Program pada ADC Vision AVR:

```
/*****************************************************
This program was produced by the
CodeWizardAVR V2.04.8b Evaluation
Automatic Program Generator
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Project :
Version :
Date    : 29/07/2010
Author  : Freeware, for evaluation and non-commercial use only
Company :
Comments:

Chip type               : ATmega16
Program type            : Application
AVR Core Clock frequency: 12,000000 MHz
Memory model            : Small
External RAM size       : 0
```

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Data Stack size         : 256
*****************************************************/

#include <mega16.h>
#include <delay.h>
#define ADC_VREF_TYPE 0x00
// Read the AD conversion result
unsigned int 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 ADCW;
}
void main(void)
{
```

```
// Declare your local variables here


// 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
```

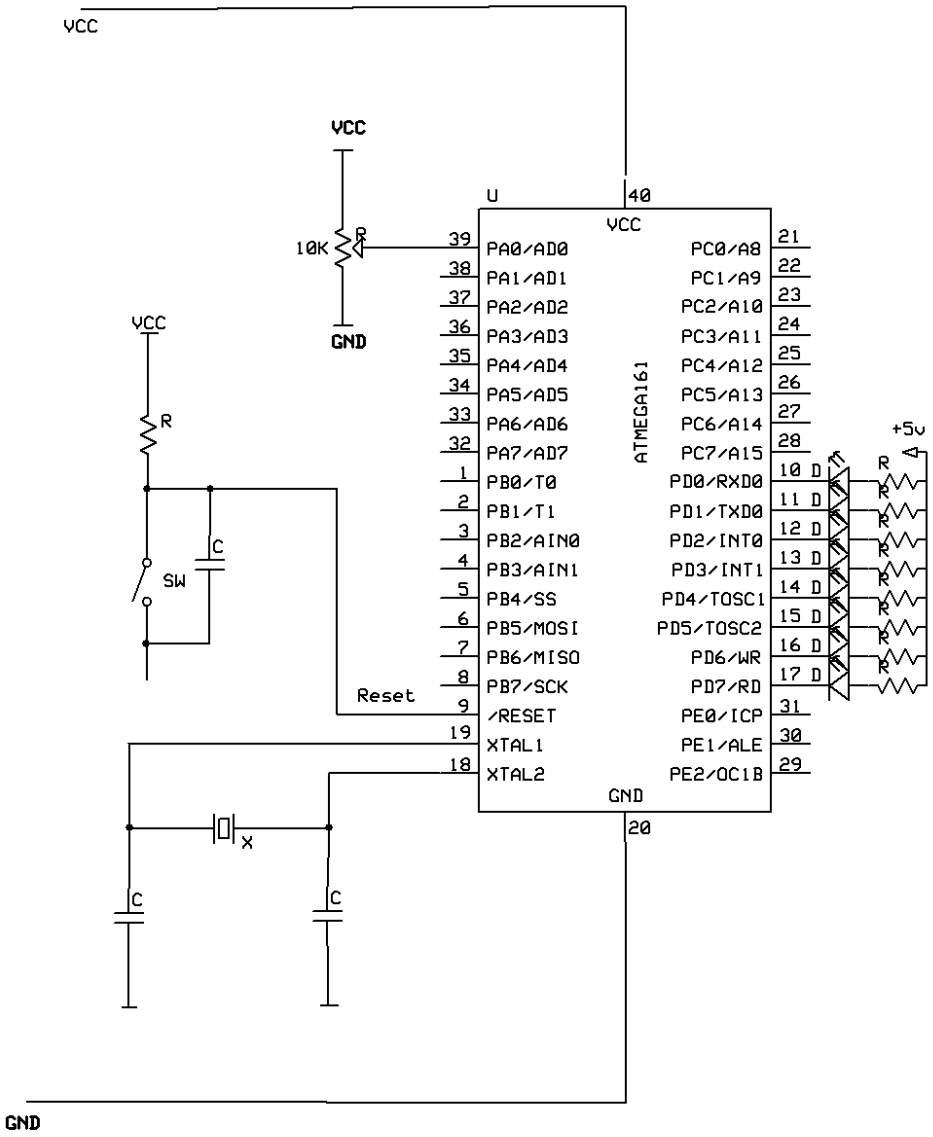
```
// Analog Comparator Input Capture by Timer/Counter 1: Off
ACSR=0x80;
SFIOR=0x00;

// ADC initialization
// ADC Clock frequency: 12000 kHz
// ADC Voltage Reference: AREF pin
// ADC Auto Trigger Source: ADC Stopped
ADMUX=ADC_VREF_TYPE & 0xff;
ADCSRA=0x87;

while (1)
      {
      // Place your code here
      temp= read_adc(0);
      vin=((float) temp * 0.00488);
      //vin=(float(temp) * (5 volt/1024))
      if((vin>=2.2)&&(vin<2.3))
      {
      PORTD=0b00000000;
      delay_ms(50);}
```

```
if((vin>2)&&(vin<2.2))
{
PORTD=0b10000000;
delay_ms(50);}
if((vin>=1.75)&&(vin<2))
{
PORTD=0b11000000;
delay_ms(50);}
 if((vin>=1.5)&&(vin<1.75))
{
PORTD=0b11100000;
delay_ms(50);}
  if((vin>1.25)&&(vin<1.5))
{PORTD=0b11110000;
delay_ms(50);}
if((vin>=1)&&(vin<1.25))
{PORTD=0b11111000;
delay_ms(50);}
if((vin>=0.75)&&(vin<1))
{PORTD=0b11111100;
delay_ms(50);}
```

```
    if((vin>=0.5)&&(vin<0.75))
    {PORTD=0b11111110;
    delay_ms(50);
    PORTD=0b11111111;
    delay_ms(50);}
    if((vin>=0.25)&&(vin<0.5))
    {PORTD=0b11111111;
    delay_ms(50);}
     };
}
    }
}
```


VCC
VCC
10K
R
GND
VCC
R
SW
C
Reset
U
40
VCC
39
PA0/AD0
38
PA1/AD1
37
PA2/AD2
36
PA3/AD3
35
PA4/AD4
34
PA5/AD5
33
PA6/AD6
32
PA7/AD7
1
PB0/T0
2
PB1/T1
3
PB2/AIN0
4
PB3/AIN1
5
PB4/SS
6
PB5/MOSI
7
PB6/MISO
8
PB7/SCK
9
/RESET
19
XTAL1
18
XTAL2
ATMEGA161
21
PC0/A8
22
PC1/A9
23
PC2/A10
24
PC3/A11
25
PC4/A12
26
PC5/A13
27
PC6/A14
28
PC7/A15
10 D
PD0/RXD0
11 D
PD1/TXD0
12 D
PD2/INT0
13 D
PD3/INT1
14 D
PD4/TOSC1
15 D
PD5/TOSC2
16 D
PD6/WR
17 D
PD7/RD
31
PE0/ICP
30
PE1/ALE
29
PE2/OC1B
GND
20
+5v
R
X
C
C
GND