

Appendix A

MikroC Code

```
int x,i=0;          // define integer variables x & i
```

```
void rotate0()      //0 Degree function
```

```
{
```

```
  for(i=0;i<5;i++)
```

```
  {
```

```
    PORTB = x;
```

```
    Delay_us(800);
```

```
    PORTB = 0;
```

```
    Delay_us(19200);
```

```
  }
```

```
  x=0;
```

```
}
```

```
void rotate90()     //90 Degree function
```

```
{
```

```
  for(i=0;i<5;i++)
```

```
  {
```

```
    PORTB= x;
```

```
    Delay_us(1500);
```

```
    PORTB = 0;
```

```
    Delay_us(18500);
```

```

    }

    x=0;

}

void rotate180()    //180 Degree function
{
    for(i=0;i<5;i++)
    {
        PORTB=x;

        Delay_us(2200);

        PORTB = 0;

        Delay_us(17800);
    }

    x=0;
}

void relax()    // relax function
{
    x=31;

    rotate180();
}

void one()    // one sign function
{
    while(portc=1) {

        x=29;

```

```
    rotate0() ;  
}  
}  
void two()      // two sign function  
{  
    while(portc=2) {  
        x=25;  
        rotate0() ;  
    }  
}  
void three()    // three sign function  
{  
    while(portc=3) {  
        x=17;  
        rotate0() ;  
    }  
}  
void four()     // four sign function  
{  
    while(portc=4) {  
        x=1;  
        rotate0() ;  
    }  
}
```

```

}

void five()          // five sign function
{
while(portc=5) {
    relax();
}
}

void grip()          //grip function
{
    while(portc=6) {
        x=31;
        rotate90() ;
    }
}

void ok()            // ok sign function
{
    while(portc=7) {
        x=3;
        rotate90() ;
    }
}

void main()
{

```

```

TRISB = 0;          // PORTB as Output Port
TRISD = 1;          // PORTD as input Port
portD=0; portb=0; // clear port b & port D
while(1)            // infint loop
{
    switch (portD){  // read port D status
        case 0:relax();break;
        case 1:relax();one();break;
        case 2:relax();tow();break;
        case 3:relax();three();break;
        case 4:relax();four();break;
        case 5:relax();five();break;
        case 6:relax();grip();break;
        case 7:relax();ok();break;
    }
}
}

```

Appendix B

LM7805 Datasheet

Appendix C

LM317 Datasheet

Appendix D

PIC16F877A Datasheet

Appendix D

SpeakUp Circuit Diagram

