motor clockwise with Half step sequence */
        for(i=0; i<12; i++)
        {
            Stepper_Port = 0x09;
            delay(period);
            Stepper_Port = 0x08;
            delay(period);
            Stepper_Port = 0x0C;
            delay(period);
            Stepper_Port = 0x04;
            delay(period);
            Stepper_Port = 0x06;
            delay(period);
            Stepper_Port = 0x02;
            delay(period);
            Stepper_Port = 0x03;
            delay(period);
            Stepper_Port = 0x01;
            delay(period);
        }
        /* last one step to acquire initial position */
        Stepper_Port = 0x09;
        delay(period);
        delay(1000);
        /* Rotate Stepper Motor Anticlockwise with Full step sequence */
        for(i=0; i<12; i++)
```

```

        {
            Stepper_Port = 0x09;
            delay(period);
            Stepper_Port = 0x03;
            delay(period);
            Stepper_Port = 0x06;
            delay(period);
            Stepper_Port = 0x0C;
            delay(period);
        }
        Stepper_Port = 0x09;
        delay(period);
        delay(1000);
    }
}

```

DAC RAMP

```

#include <reg51.h>

int main (void)
{
    unsigned char i = 0;    //Define a counter

    P1 = 0x00;              //make port P2 as output port

    while (1)               // Do forever
    {
        P1 = i;             // copy i into port P2 to be converted

        i++;                // increment the counter
    }

    return 0;
}

```

DAC TRIANGLE

```
#include<reg51.h>

//sbit CS=P3^3; //CS of DAC 0832

//sbit WR1=P3^4; //WR1 of DAC 0832

//sbit XFER=P3^5;

void main()                // Start of main() function
{
    P1 = 0x00;              // Initialize Port 1 as Output Port
    // CS=0;

    while(1)                // Infinite Loop
    {
        do
        {
            // WR1=1;

            // XFER=1;

            P1 += 0x05;

            // WR1=0;

            // XFER=0;

        }

        while(P1<0xFF);

    }

    do
```

```

    {
//      WR1=1;

//      XFER=1;

        P1 -= 0x05;

//      WR1=0;

//      XFER=0;

    }

    while(P1>0x00);

}
}

```

DAC SQUARE

```
#include<reg51.h>
```

```
//sbit CS=P3^3;
```

```
//sbit WR1=P3^4;
```

```
//sbit XFER=P3^5;
```

```
void delay(int time);           // delay() function prototype, this function generates delay =
(time x 1msec)
```

```
// For example delay(500). Generates delay of (500 x 1msec) = 500msec
```

```
void main()                    // Start of main() function
```

```
{
```

```

P1 = 0x00;           // Initialize Port 1 as Output Port

while(1)             // Infinite Loop
{
    //    WR1=1;

    //    XFER=1;

    P1 = 0xFF;       // Send maximum value to Port1 for
                     //getting High Period of Square Wave

    //    WR1=0;

    //    XFER=0;

    delay(1);        // Call delay() to get 1msec of duty cycle
                     //for High Period

    //    WR1=1;

    //    XFER=1;

    // Delay calculated as 1 x 1msec = 1msec

    P1 = 0x00;

    // Send minimum value to Port1 for getting
    //Low Period of Square Wave

    //    WR1=0;

```

```

    // XFER=0;

    // delay(1);

delay(1); // Call delay() to get 1msec of duty cycle for Low Period

}

}

```

```

void delay(int time) // Start of delay() function.

    //Delay() function generates delay of desired amount.

{

    int i,j;        // Initialize variable i,j for generating Delay

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

        // Use Nested For loops to generate desired

        // amount of delay.(Repeat 1ms delay by value

        // stored in variable 'time')

        for(j=0;j<=2;j++); // this for loop generates delay of

        //1 millisecond

}

```

DAC SINE WAVE

```
#include<reg51.h>
sfr DAC = 0x90; //Port P1 address
void main(){
    int sin_value[12] = { 128,192,238,255,238,192,128,64,17,0,17,64};
    int i;
    while(1){
        //infinite loop for LED blinking
        for(i = 0; i<12; i++){
            DAC = sin_value[i];
        }
    }
}
```