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<div style="text-align: center;">
<a href="https://raisha212033.blogspot.com/2024/04/modul-3.html">[KEMBALI KE MENU
SEBELUMNYA]</a></div>
<br />
<center>
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<b>DAFTAR ISI</b>
<br />
<div style="text-align: left;">
<a href="#Prosedur">1. Prosedur</a></div>
<div style="text-align: left;">
<a href="#hardware">2. Hardware dan Diagram Blok</a></div>
<div style="text-align: left;">
<a href="#rangkaian">3. Rangkaian Simulasi dan Prinsip Kerja</a></div>
<div style="text-align: left;">
<a href="#flowchart">4. Flowchart dan Listing Program</a></div>
<div style="text-align: left;">
<a href="#Kondisi">5. Kondisi</a></div>
<div style="text-align: left;">
<a href="#Video">6. Video Simulasi</a></div>
<div style="text-align: left;">
<a href="#download">7. Download File</a></div>
<div style="text-align: left;">
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</center>
<span style="font-family: "times" , "times new roman" , serif;"><span
style="font-family: "times" , "times new roman" , serif; font-size:
small;"><b><div><span style="font-family: "times" , "times new roman" ,
serif;"><span style="font-family: "times" , "times new roman" , serif;
font-size: small;"><b><br /></b></span></span></div><div style="text-align: center;">Tugas
Pendahuluan Modul 3</div><div style="text-align: center;">Percobaan 1 Kondisi 5</div>1.
Prosedur</b>
<a name="Prosedur"></a>
<a href="#home">[Kembali]</a></span></span><div><span style="font-family: times, times new
roman, serif;">1. Rangkai komponen sesuai percobaan dan kondisi yang
dipilih.</span></div><div><span style="font-family: times, times new roman, serif;">2. Buat
program menggunakan Arduino IDE.</span></div><div><span style="font-family: times, times
new roman, serif;">3. Transfer program yang telah dibuat ke Arduino yang ada di
Proteus.</span></div><div><span style="font-family: times, times new roman, serif;">4. Uji
coba program di simulasi sesuai dengan kondisi yang diinginkan.</span></div><div><span
style="font-family: times, times new roman, serif;">5. Proses selesai setelah uji coba berhasil

```

dilakukan.

<div>
</div><div><div>
2. Hardware dan Diagram Blok

[Kembali]</div><div>
</div><div>a.
Hardware</div><div>1.
Modul Arduino Uno</div><div><div class="separator" style="clear: both; text-align: center;"><div class="separator" style="clear: both; text-align: center;"></div>
<div class="separator" style="clear: both; text-align: center;">
</div></div><div class="separator" style="clear: both; text-align: left;">spesifikasi: <div class="separator" style="clear: both; text-align: center;"></div>
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</div></div></div><div class="separator" style="clear: both; text-align: left;">2. LED</div><div class="separator" style="clear: both; text-align: left;">
</div><div class="separator" style="clear: both; text-align: center;"><a href="https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEh0LRBKmdTgGHd8gCGDC6rGSJDmbLHawYD58S_U0MYlrAqhpkMs4tnHv_Vxb95QtWIU_nEyMcX8vi5H-2ZrwzEeU67p2

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both; text-align: left;">
</div><div class="separator" style="clear: both; text-align: left;">
</div><div class="separator" style="clear: both; text-align: left;">3. Dipswitch</div><div
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</div><div class="separator" style="clear: both;
text-align: left;">b. diagram blok</div><div class="separator" style="clear: both; text-align:

left;"><div class="separator" style="clear: both; text-align: center;"></div></div></div></div><div>
3. Rangkaian Simulasi dan Prinsip Kerja[Kembali]</div><div class="separator" style="clear: both; text-align: center;">
</div>A. Rangkaian Simulasi</div><div>
<div class="separator" style="clear: both; text-align: center;"></div><div class="separator" style="clear: both; text-align: center;">
</div><div><div class="separator" style="clear: both; text-align: left;">B. Prinsip Kerja</div><div class="separator" style="clear: both; text-align: left;"><div class="separator" style="clear: both;">
</div><div class="separator" style="clear: both;">MASTER</div><div class="separator" style="clear: both;">Arduino master berfungsi untuk membaca input dari dipswitch dan kemudian mengirimkan pesan tersebut ke arduino slave berdasarkan kondisi yang diberikan oleh arduino master. Dipswitch berfungsi sebagai input yang terhubung ke pin 2-8 arduino yang mana empat dipswitch pertama dalam kondisi pull down dan terhubung ke pin 2, 3, 4, 5 sedangkan empat switch lainnya dalam kondisi pull- up dan terhubung ke pin 6, 7, 8, 9 arduino. Switch ini akan memberikan logika 1 atau 0 pada pin input. Arduino master akan membaca input dari dipswitch kemudian menerjemahkannya ke dalam bentuk pesan yang akan dikirimkan kepada arduino slave. Pada kondisi pertama, ketika 2 switch pull down dan 1 switch pull up maka arduino master akan menerjemahkannya menjadi satu pesan yang disini ditandai dengan "r" yang mana nantinya akan berfungsi untuk menghidupkan LED secara running. Pada kondisi kedua, ketika 3 switch pull down dan 4 switch pull up, maka akan

disalakan sebagai pesan "b" yang mana ini berfungsi untuk mengendalikan LED secara blink. kedua pesan ini akan dikirimkan ke arduino slave melalui komunikasi UART melalui pin Tx dan Rx.

SLAVE

Arduino master berfungsi sebagai penerima pesan dari arduino master dan mengendalikan LED sesuai dengan pesan yang diterima dari arduino. LED dihubungkan dengan pin 2- 9 arduino dan dikontrol melalui pesan yang diterima. Ketika pesan yang diterima adalah "r", maka arduino slave akan mengaktifkan LED secara running, sedangkan ketika pesan yang diterima adalah "b", maka arduino slave akan mengaktifkan LED secara blink. Pesan diterima oleh arduino slave melalui pin Tx dan Rx melalui komunikasi UART.

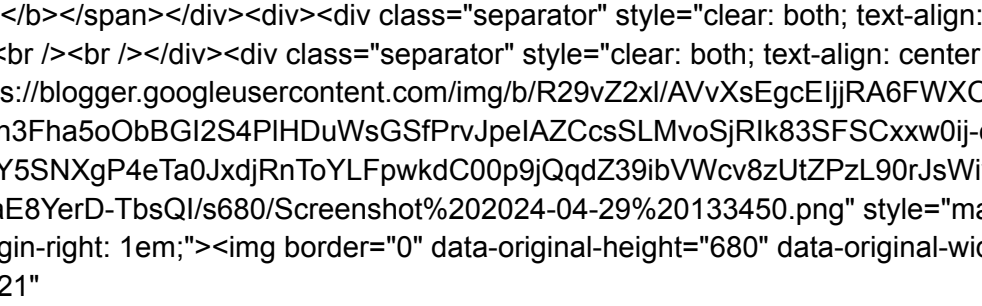
4. Flowchart dan Listing Program

[Flowchart](#)

[Listing Program](#)

[Kembali](#)

Flowchart



Listing Program

```

Master:
#define DS1 2
#define DS2 3
#define DS3 4
#define DS4 5
#define DS5 6
#define DS6 7
#define DS7 8
#define DS8 9

bool b1, b2, b3, b4, b5, b6, b7, b8;

void setup()
{
  Serial.begin(9600);
  pinMode(DS1, INPUT_PULLUP);
  pinMode(DS2, INPUT_PULLUP);
  pinMode(DS3, INPUT_PULLUP);
  pinMode(DS4, INPUT_PULLUP);
  pinMode(DS5, INPUT_PULLUP);
  pinMode(DS6, INPUT_PULLUP);
  pinMode(DS7, INPUT_PULLUP);
  pinMode(DS8, INPUT_PULLUP);
}

void loop()
{
  b8 = digitalRead(DS8);
  b7 = digitalRead(DS7);
  b6 =
  
```

```

digitalRead(DS6);</div><div>&nbsp; int b5 = digitalRead(DS5);</div><div>&nbsp; int b4 =
digitalRead(DS4);</div><div>&nbsp; int b3 = digitalRead(DS3);</div><div>&nbsp; int b2 =
digitalRead(DS2);</div><div>&nbsp; int b1 = digitalRead(DS1);</div><div><br
/></div><div>&nbsp; // Hidupkan LED sesuai dengan kondisi tombol yang
ditekan</div><div>&nbsp; if (b8 == HIGH & & b7 == LOW & & b6 == LOW
& & b5 == LOW & & </div><div>&nbsp; &nbsp; &nbsp; b4 == LOW
& & b3 == LOW & & b2 == HIGH & & b1 == HIGH)
{</div><div>&nbsp; &nbsp; // Mengaktifkan running LED</div><div>&nbsp; &nbsp;
Serial.write('r');</div><div>&nbsp; } else if (b8 == HIGH & & b7 == HIGH & &
b6 == HIGH & & b5 == HIGH & & </div><div>&nbsp; &nbsp; &nbsp; &nbsp;
& & & & b4 == HIGH & & b3 == LOW & & b2 == LOW
& & b1 == LOW) {</div><div>&nbsp; &nbsp; // Mengaktifkan blinking
LED</div><div>&nbsp; &nbsp; Serial.write('b');</div><div>&nbsp; }</div><div>&nbsp;
delay(20);</div><div>}</div><div><br /></div><div><b>Slave:</b></div><div><br
/></div><div><div>int led[] = {2, 3, 4, 5, 6, 7, 8, 9};</div><div>char message;</div><div><br
/></div><div>void setup() {</div><div>&nbsp; Serial.begin(9600);</div><div>&nbsp; for (int i =
0; i &lt; 8; i++) {</div><div>&nbsp; &nbsp; pinMode(led[i], OUTPUT);</div><div>&nbsp;
}</div><div>}</div><div><br /></div><div>void loop() {</div><div>&nbsp; if (Serial.available())
{</div><div>&nbsp; &nbsp; message = Serial.read();</div><div><br /></div><div>&nbsp;
&nbsp; if (message == 'r') {</div><div>&nbsp; &nbsp; &nbsp; // Mengaktifkan running
LED</div><div>&nbsp; &nbsp; &nbsp; for (int i = 0; i &lt; 8; i++) {</div><div>&nbsp; &nbsp;
&nbsp; &nbsp; digitalWrite(led[i], HIGH);</div><div>&nbsp; &nbsp; &nbsp; &nbsp;
delay(100);</div><div>&nbsp; &nbsp; &nbsp; &nbsp; digitalWrite(led[i],
LOW);</div><div>&nbsp; &nbsp; &nbsp; }</div><div>&nbsp; &nbsp; } else if (message == 'b')
{</div><div>&nbsp; &nbsp; &nbsp; // Mengaktifkan blinking LED</div><div>&nbsp; &nbsp;
&nbsp; for (int i = 0; i &lt; 8; i++) {</div><div>&nbsp; &nbsp; &nbsp; &nbsp;
digitalWrite(led[i],
HIGH);</div><div>&nbsp; &nbsp; &nbsp; }</div><div>&nbsp; &nbsp; &nbsp;
delay(500);</div><div>&nbsp; &nbsp; &nbsp; for (int i = 0; i &lt; 8; i++) {</div><div>&nbsp; &nbsp;
&nbsp; &nbsp; digitalWrite(led[i], LOW);</div><div>&nbsp; &nbsp; &nbsp;
}</div><div>&nbsp; &nbsp; &nbsp; delay(500);</div><div>&nbsp; &nbsp; }</div><div>&nbsp;
}</div><div>}</div><div><br /></div><div>

```

5. Kondisi

[Kondisi](#)

[\[Kembali\]](#)

Percobaan 1 Kondisi 5

4 switch dalam pull-down dan 4 switch dalam pull-up, 2 switch pull-down dan 1 switch pull up mengaktifkan running LED, 3 switch pull down dan 4 switch pull up mengaktifkan blinking LED

k" style="color: #2667cf; text-decoration-line: none; ">klik disini</div><div style="font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 16.5px; ">Download Datasheet
Dipswitch klik disini</div><div style="font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 16.5px; ">Download Datasheet
LED klik disini</div><div style="font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 16.5px; ">
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url("/img/share_buttons_20_3.png"); -20px 0px no-repeat !important; color: #2667cf; display: inline-block; height: 20px; margin-left: -1px; overflow: hidden; position: relative; text-decoration-line: none; width: 20px;" target="_blank" title="BlogThis!">>BlogThis!Berbagi ke TwitterBerbagi ke FacebookBagikan ke Pinterest</div></div></div></div></div><div>
</div></div>