13. To interface *Stepper motor* with *ARM* processor-- ARM7TDMI/LPC2148. Write a program to rotate stepper motor

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// STEPPER MOTOR INTERFACING

#include <LPC21xx.h>

void clock_wise(void) ;
void anti_clock_wise(void) ;

unsigned int var1 ;
unsigned long int i = 0 , j = 0 , k = 0 ;

int main(void)
{
      PINSEL2 = 0x00000000;             //P1.20 to P1.23 GPIO
      IO1DIR |= 0x00F00000 ;           //P1.20 to P1.23 made as output

      while(1)
      {
            for( j = 0 ; j < 50 ; j++ )       // 50 times in Clock wise Rotation
                  clock_wise() ;                     // rotate one round clockwise

            for( k = 0 ; k < 65000 ; k++ ) ; // Delay to show  anti_clock Rotation

            for( j=0 ; j < 50 ; j++ )     // 50 times in  Anti Clock wise Rotation
                  anti_clock_wise() ;   // rotate one round anticlockwise

            for( k = 0 ; k < 65000 ; k++ ) ;  // Delay to show ANTI_clock Rotation
      }

}// End of main

void clock_wise(void)
{
    var1 = 0x00080000;                  //For Clockwise
    for( i = 0 ; i <= 3 ; i++ )       // for A B C D Stepping
      {
            var1 <<= 1 ;
            IO1CLR =0x00F00000 ;          //clearing all 4 bits
            IO1SET = var1 ;               // setting perticular bit
            for( k = 0 ; k < 3000 ; k++ ); //for step speed variation
      }
}

void anti_clock_wise(void)
{
    var1 = 0x00800000 ;                          //For Anticlockwise
    IO1CLR =0x00F00000 ;                         //clearing all 4 bits
    IO1SET = var1 ;
    for( k = 0 ; k < 3000 ; k++ ) ;
     for( i = 0 ; i < 3 ; i++ )             // for A B C D Stepping
      {
            var1 >>=1;                          //rotating bits
            IO1CLR =0x00F00000 ;              // clar all bits before setting
            IO1SET = var1 ;                             // setting perticular bit
            for( k = 0 ; k < 3000 ; k++ ) ;       //for step speed variation
      }
}
```