

Mikro 2024 Percobaan 2 Modul2</h3></div><div style="background-color: white; border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px;"><br style="box-sizing: border-box;" /></div><div style="background-color: white; border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px; text-align: center;">[KEMBALI KE MENU SEBELUMNYA]</div><div style="background-color: white; border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px; text-align: center;">
</div><center style="background-color: white; border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><div style="border: 2px dashed rgb(23, 128, 221); box-sizing: border-box; color: #444444; font-size: 15px; height: 240px; margin: 0px; overflow: auto; padding: 10px; width: 330px;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">DAFTAR ISI<br style="box-sizing: border-box;" /><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">1. Foto Hardware dan Diagram Blok</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">2. Prosedur Percobaan</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">3. Rangkaian Simulasi dan Prinsip Kerja</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">4. Flowchart dan Listing Program</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">5. Kondisi</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;"><a href="#V" style="border: 0px; box-sizing: border-box; color: #597e00; margin: 0px;

[illegible]

height="320"

src="https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEjv-U7kIKtchRNY_gpsMue8F9bOM4nE8k2tMs3VE7-l9RLvO5ksYF6f7i9FlfCNTLK_ikQB7Tz_qV_DFyp22Q3vehv2BIQpqlDcWFS078AlxSFBrMUBLEm8Yz5Vf5HgVxKmCzdvyYh8yu9fV6wvCCBPrKYpI5MkQzwnjdNR_3OrdIYbZ41eb7FoJCvjBA/s320/Screenshot%202024-03-01%20074735.png" style="background-attachment: initial; background-clip: initial; background-image: initial; background-origin: initial; background-position: initial; background-repeat: initial; background-size: initial; border: 1px solid rgb(237, 237, 237); box-shadow: rgba(0, 0, 0, 0.1) 1px 1px 5px; padding: 5px; position: relative;" width="291" /></div><div class="separator" style="clear: both; text-align: center;">
</div><div class="separator" style="clear: both; text-align: center;">
</div><div class="separator" style="clear: both;"> 2. LCD</div>
<div class="separator" style="clear: both; text-align: center;"></div>
<div class="separator" style="clear: both; text-align: center;">
</div><div class="separator" style="clear: both; text-align: center;">
</div><div class="separator" style="clear: both;"> 3. IC PCF8574</div><div class="separator" style="clear: both;">
</div></div></center><blockquote style="border: none; color: #616161;

font-family: "Trebuchet MS"; Trebuchet, Verdana, sans-serif; font-size: 13.2px; margin: 0px 0px 0px 40px; padding: 0px; text-align: start;"><blockquote style="border: none; margin: 0px 0px 0px 40px; padding: 0px;"><blockquote style="border: none; margin: 0px 0px 0px 40px; padding: 0px;"><center style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px; text-align: justify;"><div class="separator" style="clear: both;"> <img border="0" data-original-height="289" data-original-width="384" height="241"

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** &~11. Ground
</div><div class="separator" style="clear: both;"><div class="separator" style="clear: both; text-align: center;"><a**

**href="https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEhrKk4YHAghMHoeK8GBillbd7ibLRr0GRha2d7TdmdDVW_eQO33Dtl5WoqiijZsiBH2RVyEBEnREMHYL74M7zhV34lcMUf10oBZBXPKBrZ6vY2ztMNXAndE9I2wTR7ZztKC4eLoFrWn-pVtFL1eSMd_5p_GZD_I9m1FKCR7dwPU0IK4LFO_gtbxSDkW6_uc/s56/Screenshot%202024-03-01%20075544.png" style="color: #2165b4; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></div></div></div></center></div><div class="separator" style="clear: both; color: black; font-size: medium; text-align: center;">
</div><br style="box-sizing: border-box;" /></div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px; text-align: justify;">Diagram Blok:</div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px; text-align: justify;"><div class="separator" style="border: 0px; box-sizing: border-box; clear: both; margin: 0px; padding: 0px; text-align: center;"><br style="box-sizing: border-box;" /></div><br style="box-sizing: border-box;" /><br style="box-sizing: border-box;" /><div class="separator" style="clear: both; text-align: center;"><div class="separator" style="clear: both; text-align: center;"><span style="margin-left: 1em; margin-right:**

1em;"></div>
<div class="separator" style="clear: both; text-align: center;">
</div></div></div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><h3 style="border: 0px; box-sizing: border-box; color: #757575; font-size: 19px; letter-spacing: 0px; line-height: 29px; margin: 0px 0px 7px; padding-bottom: 0px; padding-left: 0px; padding-right: 0px; padding-top: 4px !important; padding: 4px 0px 0px; position: relative; text-align: justify; text-indent: -1px;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">2. Prosedur Percobaan [Kembali]</h3><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px;"><ul style="text-align: left;">Rangkailah seperti rangkaian berikutBuka Arduino IDE dan masukan listing ProgramUpload program ke arduinoMencoba rangkaiannya dengan memvariasikan kondisi interrupt (Falling, Rising, High dan Low)</div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><br style="box-sizing: border-box;" /></div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">3. Rangkaian Simulasi dan Prinsip Kerja [Kembali]</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><br style="box-sizing: border-box;" /></div><div class="separator" style="clear: both; color: #444444; font-size: 15px; font-weight: bold; text-align: center;"><div class="separator" style="clear: both;

text-align: center;"><a
href="https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEjWlIEJVZt2Gb6HVuOnpNewbLmV
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style="clear: both; text-align: center;">
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1em; margin-right: 1em; text-align: center;">
</div></div><div style="border: 0px; box-sizing:
border-box; color: #444444; font-size: 15px; font-weight: bold; margin: 0px; padding: 0px; text-align:
justify;">Prinsip Kerja</div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size:
15px; font-weight: bold; margin: 0px; padding: 0px; text-align: justify;">
</div><div style="border:
0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: justify;"><div class="separator"
style="border: 0px; box-sizing: border-box; clear: both; margin: 0px; padding: 0px; text-align: left;"><div
class="separator" style="border: 0px; box-sizing: border-box; clear: both; margin: 0px; padding: 0px;
text-align: justify;"><div class="separator" style="border: 0px; box-sizing: border-box; clear: both;
margin: 0px; padding: 0px;">Jalan kerja dari rangkaian ini ialah, arduino akan terus menghitung angka
dan menyalakan LED, angka tersebut akan terus bertambah dan ditampilkan pada LCD. perhitungan
angka ini akan terus +1 hingga diberikan interrupt, dimana interrupt pada rangkaian ini digunakan pada
pin 2. ketika pin interrupt atau pin 2 mengalami kondisi falling (perubahan logika dari logika 1 ke logika 0),
maka interrupt akan terjadi. </div><div class="separator" style="border: 0px; box-sizing:
border-box; clear: both; margin: 0px; padding: 0px;"> Interrupt yang terjadi ialah
menghulang angka yang dihitung, mematikan LED dan menyalakan buzzer, dikarenakan interrupt hanya
terjadi ketika kondisi Falling maka program menghitung dan menyalakan LED akan diulang lagi hingga
pin interrupt/pin 2 mengalami kondisi Falling kembali.</div></div><div class="separator"
style="border: 0px; box-sizing: border-box; clear: both; color: #444444; font-size: 15px; font-weight: 400;
margin: 0px; padding: 0px; text-align: center;">
</div><div class="separator" style="border: 0px;
box-sizing: border-box; clear: both; color: #444444; font-size: 15px; font-weight: 400; margin: 0px;
padding: 0px; text-align: center;"><br style="box-sizing: border-box;" /></div></div></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="border: 0px;
box-sizing: border-box; margin: 0px; padding: 0px;"><span style="border: 0px; box-sizing: border-box;
margin: 0px; padding: 0px;"><h3 style="border: 0px; box-sizing: border-box; color: #757575; font-size:
19px; letter-spacing: 0px; line-height: 29px; margin: 0px 0px 7px; padding-bottom: 0px; padding-left: 0px;
padding-right: 0px; padding-top: 4px !important; padding: 4px 0px 0px; position: relative; text-align:
justify; text-indent: -1px;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;
text-align: left;"><span style="border: 0px; box-sizing: border-box; font-size: medium; margin: 0px;
padding: 0px;"><a
name="FL" style="border: 0px; box-sizing: border-box; color: #597e00; margin: 0px; padding: 0px;
transition: all 0.3s ease 0s;">4. Flowchart dan Listing Program <a href="#home"
style="border: 0px; box-sizing: border-box; color: #597e00; margin: 0px; padding: 0px;
text-decoration-line: none; transition: all 0.3s ease 0s;">[Kembali]</h3><div

class="separator" style="clear: both; text-align: center;"></div>
<div class="separator" style="clear: both; color: #444444; font-size: 15px; text-align: center;">
</div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px;"><br style="box-sizing: border-box;" /><br style="box-sizing: border-box;" /></div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px;">Listing Program:</div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px;">
</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">#include#define LED 13 //pin 13 bernama LED</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">#define tombol 2 //pin 2 (pin interrupt) bernama tombol</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">#define buzzer 11</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">volatile byte led_nyala = LOW; //kondisi mula-mula LED mati</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">static int count = 0;</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">volatile byte buzzer_nyala = LOW;</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">LiquidCrystal_I2C lcd(0x27, 20, 4);</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">
</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;">void setup() {</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"> lcd.init();</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"> lcd.backlight();</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"> </div>

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pinMode(LED,OUTPUT);</span></span></div><div style="border: 0px; box-sizing: border-box; margin:
0px; padding: 0px;"><span style="color: #444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;
pinMode(tombol,INPUT);</span></span></div><div style="border: 0px; box-sizing: border-box; margin:
0px; padding: 0px;"><span style="color: #444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;
attachInterrupt(digitalPinToInterrupt(2),tombol_ditekan, FALLING); //pin 2 (interrupt 0) digunakan
sebagai interrupt eksternal</span></span></div><div style="border: 0px; box-sizing: border-box; margin:
0px; padding: 0px;"><span style="color: #444444;"><span style="font-size:
15px;"></span></span></div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding:
0px;"><span style="color: #444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;</span></span></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color:
#444444;"><span style="font-size: 15px;">void loop() { //Main Program</span></span></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color:
#444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;digitalWrite(LED,HIGH);</span></span></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color:
#444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;digitalWrite(buzzer,LOW);</span></span></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color:
#444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;lcd.setCursor(0,0);</span></span></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color:
#444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;lcd.print("Count:");</span></span></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color:
#444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;lcd.setCursor(0,1);</span></span></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color:
#444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;lcd.print(count);</span></span></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color:
#444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;count += 1; // menambahkan integer count dengan
angka 1</span></span></div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding:
0px;"><span style="color: #444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;
delay(1000);</span></span></div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding:
0px;"><span style="color: #444444;"><span style="font-size: 15px;"></span></span></div><div
style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color:
#444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;</span></span></div><div style="border: 0px;
box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color: #444444;"><span
style="font-size: 15px;">//membuat fungsi bernama tombol_ditekan, fungsi ini (ISR) dieksekusi secara
otomatis setelah arduino memperoleh sinyal interrupt di pin 2</span></span></div><div style="border:
0px; box-sizing: border-box; margin: 0px; padding: 0px;"><span style="color: #444444;"><span
style="font-size: 15px;">void tombol_ditekan()</span></span></div><div style="border: 0px; box-sizing:
border-box; margin: 0px; padding: 0px;"><span style="color: #444444;"><span style="font-size:
15px;"><{</span></span></div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding:
0px;"><span style="color: #444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;
digitalWrite(LED,LOW);</span></span></div><div style="border: 0px; box-sizing: border-box; margin:
0px; padding: 0px;"><span style="color: #444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;
digitalWrite(buzzer,HIGH);</span></span></div><div style="border: 0px; box-sizing: border-box; margin:
0px; padding: 0px;"><span style="color: #444444;"><span style="font-size: 15px;">&nbsp;&nbsp;&nbsp;count =
0;</span></span></div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding:

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Opx;"> delay(100000);</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"></div></div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px;"><br style="box-sizing: border-box;" /></div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px;">
</div></div><p style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px 0px 15px; padding: 0px; text-align: justify;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">5. Kondisi [Kembali]</p><p style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px 0px 15px; padding: 0px; text-align: justify;">Main program akan berjalan terus dimana pada main program angka akan terus bertambah 1 dan LED akan selalu menyala ketika pin 2 diubah dari kondisi logika 1 ke logika 2 maka akan terjadi interrupt yang akan mengulang angka dan mematikan LED dan menyalakan buzzer.</p><div><p style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px 0px 15px; padding: 0px; text-align: justify;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;"></p><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px; text-align: -webkit-center;"><p style="border: 0px; box-sizing: border-box; margin: 0px 0px 15px; padding: 0px; text-align: justify;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">
</p><p style="border: 0px; box-sizing: border-box; margin: 0px 0px 15px; padding: 0px; text-align: justify;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">6. Video Simulasi [Kembali]</p></div></div><p style="border: 0px; box-sizing: border-box; margin: 0px 0px 15px; padding: 0px; text-align: justify;"></p><div style="text-align: left;">
</div><b style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px; text-align: left;"><a href="#home" style="border: 0px; box-sizing: border-box; color:

#597e00; margin: 0px; padding: 0px; text-decoration-line: none; transition: all 0.3s ease 0s;"><div class="separator" style="clear: both; text-align: center;"><object class="BLOG_video_class" contentid="940e8c5cf35a224f" height="266" id="BLOG_video-940e8c5cf35a224f" width="320"></object></div><div class="separator" style="clear: both; text-align: center;">
</div><div style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px; padding: 0px; text-align: -webkit-center;"><div class="separator" style="clear: both; text-align: center;">
</div><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px;"><div style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: -webkit-center;"><p style="border: 0px; box-sizing: border-box; font-weight: 400; margin: 0px 0px 1px; padding: 0px; text-align: justify;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: left;">7. Link Download [Kembali]</p></div></div></div></div></div><p style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px 0px 15px; padding: 0px; text-align: left;"></p><ul style="text-align: left;"><b style="border: 0px; box-sizing: border-box; margin: 0px; padding: 0px; text-align: justify;">HTML→ klik disini<br style="box-sizing: border-box;" />Aplikasi→ klik disini<br style="box-sizing: border-box;" />Video Percobaan→ klik disini<p></p><p style="border: 0px; box-sizing: border-box; color: #444444; font-size: 15px; margin: 0px 0px 15px; padding: 0px; text-align: left;">
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box-sizing: border-box; color: #444444; font-size: 15px; margin: Opx Opx 15px; padding: Opx; text-align:
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border-box; color: #444444; font-size: 15px; margin: Opx Opx 15px; padding: Opx; text-align: left;"><span
style="font-family: helvetica;">
</p><p style="border: Opx; box-sizing: border-box; color:
#444444; font-size: 15px; margin: Opx Opx 15px; padding: Opx; text-align: left;"><span style="font-family:
helvetica;">
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15px; margin: Opx Opx 15px; padding: Opx; text-align: left;"><br
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Opx 15px; padding: Opx; text-align: left;">
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style="border: Opx; box-sizing: border-box; color: #444444; font-size: 15px; margin: Opx Opx 15px;
padding: Opx; text-align: left;">
</p><p style="border:
Opx; box-sizing: border-box; color: #444444; font-size: 15px; margin: Opx Opx 15px; padding: Opx;
text-align: left;">
</p><p style="border: Opx;
box-sizing: border-box; color: #444444; font-size: 15px; margin: Opx Opx 15px; padding: Opx; text-align:
left;">
</p></center>