```
Square
        AREA SQUARE , CODE, READONLY
ENTRY
START
        LDR R0, = TABLE1
        MOV R1,#3
        MOV R1, R1, LSL#0x2
        ADD R0, R0, R1
        LDR R3, [R0]
B1 B B1
TABLE1
        DCD 0X00000000
        DCD 0X00000001
        DCD 0X00000004
        DCD 0X00000009
        DCD 0X00000010
        DCD 0X00000019
        DCD 0X00000024
        DCD 0X00000031
        DCD 0X00000040
        DCD 0X00000051
        DCD 0X00000064
END
```

```
Largest
        AREA LARGEST , CODE, READONLY
ENTRY
START
        MOV R5,#6
        LDR R1,=VALUE1
        LDR R2,[R1],#4
LOOP
        LDR R4,[R1],#4
        CMP R2,R4
        BHI LOOP1 (For smallest BLI)
        MOV R2,R4
LOOP1
        SUBS R5,R5,#1
        CMP R5,#0
        BNE LOOP
        LDR R4,=RESULT
        STR R2,[R4]
B1 B B1
VALUE1
        DCD 0X44444444
        DCD 22,55,33,AA,CC,99
        AREA DATA2,DATA,READWRITE
RESULT DCD 0X0 END
```

```
        AREA DESCENDING, CODE, READONLY
ENTRY
START
        MOV R8,#4
        LDR R2,=CVALUE
        LDR R3,=DVALUE
LOOP0
        LDR R1,[R2],#4
        STR R1,[R3],#4
        SUBS R8,R8,#1
        CMP R8,#0
        BNE LOOP0
START1
        MOV R5,#3
        MOV R7,#0
        LDR R1,=DVALUE
LOOP
        LDR R2,[R1],#4
        LDR R3,[R1]
        CMP R2,R3
        BGT LOOP2
        STR R2,[R1],#-4
        STR R3,[R1]
        MOV R7,#1
        ADD R1,#4
LOOP2
        SUBS R5,R5,#1
        CMP R5,#0
        BNE LOOP
        CMP R7,#0
        BNE START1
B1 B B1
CVALUE
        DCD 0X44,11,33,22
        AREA DATA1,DATA,READWRITE
DVALUE
        DCD 0X00000000   END
```

```
AREA ONEZERO, CODE, READONLY
ENTRY
START
        MOV R2,#0
        MOV R3,#0
        MOV R7,#2
        LDR R6,=VALUE
LOOP
        MOV R1,#32
        LDR R0,[R6],#4
LOOP0
        MOVS R0,R0,ROR #1
        BHI ONES
ZEROS ADD R3,R3,#1
        B LOOP1
ONES ADD R2,R2,#1
LOOP1 SUBS R1,R1,#1
        BNE LOOP0
        SUBS R7,R7,#1
        CMP R7,#0
        BNE LOOP
B1 B B1
VALUE DCD 0X11111111, 0XAA55AA55
        END
```

```
 #include <lpc214x.h>
void uart_interrupt(void)__irq;
unsigned char temp;
unsigned char rx_flag=0,tx_flag=0;
int main(void){
PINSEL0=0X00000050
IODIR1 = 0X00ff0000;
U0LCR = 0X00000083;
U0DLM = 0X00;
U0DLL = 0x13;
U0LCR = 0X00000003;
U0IER = 0X03;
VICVectAddr0 = (unsigned long)uart_interrupt;
VICVectCntl0 = 0x20| 6;
VICIntEnable = 0x00000040;
rx_flag = 0x00;
tx_flag = 0x00;
while(1) {
while(rx_flag == 0x00);
rx_flag = 0x00;
while(tx_flag == 0x00);
tx_flag = 0x00; }}
void uart_interrupt(void)__irq
{ temp = U0IIR;
temp = temp & 0x06;
if(temp == 0x02)
{ tx_flag = 0xff;
VICVectAddr=0; }
else if(temp == 0x04)
{ U0THR = U0RBR;
rx_flag = 0xff;
VICVectAddr=0;
}
        }
```

```
Stepper motor
#include <LPC21xx.H>
void clock_wise(void);
void anti_clock_wise(void);
unsigned long int var1,var2;
unsigned int i=0,j=0,k=0;
int main(void) {
PINSEL0 = 0x00FFFFFF;
IO0DIR  |= 0x0000F000;
while(1) {
for(j=0;j<50;j++)
clock_wise();
for(k=0;k<65000;k++);
for(j=0;j<50;j++)
anti_clock_wise();
for(k=0;k<65000;k++); } }
void clock_wise(void)
{ var1 = 0x00000800;
for(i=0;i<=3;i++)
var1 = var1<<1;
var2 = var1;
var2 = var2 & 0x0000F000;
IO0PIN = var2;
for(k=0;k<30000;k++);}}
void anti_clock_wise(void) {
var1 = 0x00010000;
for(i=0;i<=3;i++) {
var1 = var1>>1;
var2 = var1;
var2 = var2 & 0x0000F000;
IO0PIN = var2;
        for(k=0;k<30000;k++); } }
```

```
        DC motor
        #include<lpc214x.h>
        void clock_wise(void);
        void anti_clock_wise(void);
        unsigned int j=0;
        int main(){
        IO0DIR= 0X00000900;
        IO0SET= 0X00000100;
        while(1) {
        clock_wise();
        for(j=0;j<400000;j++);
        anti_clock_wise();
        for(j=0;j<400000;j++); }}
        void clock_wise(void)
        { IO0CLR = 0x00000900;
        for(j=0;j<10000;j++);
        IO0SET = 0X00000900; }
        void anti_clock_wise(void){
        IO0CLR = 0X00000900;
        for(j=0;j<10000;j++);
        IO0SET = 0X00000100; }
```

```
        SQUARE wave #include <lpc21xx.h>
        void delay(void);
        int main (){
        PINSEL0 = 0x00000000 ;
        PINSEL1 = 0x00000000 ;
        IO0DIR = 0x00FF0000 ;
        while(1) {
        IO0PIN = 0x00000000; delay();
        IO0PIN = 0x00FF0000; delay(); }}
        void delay(void){
        unsigned int i=0;
        for(i=0;i<=95000;i++);}
        triangle wave
        #include <LPC21xx.h>
        int main (){
        unsigned long int temp=0x00000000;
        unsigned int i=0;
        IO0DIR=0x00FF0000;
        while(1) {
        for(i=0;i!=0xFF;i++) {
        temp=i;
        temp = temp << 16;
        IO0PIN=temp; }
        for(i=0xFF; i!=0;i--)
        { temp=i;
        temp = temp << 16;
        IO0PIN=temp; } }}
```

```
7 segment led
#include <LPC21XX.h>
unsigned int delay;
unsigned int Switchcount=0;
unsigned int Disp[16]={0x003F0000,06,5B,4F,66, 6D, 7D, 07, 7F, 6F,
77,7C,39,5E,79,71 };
#define SELDISP1 0x10000000
#define SELDISP2 0x20000000
#define SELDISP3 0x40000000
#define SELDISP4 0x80000000
#define ALLDISP 0xF0000000
#define DATAPORT 0x00FF0000
int main (void){
PINSEL0 = 0x00000000;
PINSEL1 = 0x00000000;
IO0DIR = 0xF0FF0000;
IO1DIR = 0x00000000;
while(1) {
IO0SET |= ALLDISP;
IO0CLR = 0x00FF0000;
IO0SET = Disp[Switchcount];
if(!(IO1PIN & 0x00800000)) {
for(delay=0;delay<100000;delay++) {}
if(!(IO1PIN & 0x00800000)) {
Switchcount++;
if(Switchcount == 0x10) {
Switchcount = 0;
IO0CLR = 0xF0FF0000;
        } } } } }
```