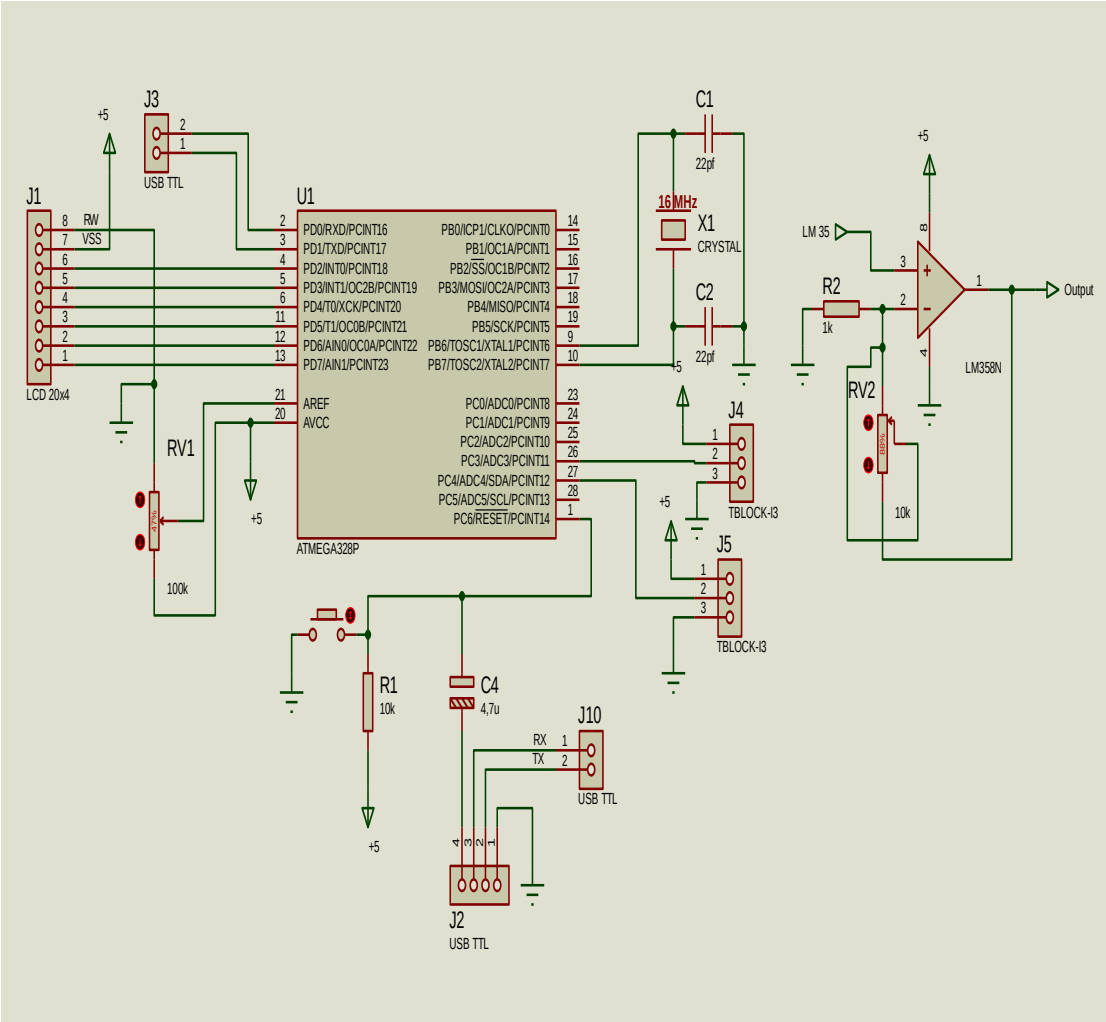
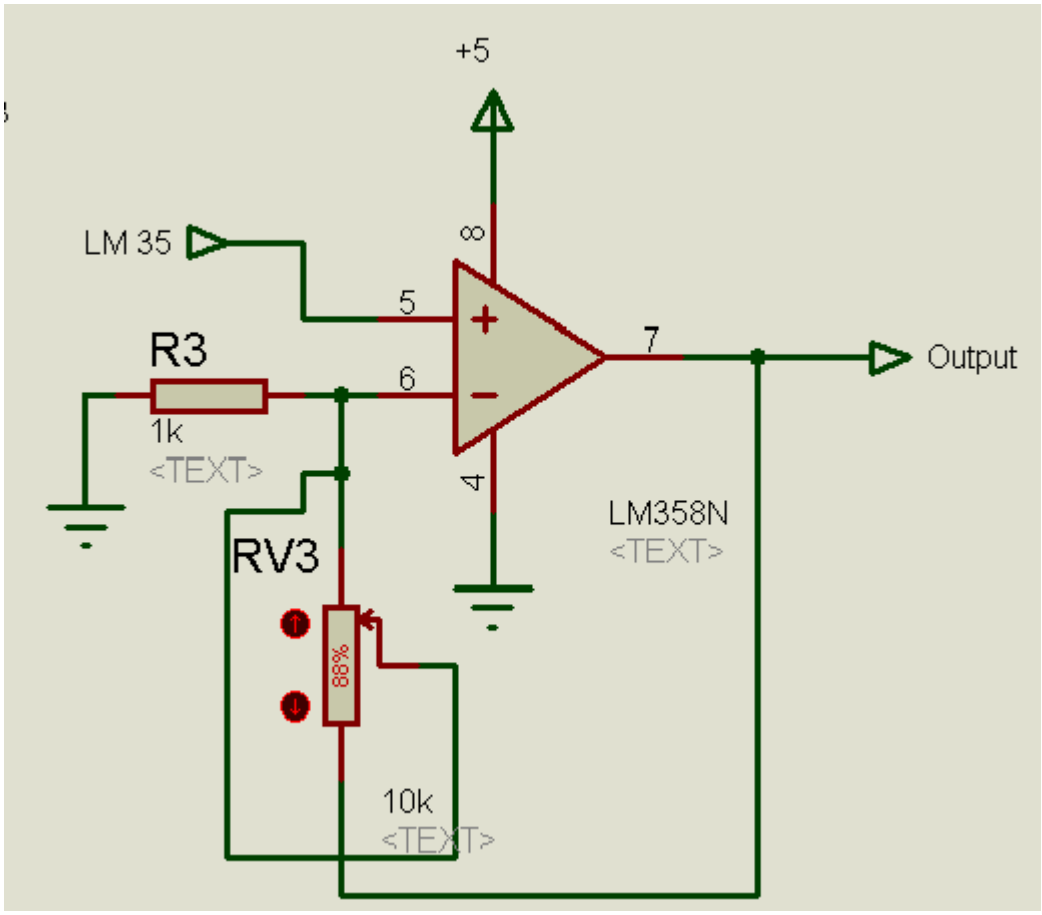
LAMPIRAN

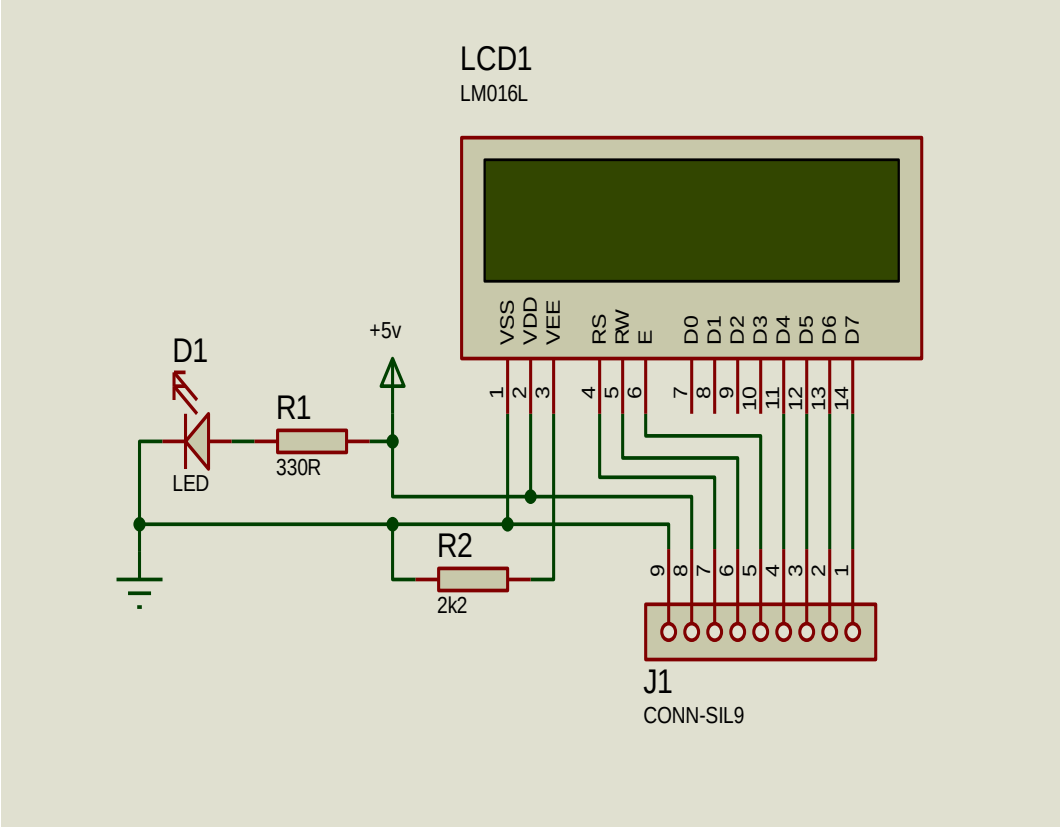
Rangkaian Skematik Sistem Minimum



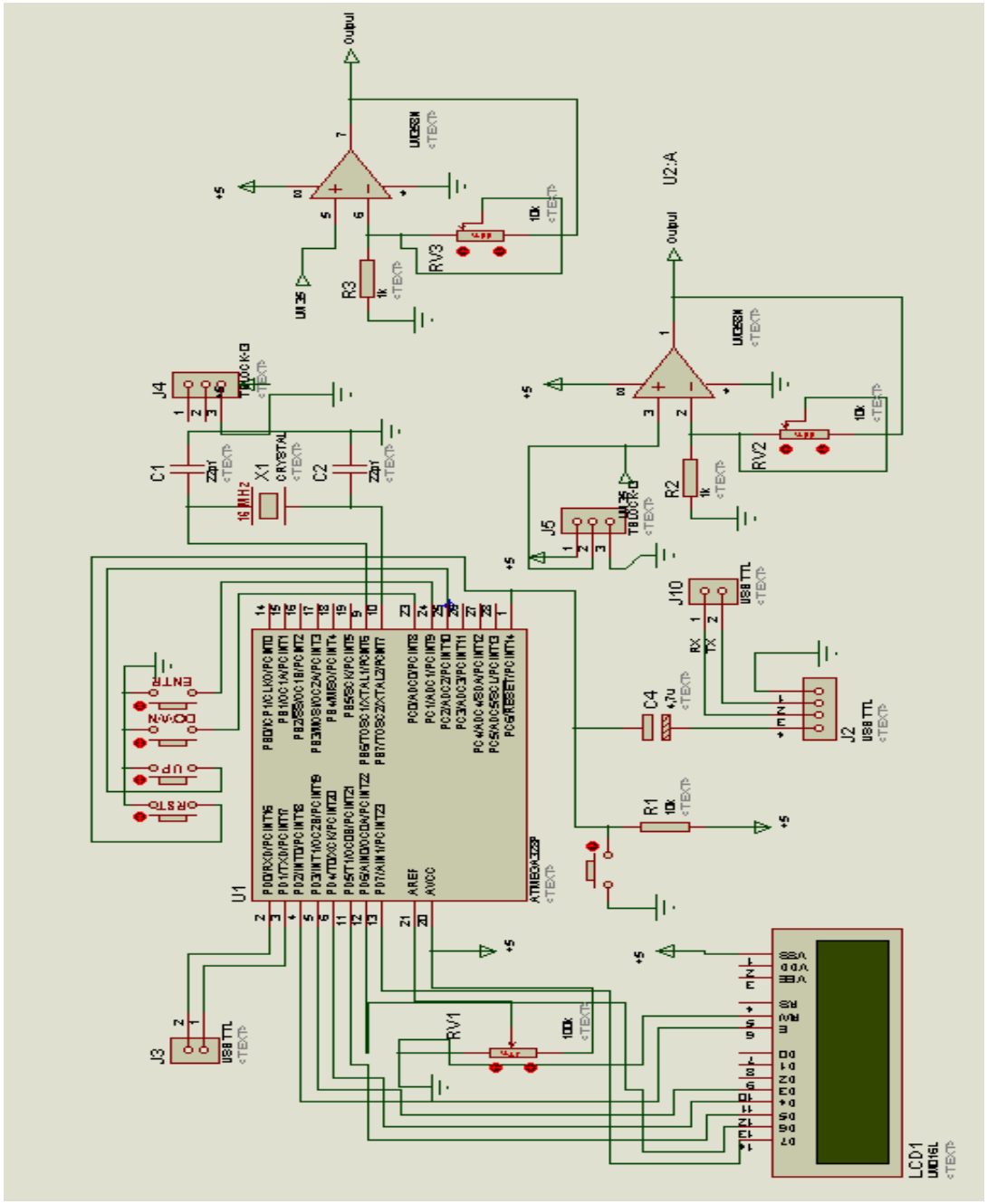
Rangkaian Penguat Non Iverting



Rangkaian *LCD* 16 x 2



Rangkaian Keseluruhan



Listing Program :

```
#include <Wire.h>
#include <LiquidCrystal.h>
//LiquidCrystal lcd(2,3,4,5,6,7);
//int upButton = A0;
//int downButton = A1;
//int enterButton = A2;
//int relay1 = 8;
//int relay2 = 9;
//int buzzer = 10;
//int menu = 1;
//float adc1;
//float tempC;
//int jumlahperulanganbaca = 0;
//float suhutotal;
//int i = 0;
//int tempPin1 = A3;
//int tempPin2 = A4;
//int enter;
//int StopRelay = 0;
//int StopRelay3 = 0;
//void setup() {
  // put your setup code here, to run once:
//Serial.begin(9600);
 //lcd.begin(16,2);
```

```
 //lcd.setCursor(0,0);
 //lcd.print("Embedding System");
 //delay(5000);
 //lcd.clear();
 //pinMode(upButton,INPUT_PULLUP);
  //pinMode(downButton,INPUT_PULLUP);
  //pinMode(enterButton,INPUT_PULLUP);
  //pinMode(tempPin1,INPUT);
  //pinMode(tempPin2,INPUT);
  //pinMode(relay1,OUTPUT);
  //pinMode(relay2,OUTPUT);
  //digitalWrite(relay1, HIGH);
  //digitalWrite(relay2, HIGH);
  //pinMode(10,OUTPUT);
  //updateMenu();
}

//void loop() {
  //if(!digitalRead(downButton)){
    //menu++;
    //enter=0;
   // updateMenu();
    //delay(100);
    //if (menu>2)
    {
```

```
      //menu=2;
    }
    //while(!digitalRead(downButton));
  }
  //if(!digitalRead(upButton)){
    //menu--;
    //enter=0;
    //updateMenu();
    //delay(100);
    //if(menu<1)
    {
      //menu=1;
    }
    //while(!digitalRead(upButton));
  }
   //if(!digitalRead(enterButton)){
    //enter=1;
    //delay(100);
    //while(!digitalRead(enterButton));
}
//if(enter==1)
  {
    //executeAction();
  }
}
```

```
 //void updateMenu(){
  //switch(menu){
    //case 1:
    //lcd.clear();
    //lcd.print(">PEMANAS");
    //lcd.setCursor(0,1);
    //lcd.print(" PENDINGIN");
    //break;
    //case 2:
    lcd.clear();
    //lcd.print(" PEMANAS");
    //lcd.setCursor(0,1);
    //lcd.print(">PENDINGIN");
    //break;

}
 }

//void executeAction(){
  //switch(menu){
    //case 1:
     //action1();
     //break;
     //case 2:
     //action2();
```

```
      //break;
      }
}

//void action1(){{

  //if (tempC>50){
     //digitalWrite(buzzer, HIGH);
     //delay(100);
     //digitalWrite(buzzer, LOW);
     //delay(100);
     //StopRelay=1;
  }

  //if (StopRelay==0){
    //for(i=0;i<500;i++){
  //tempC = analogRead(tempPin1);
  //tempC = tempC * (500.0/1023.0);
  //tempC = tempC/5.1;
  //suhutotal = suhutotal + tempC;
  }
  //suhutotal=suhutotal/500;

  //digitalWrite(relay1, LOW);
  //lcd.clear();
```

```
//lcd.print("SUHU PEMANAS ");
//lcd.setCursor(4,1);
//lcd.print(suhutotal);
//lcd.setCursor(9,1);
//lcd.print("\xdf");
//lcd.print("C");
//delay(5000);
}

//if(StopRelay==1){
  //for(i=0;i<500;i++){
//tempC = analogRead(tempPin1);
//tempC = tempC * (500.0/1023.0);
//tempC = tempC/5.1;
//suhutotal = suhutotal + tempC;
}
//suhutotal=suhutotal/500;

//digitalWrite(relay1, HIGH);
//lcd.clear();
//lcd.print("SUHU PEMANAS");
//lcd.setCursor(4,1);
lcd.print(suhutotal);
//lcd.setCursor(9,1);
//lcd.print("\xdf");
```

```
  //lcd.print("C");
  //delay(5000);
  }
  }
}



//void action2(){{

  //if (StopRelay3==0){
    //for(i=0;i<500;i++){
  //tempC = analogRead(tempPin2);
  //tempC = tempC * (500.0/1023.0);
  //tempC = tempC/5.1;
  //suhutotal = suhutotal + tempC;
  }
  //suhutotal=suhutotal/500;

  //digitalWrite(relay2, LOW) ;
  //lcd.clear();
  //lcd.print("SUHU PENDINGIN");
  //lcd.setCursor(4,1);
  //lcd.print(suhutotal);
  //lcd.setCursor(9,1);
```

```
//lcd.print("\xdf");
//lcd.print("C");
//delay(5000);

}


//if (StopRelay3==1){
   //digitalWrite(buzzer, HIGH);
   delay(100);
   //digitalWrite(buzzer, LOW);
   //delay(100);

}

//if (tempC<13){  //terbaca 17 pada modul
//for(i=0;i<500;i++){
//adc1 = analogRead(tempPin2);
//adc1 = adc1 * (500.0/1023.0);
//adc1 = adc1/5.1;
//tempC = adc1-2.5;
//suhutotal = suhutotal + tempC;
}
//suhutotal=suhutotal/500;
```

```
  //digitalWrite(relay2, HIGH) ;
  //lcd.clear();
  //lcd.print("SUHU PENDINGIN");
 //lcd.setCursor(4,1);
  //lcd.print(suhutotal);
  //lcd.setCursor(9,1);
  //lcd.print("\xdf");
  //lcd.print("C");
  //delay(5000);
  //StopRelay3=1;
  }
}
}
```