

[KEMBALI KE MENU SEBELUMNYA]

DAFTAR ISI

1. Foto Hardware dan Diagram Blok

2. Prosedur Percobaan

3. Rangkaian Simulasi dan Prinsip Kerja

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5. Kondisi

6. Video Praktikum

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<h1 style="text-align: center;">Percobaan 1</h1> ADC-Sensor LDR dengan LCD <h3 style="text-align: justify;">1. Foto Hardware dan Diagram Blok [Kembali]</h3><div

style="text-align: justify;">
 Diagram Blok:

 <h3 style="font-weight: bold; text-align: justify;">2. Prosedur Percobaan [Kembali]</h3> + Rangkai semua komponen + buat program di aplikasi arduino IDE + setelah selesai masukkan program ke arduino + jalankan program pada simulasi dan cobakan dengan modul
 3. Rangkaian Simulasi dan Prinsip Kerja [Kembali]

 <h3 style="font-weight: bold; text-align: justify;">4. Flowchart dan Listing Program [Kembali]</h3> Flowchart :
 <div

class="separator" style="clear: both; text-align: center;"><a
href="https://blogger.googleusercontent.com/img/a/AVvXsEhAJJeqqLZmdPovyc7Fu2Wv5RwkECzIcIzt
AuinIzO2vldALmsaUoNgWA2yYwTkPDhQY9boNKZCIsuz9g2IuD9Q62TiClmIEkTrLnO90kG87zspdzidVB3
pa7wrrVHefpO6o0YmbOMe7cWXAZ5RGX3NIyNLW7tWE1GrKSVfEW0lMZJ_txhqPGKqTsbQ_2YI"
style="margin-left: 1em; margin-right: 1em;"><img alt="" data-original-height="595"
data-original-width="720" height="314"
src="https://blogger.googleusercontent.com/img/a/AVvXsEhAJJeqqLZmdPovyc7Fu2Wv5RwkECzIcIzt
AuinIzO2vldALmsaUoNgWA2yYwTkPDhQY9boNKZCIsuz9g2IuD9Q62TiClmIEkTrLnO90kG87zspdzidVB3
pa7wrrVHefpO6o0YmbOMe7cWXAZ5RGX3NIyNLW7tWE1GrKSVfEW0lMZJ_txhqPGKqTsbQ_2YI=w379
-h314" width="379" />

 <span style="text-align:
left;"> Listing Program:
 <div style="text-align:
justify;">   REAL LIFE <span
style="font-size: small;"><pre style="text-align: left;"><div style="color: #4e5b61; font-family:
Consolas, "Courier New", monospace; font-size: 14px; line-height: 19px;"> <span
style="background-color: #cfe2f3;">#include <span
style="color: #005c5f;"><Wire.h> <span style="background-color:
#cfe2f3;">#include <span style="color:
#005c5f;"><BH1750.h> <span style="background-color:
#cfe2f3;">#include <span style="color:
#005c5f;"><LiquidCrystal.h> <span style="background-color:
#cfe2f3;">
 LiquidCrystal <span
style="color: #d35400;">lcd(<span style="color:
#005c5f;">12, 11, <span style="color:
#005c5f;">5, 4, <span style="color:
#005c5f;">3, 2<span style="color:
#434f54;">); BH1750 <span
style="color: #d35400;">lightMeter<span style="color:
#434f54;">(BH1750::CONTINUOUS_HIGH_RES_MODE_2<span style="color:
#434f54;">); <span
style="color: #00979d;">int LDR = A0; <span style="background-color:
#cfe2f3;">int sw1 = <span style="color:
#005c5f;">13; <span
style="color: #00979d;">int sw2 = <span style="color:
#005c5f;">10; <span
style="color: #00979d;">int sw3 = <span style="color:
#005c5f;">9; <span
style="color: #00979d;">int sw4 = <span style="color:
#005c5f;">8; <span
style="color: #00979d;">int Rmotor = <span style="color:
#005c5f;">7; <span
style="color: #00979d;">int Lmotor = <span style="color:
#005c5f;">6; <span
style="color: #00979d;">float RLDR;
    <span style="color:
#00979d;">float Vout;
<span style="color:
#00979d;">float Lux; <span
style="color: #00979d;">int LDRval = <span style="color:

#d35400;">analogRead(LDR);
 void setup() {   Wire.begin();   lightMeter.begin();   pinMode(LDR, INPUT);   pinMode(sw1, INPUT);   pinMode(sw2, INPUT);   pinMode(sw3, INPUT);   pinMode(sw4, INPUT);   pinMode(Rmotor, OUTPUT);   pinMode(Lmotor, OUTPUT);   lcd.begin(16, 2);   //lcd.backlight(); only for I2C   delay(2000);   lcd.setCursor(1, 0);   lcd.print("Modul 2 uP & uC");   lcd.setCursor(1, 1);   lcd.print("Percobaan 1"); <span

style="background-color: #cfe2f3;"> delay(2000);   lcd.clear(); }
 void loop() {   int s1 = digitalRead(sw1);   int s2 = digitalRead(sw2);   int s3 = digitalRead(sw3);   int s4 = digitalRead(sw4);   if(s1 == HIGH){   lcd.clear();   if(s2 == HIGH && s3 == LOW && s4 == LOW){   int LDRval = analogRead(LDR);   Vout = (LDRval * 0.0048828125);   RLDR = (10000.0 * (5 - Vout))/Vout; Lux = (500 / RLDR);
   lcd.clear();   lcd.setCursor(0, 0);   lcd.print("LDR : "); <span

style="background-color: #cfe2f3;"> lcd.setCursor(0, 1);   lcd.print("Lux : ");   lcd.setCursor(10, 0);   lcd.print(LDRval);   lcd.setCursor(10, 1);   lcd.print(Lux);   digitalWrite(Rmotor,LOW);   digitalWrite(Lmotor,LOW);   delay(200); }else if(s2 == LOW && s3 == HIGH && s4 == LOW){   lcd.clear();   lcd.setCursor(0,0);   lcd.print("DC Motor");   lcd.setCursor(0,1);   lcd.print("Activated");   digitalWrite(Rmotor,LOW); <span

style="background-color: #cfe2f3;"> digitalWrite(Lmotor,LOW);   delay(1500);   digitalWrite(Rmotor,HIGH);   digitalWrite(Lmotor,LOW);   delay(4000);   digitalWrite(Rmotor,LOW);   digitalWrite(Lmotor,LOW);   delay(1500);   digitalWrite(Rmotor,LOW);   digitalWrite(Lmotor,HIGH);   delay(4000); }else if(s2 == LOW && s3 == LOW && s4 == HIGH){   lcd.clear();   int LDRval = analogRead(LDR);   float lux = lightMeter.readLightLevel();   int speed = map(LDRval, 0, 1023, 0, 255);   analogWrite(Rmotor, speed);   analogWrite<span style="color:

#434f54;">(Lmotor, 0);   lcd.setCursor(0,0);   lcd.print("LDR : ");   lcd.setCursor(10,0);   lcd.print(LDRval);   lcd.setCursor(0,1);   lcd.print("Speed : ");   lcd.setCursor(10,1);   lcd.print (speed);   delay(200); }else if(s2 == HIGH && s3 == HIGH && s4 == HIGH){   lcd.clear();   lcd.setCursor(0,0);   lcd.print("only 1 switch");   lcd.setCursor(0,1);   lcd.print("1 Condition"<span style="color:

#434f54;">);   digitalWrite(Rmotor,LOW);   digitalWrite(Lmotor,LOW);   delay(200); }else if(s2 == LOW && s3 == LOW && s4 == LOW){   lcd.clear();   lcd.setCursor(0,0);   lcd.print("Follow The");   lcd.setCursor(0,1);   lcd.print("Instruction");   digitalWrite(Rmotor,LOW);   digitalWrite(Lmotor,LOW);   delay(200); }else if(s2 == HIGH && s3 == LOW && s4 == HIGH){   lcd.clear();   lcd.setCursor(0,0);   lcd.print("Choose s2 or s4");   lcd.setCursor<span

style="color: #434f54;">(0,1);   lcd.print("to set to OFF");   digitalWrite(Rmotor,LOW);   digitalWrite(Lmotor,LOW);   delay(200); }else if(s2 == LOW && s3 == HIGH && s4 == HIGH){   lcd.clear();   lcd.setCursor(0,0);   lcd.print("Choose s3 or s4");   lcd.setCursor(0,1);   lcd.print("to set to OFF");   digitalWrite(Rmotor,LOW);   digitalWrite(Lmotor,LOW);   delay(200); }else if(s2 == HIGH && s3 == HIGH && s4 == LOW){   lcd.clear();   lcd.setCursor(0,<span style="color:

#005c5f;">0);   lcd.print("Choose s2 or s3");   lcd.setCursor(0,1);   lcd.print("to set to OFF");   digitalWrite(Rmotor,LOW);   digitalWrite(Lmotor,LOW);   delay(200); }   }else{   lcd.clear();   lcd.setCursor(0,0);   lcd.print("ELECTRONIC &");   lcd.setCursor(0,1);   lcd.print("INSTRUMENTATION");   delay(200);   digitalWrite(Rmotor,LOW);   digitalWrite(Lmotor,LOW);   } }
 <div style="color: #4e5b61; font-family: Consolas,

"Courier New", monospace; font-size: 14px; line-height: 19px;">   SIMULASI
 #include <LiquidCrystal.h>
 LiquidCrystal lcd(13, 12, 11, 10, 9, 8);
 int sw1 = 2; int sw2 = 3; int sw3 = 4; int sw4 = 5; int front = A1; int back = A2;
 void setup() {   // put your setup code here, to run once: lcd.begin(16,2); pinMode(sw1,INPUT); pinMode(sw2,INPUT); pinMode(sw3,INPUT); pinMode(sw4,INPUT); pinMode(front,OUTPUT); pinMode(back,OUTPUT<span style="color:

#434f54;">); }
 void loop() {   // put your main code here, to run repeatedly: int s1 = digitalRead(sw1); int s2 = digitalRead(sw2); int s3 = digitalRead(sw3); int s4 = digitalRead(sw4); int ldr = analogRead(A0); if(s1 == HIGH){   if(s2 == HIGH && ((s3 && s4)==LOW)){   lcd.clear();   lcd.setCursor(0,0);   lcd.print(ldr);   lcd.setCursor(0,1);   lcd.print("The LDR Value");   delay(200);   }else <span style="color:

#728e00;">if(s3 == HIGH && <span
style="color: #434f54;">((s2 && s4<span style="color:
#434f54;">)==LOW)){ <span
style="background-color: #01ffff;">   lcd.<span
style="color: #d35400;">clear<span style="color:
#434f54;">();
lcd.setCursor<span
style="color: #434f54;">(2,<span style="color:
#005c5f;">0); <span
style="background-color: #01ffff;">   lcd.<span
style="color: #d35400;">print(<span style="color:
#005c5f;">"Running The"); <span
style="background-color: #01ffff;">   lcd.<span
style="color: #d35400;">setCursor(<span style="color:
#005c5f;">2,1<span style="color:
#434f54;">);
lcd.print<span
style="color: #434f54;">("Motor"<span style="color:
#434f54;">);
digitalWrite<span style="color:
#434f54;">(front,HIGH); <span
style="background-color: #01ffff;">   <span style="color:
#d35400;">digitalWrite(back,LOW<span style="color:
#434f54;">);
delay(<span
style="color: #005c5f;">200<span style="color:
#434f54;">);   <span
style="color: #434f54;">}else <span style="color:
#728e00;">if(s4 == HIGH && <span
style="color: #434f54;">((s2 && s3<span style="color:
#434f54;">)==LOW)){ <span
style="background-color: #01ffff;">   lcd.<span
style="color: #d35400;">clear<span style="color:
#434f54;">();
lcd.setCursor<span
style="color: #434f54;">(0,<span style="color:
#005c5f;">0); <span
style="background-color: #01ffff;">   lcd.<span
style="color: #d35400;">print(<span style="color:
#005c5f;">"LDR Value : "); <span
style="background-color: #01ffff;">   lcd.<span
style="color: #d35400;">setCursor(<span style="color:
#005c5f;">13,0<span style="color:
#434f54;">);
lcd.print<span
style="color: #434f54;">(ldr<span style="color:
#434f54;">);
lcd.setCursor<span

style="color: #434f54;">(0,1);   lcd.print("LDR turn Motor");   analogWrite(front,ldr);   digitalWrite(back,LOW);   delay(300);
   }else{   digitalWrite(back,LOW);   digitalWrite(front,LOW);   lcd.clear();   lcd.setCursor(0,0);   lcd.print("Nice Try");   lcd.setCursor(0,1);   lcd.print("No Condition");   delay(200);   } }else{   lcd.clear();   lcd.setCursor<span

style="color: #434f54;">(4,0);   lcd.print("ELECTRONIC");   lcd.setCursor(0,1);   lcd.print("&INSTRUMENTATION");   delay(100); } } </pre> 5. Kondisi [Kembali]   LDR akan melakukan variasi nilai ADC untuk menghasilkan output berdasarkan masing-masing switch LED yang menghasilkan mekanisme output yang berbeda yang berbeda-beda sesuai logika yang diatur pada listing program.
 6. Video Praktikum [Kembali]   <object class="BLOG_video_class" contentid="fed181f0b9291ee2" height="266" id="BLOG_video-fed181f0b9291ee2" width="320"></object> Percobaan nyata
 <object class="BLOG_video_class" contentid="983b4189dbbf314f" height="266" id="BLOG_video-983b4189dbbf314f" width="320"></object>
 Simulasi proteus
 7. Link Download [Kembali] HTML↠ klik disini
 Listing Program↠ <a

href="https://drive.google.com/uc?export=download&id=1tTKjWVf4cWTgfToh0HFSEajA5Z85HUFu" style="text-align: justify;">klik disini
 Video Percobaan↠ klik disini
  Rangkaian Simulasi

