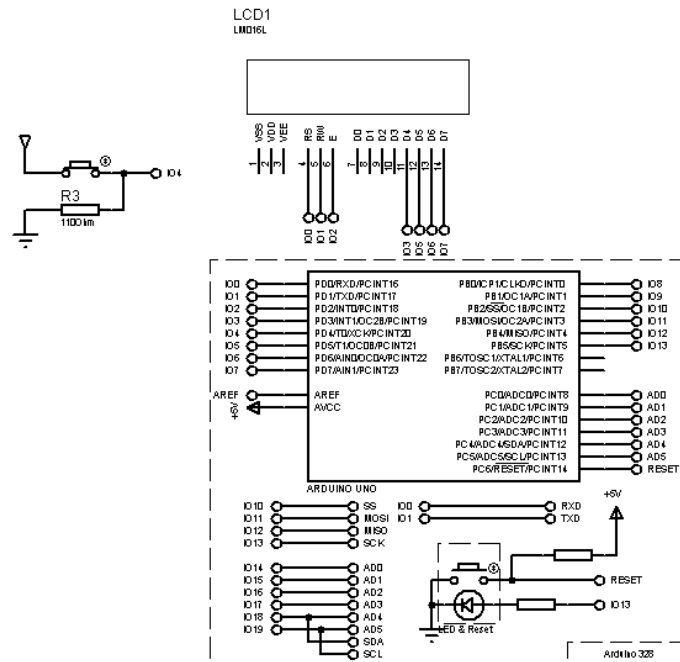Nama : M. Thoriqul Aziz

NIM : 081711733002

Mata Kuliah : Embeded System

1. Timer CTC mode 0
   a. Proteus

   b. Code
```
/*
 * pewaktuCTC.c
 *
 * Created: 5/5/2020 11:00:55 PM
 * Author: Thoriqul Aziz
 */

#include <io.h>
#include <alcd.h>
#include <stdlib.h>

unsigned char lup=0;
unsigned char temp[6];
int waktu;
```

```c
interrupt [TIM0_OVF] void_timer0_ovf_isr(void)
{
   TCNT0=0x69;
   lup++;
   if (lup>=100) {
   waktu++;
   lup=0;
   };
}
void main(void)
{
TCCR0A=0x00;
TCCR0B=0x05;
TCNT0=0x4F;
OCR0A=0x4E;
OCR0B=0x00;
// OCR0A=0xF9;
TIMSK0=0x01;
//TIFR0=0x01;
#asm("sei")

lcd_init(16);
while (1)
  {

  if(waktu==60)
     {
     lcd_clear();
     waktu=0;
     };

  lcd_gotoxy(0,0);
  lcd_putsf("Waktu : ");
  itoa(waktu,temp);
  lcd_gotoxy(0,1);
  lcd_puts(temp);
  }
}
```
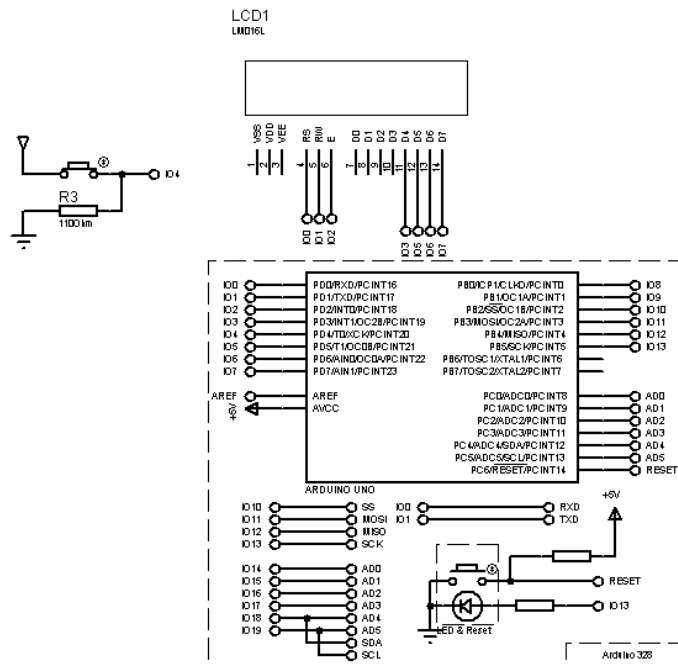c. Status
   FAILED

2. Timer Normal mode 1
   a. Proteus

LCD1
LMD16L

ARDUINO UNO

Arduino 328

   b. Code

```
/*
 * PewaktuTimer1.c
 *
 * Created: 5/6/2020 2:28:26 AM
 * Author: Thoriqul Aziz
 */

#include <io.h>
#include <alcd.h>
#include <stdlib.h>


unsigned char temp[6];
int waktu;
interrupt [TIM1_OVF] void timer1_ovf_isr(void) {
TCNT1H=0xC2F7 >> 8;
TCNT1L=0xC2F7 & 0xff;
waktu++;
```

```
}

void main(void)
{
TCCR1A=0x00;
TCCR1B=0x05;
TCNT1H=0xC2;
TCNT1L=0xF7;
ICR1H=0x00;
ICR1L=0x00;
OCR1AH=0x00;
OCR1AL=0x00;
OCR1BH=0x00;
OCR1BL=0x00;

TIMSK1=0x01;
lcd_init(16);
#asm("sei")
while (1)
   {
   if(waktu==100)
      {
      lcd_clear();
      waktu=0;
      };

   lcd_gotoxy(0,0);
   lcd_putsf("Waktu : ");
   itoa(waktu,temp);
   lcd_gotoxy(0,1);
   lcd_puts(temp);
   }

}
```
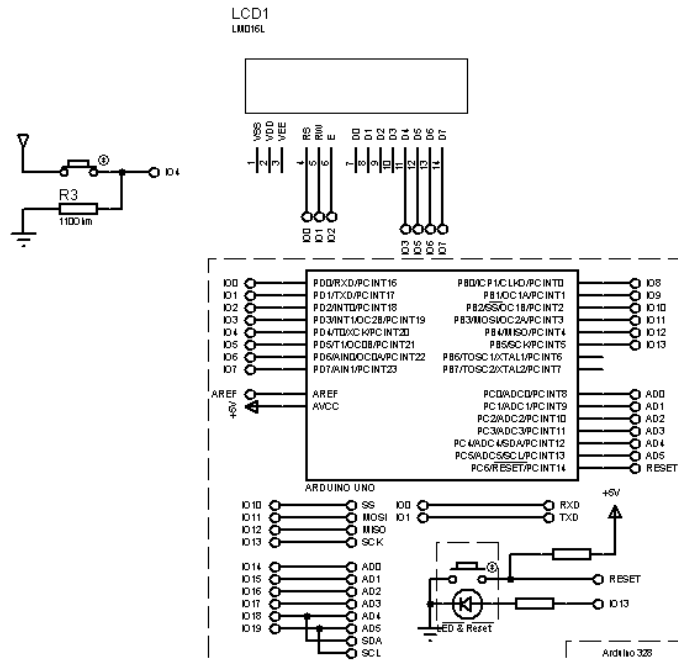c. Status
    WORK!!

3. Counter normal mode 0
    a. Proteus

    b. Code
    ```
    /*
     * lagi.c
     *
     * Created: 5/7/2020 11:41:44 AM
     * Author: Thoriqul Aziz
     */

    #include <io.h>
    #include <alcd.h>
    #include <stdlib.h>

    int data;
    unsigned char temp[6];
    interrupt [TIM0_OVF] void timer0_int0_isr(void)
    {
        data = TCNT0;
    }
    void main(void)
    {
    ```

```c
PORTD=0x10;
DDRD=0x10;
TCCR0A=0x00;
TCCR0B=0x07;
TCNT0=0x00;
OCR0A=0x00;
TIMSK0=0X01;
#asm("sei")
lcd_init(16);
while (1)
   {
   if (data>=256) {
   lcd_clear();
   }
   lcd_gotoxy(0,0);
   lcd_putsf("timer");
   itoa(data,temp); //menampilkan di
   lcd_gotoxy(0,1);
   lcd_puts(temp);
   }
}
```
c. Status

FAILED