DAFTAR LAMPIRAN

Lampiran 1

```
/*****************************************************
This program was produced by the
CodeWizardAVR V2.04.4a Advanced
Automatic Program Generator
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Project : Detector Kebisingan
Version :
Date : 8/15/2015
Author : NeVaDa
Company : amj
Comments :

Chip type : ATmega16
Program type : Application
AVR Core Clock frequency : 11.059200 MHz
Memory model : Small
External RAM size : 0
Data Stack size : 256
*****************************************************/

#include <mega16.h>
#include <stdio.h>
#include <delay.h>

// Alphanumeric LCD Module functions
#asm
```

```
  .equ __lcd_port=0x15 ;PORTC
#endasm
#include <lcd.h>

char buf[33];
unsigned char data;

#define ADC_VREF_TYPE 0x20  // sensor suara

// Read the 8 most significant bits
// of the AD conversion result
unsigned char read_adc(unsigned char adc_input)
{
ADMUX=adc_input | (ADC_VREF_TYPE & 0xff);
// Delay needed for the stabilization of the ADC input voltage
delay_us(10);
// Start the AD conversion
ADCSRA|=0x40;
// Wait for the AD conversion to complete
while ((ADCSRA & 0x10)==0);
ADCSRA|=0x10;
return ADCH;
}

// Declare your global variables here

void main(void)
{
// Declare your local variables here
unsigned char dataadc;
// Input/Output Ports initialization
// Port A initialization
```

```
// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In Func0=In
// State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T
PORTA=0x00;
DDRA=0x00;

// Port B initialization
// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In Func0=In
// State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T
PORTB=0x00;
DDRB=0x00;

// Port C initialization
// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In Func0=In
// State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T
PORTC=0x00;
DDRC=0x00;

// Port D initialization
// Func7=Out Func6=Out Func5=Out Func4=Out Func3=Out Func2=Out Func1=Out Func0=Out
// State7=0 State6=0 State5=0 State4=0 State3=0 State2=0 State1=0 State0=0
PORTD=0x00;
DDRD=0xFF;

// Timer/Counter 0 initialization
// Clock source: System Clock
```

```
// Clock value: Timer 0 Stopped
// Mode: Normal top=FFh
// OC0 output: Disconnected
TCCR0=0x00;
TCNT0=0x00;
OCR0=0x00;

// Timer/Counter 1 initialization
// Clock source: System Clock
// Clock value: Timer1 Stopped
// Mode: Normal top=FFFFh
// OC1A output: Discon.
// OC1B output: Discon.
// Noise Canceler: Off
// Input Capture on Falling Edge
// Timer1 Overflow Interrupt: Off
// Input Capture Interrupt: Off
// Compare A Match Interrupt: Off
// Compare B Match Interrupt: Off
TCCR1A=0x00;
TCCR1B=0x00;
TCNT1H=0x00;
TCNT1L=0x00;
ICR1H=0x00;
ICR1L=0x00;
OCR1AH=0x00;
OCR1AL=0x00;
OCR1BH=0x00;
OCR1BL=0x00;

// Timer/Counter 2 initialization
// Clock source: System Clock
```

```
// Clock value: Timer2 Stopped
// Mode: Normal top=FFh
// OC2 output: Disconnected
ASSR=0x00;
TCCR2=0x00;
TCNT2=0x00;
OCR2=0x00;

// External Interrupt(s) initialization
// INT0: Off
// INT1: Off
// INT2: Off
MCUCR=0x00;
MCUCSR=0x00;

// Timer(s)/Counter(s) Interrupt(s) initialization
TIMSK=0x00;

// Analog Comparator initialization
// Analog Comparator: Off
// Analog Comparator Input Capture by Timer/Counter 1: Off
ACSR=0x80;
SFIOR=0x00;

// ADC initialization
// ADC Clock frequency: 691.200 kHz
// ADC Voltage Reference: AREF pin
// ADC Auto Trigger Source: None
// Only the 8 most significant bits of
// the AD conversion result are used
ADMUX=ADC_VREF_TYPE & 0xff;
ADCSRA=0x84;
```

```
// LCD module initialization
lcd_init(16);
PORTD.1=0;
delay_ms(100);
lcd_gotoxy(0,0);
lcd_putsf(" DETEKTOR SUARA ");
lcd_gotoxy(0,1);
lcd_putsf("    MADE IN     ");
delay_ms(500);
lcd_gotoxy(0,0);
lcd_putsf(" PRIYO AGUNG S. ");
lcd_gotoxy(0,1);
lcd_putsf("   11520228     ");
delay_ms(500);
lcd_gotoxy(0,0);
lcd_putsf("                ");
lcd_gotoxy(0,1);
lcd_putsf("LOADING...       ");
delay_ms(100);
lcd_gotoxy(0,0);
lcd_putsf("                ");
lcd_gotoxy(0,1);
lcd_putsf("LOADING.....  ");
delay_ms(100);
lcd_gotoxy(0,0);
lcd_putsf("                ");
lcd_gotoxy(0,1);
lcd_putsf("LOADING.........");
delay_ms(100);
lcd_gotoxy(0,0);
lcd_putsf("                ");
```

```
lcd_gotoxy(0,1);
lcd_putsf("                ");
delay_ms(100);

lcd_gotoxy(0,0); // pengujian lcd
lcd_putsf(" Detektor Suara ");
lcd_gotoxy(0,1);
lcd_putsf(" Kondisi Tenang ");
delay_ms(100);

while (1)
   {
     if (PINA.0 == 0)
      {
       lcd_clear();
       lcd_gotoxy(0,0);
       lcd_puts("     BISING     ");
       lcd_gotoxy(0,1);
       lcd_puts(" Harap  Tenang  ");

       PORTD.1=1;
       delay_ms(200);
       PORTD.1=0;

       PORTD.2=1;
       delay_ms(1000);
       PORTD.2=0;

       lcd_clear();
       lcd_gotoxy(0,0);
       lcd_putsf(" Detektor Suara ");
       lcd_gotoxy(0,1);
```

```
            lcd_putsf(" Kondisi Tenang ");
            delay_ms(200);
          }

       }
    }
```

Lampiran 2

Sensor Sound Detector :

Dimensions: length 32mm x width 17mm x 15mm high

the main chip: LM393, electret microphone

the working voltage: 4 to 6 volts DC

characteristics:

1. with the directions of the signal output.
2. single-channel signal output.
3. the output valid signal is low.
4. when a voice output low lights.
5. can be used for voice lights with light sensors make a sound and light alarm, sound control, sound testing occasions.
6. the output switch board!

Lampiran 3

ISD 1820 Module Voice recording :

1. On-board ISD1820 chip.
2. On-board microphone, can directly recording voice.
3. Can play a recording of 20 seconds.
4. High-quality, natural voice restore, can be used as a propaganda module.
5. With a loop playback, jog play, single-pass playback mode.
6. The pins are leaded out , can control operating by microcontroller.
7. Working voltage: 3-5V.

Lampiran 4

1. Smartphone A
   a. LCD : IPS LCD capacitive touchscreen, 16M colors
   b. Size : 5.0 inches (~67.9% screen-to-body ratio)
   c. Resolution : 540 x 960 pixels (~220 ppi pixel density)
   d. OS : Microsoft Windows Phone 8.1
   e. Chipset : Qualcomm Snapdragon 200
   f. CPU : Quad-core 1.2 GHz Cortex-A7
   g. GPU : Adreno 302
   h. Internal : 8 GB ROM, 1 GB RAM

2. Smartphone B
   a. LCD : IPS LCD capacitive touchscreen, 16M colors
   b. Size : 4.7 inches (~67.8% screen-to-body ratio)
   c. Resolution : 720 x 1280 pixels (~312 ppi pixel density)
   d. OS : Android OS, v4.4.4 (KitKat)
   e. Chipset : Qualcomm MSM8916 Snapdragon 410
   f. CPU : Quad-core 1.2 GHz Cortex-A53
   g. GPU : Adreno 306
   h. Internal : 16 GB ROM, 2 GB RAM

3. Smartphone C
   a. LCD : IPS LCD capacitive touchscreen, 16M colors
   b. Size : 5.7 inches (~74.4% screen-to-body ratio)
   c. Resolution : 720 x 1280 pixels (~312 ppi pixel density)
   d. OS : Android OS, v4.4.4 (KitKat)
   e. Chipset : Mediatek MT6589T
   f. CPU : Quad-core 1.5 GHz Cortex-A7
   g. GPU : PowerVR SGX544MP2
   h. Internal : 8 GB ROM, 2 GB RAM

4. Smartphone D
    a. LCD : Capacitive touchscreen, 16M colors
    b. Size : 4.0 inches (~61.3% screen-to-body ratio)
    c. Resolution : 480 x 800 pixels (~233 ppi pixel density)
    d. OS : Android OS, v4.2.2 (Jelly Bean)
    e. Chipset : Mediatek MT6572
    f. CPU : Dual-core 1.3 GHz Cortex-A7
    g. GPU : Mali-400
    h. Internal : 4 GB ROM, 512 MB RAM

5. Smartphone E
    a. LCD : TFT capacitive touchscreen, 16M colors
    b. Size : 4.0 inches (~61.3% screen-to-body ratio)
    c. Resolution : 480 x 800 pixels (~233 ppi pixel density)
    d. OS : Android OS, v4.4.2 (KitKat)
    e. GPU : 1,2 Ghz
    f. Internal : 4 GB ROM, 512 MB RAM