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### Laporan Akhir Percobaan 2

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[KEMBALI KE MENU SEBELUMNYA]  
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**1. Komponen**  
**a. Arduino**  
Arduino adalah kit elektronik atau papan rangkaian elektronik open source yang di dalamnya terdapat komponen utama yaitu sebuah chip mikrokontroler dengan jenis AVR dari perusahaan Atmel. Arduinoyang kita gunakan adalah Arduino Uno yang menggunakan chip AVR ATmega 328P. Dalam memprogram Arduino bisa dapat berhubungan dengan komputer ataupun perangkat lain.

[!\[\]\(a3ea015cc5581cad732d1eb81613fe7b\_img.jpg\)](https://blogger.googleusercontent.com/img/a/AVvXsEifjbJ5pephSt5VsbHp3guFQacCALzG0rYnXzaIYUmJ2HjhZMuFubzSE3hyhS1i4x3ZBqEufc-ew036Zp-mnmXWuVGSTRZ-xBDav_lPTP0rW6RWhQ2YJuUDEYz0tHrRE4m-FTWHtMyCAknzJ7yHMMxvx--Y_zn-dG0kIcAFMqo2HNsayT7VK7Qy31rFMA=s320)

src="https://blogger.googleusercontent.com/img/a/AVvXsEifjbJ5pephSt5VsbHp3guFQacCALzG0rYnXzaIYUmJ2HjhZMuFubzSE3hyhS1i4x3ZBqEufc-ew036Zp-mnmXWuVGSTRZ-xBDav\_lpTP0rW6RWhQ2YJuUDEYz0tHrRE4m-FTWHtMyCAknzJ7yHMMxvx-Y\_zn-dG0klcAFMqo2HNsayT7VK7Qy31rFMA" 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(238, 238, 238); box-shadow: rgba(0, 0, 0, 0.1) 1px 1px 5px; padding: 5px; position: relative;" width="320" /></a></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif;"><br /></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif;"><span style="font-family: georgia; font-size: medium;"><b>b. Seven Segment</b></span></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif;"><span style="font-family: georgia;">Seven Segment Display adalah komponen elektronika yang dapat menampilkan angka desimal melalui kombinasi-kombinasi segmennya. Seven Segmen Display pada umumnya digunakan pada jam digital, kalkulator, multimeter digital dan juga panel Display Digital seperti pada Microwave Oven ataupun pengatur suhu digital&nbsp;  </span></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif;"><br /></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: center;"><a href="https://blogger.googleusercontent.com/img/a/AVvXsEiR01\_dcCbt53mbhKnw6l-Dilr2FLFNToVAtMZhr5YXae1wht-IMaEcZ2e1n-\_JnxQLYDDxoqeDH\_7X9JqWvaPQr\_-EplRCdpeafyq36EC1O88y05xm0rJH2h0TF22\_q1CCOCwZlcbID8ddrI6QE\_KEZJUvLg1z2DaxHaTs\_FVfmFh5m1QQCfM5gDt4Q=s211" style="color: #cc6611; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><span style="font-family: georgia; font-size: medium;"><b><a name="rangkaiian">2. Rangkaian Simulasi</a><a href="#home" style="color: #cc6611; text-decoration-line: none;">[Kembali]</a></b></span></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><br /></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: center;"><a href="https://blogger.googleusercontent.com/img/a/AVvXsEj0TcJBNGpywc-9gwmHzbW1sz3-Lz7kS20FWDSaEK9MwXSFqCGGtceV-sEOMovLtRsSZHTcTPgj\_nnilad6uMuyOe5XV4MqyXIDkMV0S3Lwsq6xMdVBuHk4HhVn4kxpYYK31a39Pk5hRP7sNF-ogQyBCmc6YyGg5ap2xzSub551T4c5CEE3E-oz1Hlg=s731" style="color: #cc6611; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a></div><br /><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><br /></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><span style="font-family: georgia; font-size: medium;"><b><br /></b></span></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><span style="font-family: georgia; font-size: medium;"><b><a name="flowchart">3. Flowchart</a><a href="#home" style="color: #cc6611; text-decoration-line: none;">[Kembali]</a></b></span></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: center;"><a href="https://blogger.googleusercontent.com/img/a/AVvXsEhNjSuQjWaagvEjGUfrl1CupHTNkRWBXQH8VLkrsF9-4FBxBjBFEZv6e1nJ0e\_ho1jBbEB8qmlHh57Xj-Sik5TF4MSje86JHND-TvdJygveJwa\_AfiUdPD RYNpJQkwJSDe80\_IIVtEyNIC8oHazjBeZGFBdptVn84DffSjvHTteVFbhf6NA5xHPrR7w=s596" style="color: #cc6611; margin-left: 1em; margin-right: 1em; text-decoration-line: none;"></a></div><br /><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><br /></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><br /></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><span style="font-family: georgia; font-size: medium;"><b><a name="listing">4. Listing Program</a><a href="#home" style="color: #cc6611; text-decoration-line: none;">[Kembali]</a></b></span></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><div class="separator" style="clear: both;">byte pin[] = {2, 3, 4, 5, 6, 7, 8, 9}; //Deklarasi pin yang digunakan pada 7-segment dengan tipe data byte</div><div class="separator" style="clear: both;">void setup()&nbsp;   //Semua kode dalam fungsi ini hanya dieksekusi sekali</div><div class="separator" style="clear: both;">{ for (int i = 0; i &lt; 9; i++) //Kondisi perulangan dari 0 hingga batas kecil dari 9; Increase</div><div class="separator" style="clear: both;">{</div><div class="separator" style="clear: both;">pinMode(pin[i], OUTPUT); //Deklarasi pin yang digunakan sebagai OUTPUT</div><div class="separator" style="clear: both;">}</div><div class="separator" style="clear: both;">void loop()&nbsp;   &nbsp;   //Semua kode dalam fungsi ini di eksekusi berulang</div><div class="separator" style="clear: both;">{</div><div class="separator" style="clear: both;">digitalWrite(2, LOW);</div><div class="separator" style="clear: both;">digitalWrite(3, HIGH);&nbsp;  </div><div class="separator" style="clear: both;">digitalWrite(4, HIGH);&nbsp;  </div><div class="separator" style="clear: both;">digitalWrite(5, HIGH);&nbsp;  </div><div class="separator" style="clear: both;">digitalWrite(6, HIGH);&nbsp;  </div><div class="separator" style="clear: both;">digitalWrite(7, LOW);</div><div class="separator" style="clear: both;">digitalWrite(8, LOW);</div><div class="separator" style="clear: both;">digitalWrite(9, HIGH);</div><div class="separator" style="clear: both;"><br /></div>

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</div><div class="separator" style="clear: both;">delay (500);</div><div class="separator" style="clear: both;">digitalWrite(2, LOW);</div><div class="separator" style="clear: both;">digitalWrite(3, LOW);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(4, LOW);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(5, HIGH);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(6, HIGH);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(7, LOW);</div><div class="separator" style="clear: both;">digitalWrite(8, LOW);</div><div class="separator" style="clear: both;">digitalWrite(9, HIGH);</div><div class="separator" style="clear: both;"><br /></div><div class="separator" style="clear: both;">delay (500);</div><div class="separator" style="clear: both;">digitalWrite(2, LOW);</div><div class="separator" style="clear: both;">digitalWrite(3, HIGH);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(4, HIGH);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(5, HIGH);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(6, HIGH);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(7, LOW);</div><div class="separator" style="clear: both;">digitalWrite(8, LOW);</div><div class="separator" style="clear: both;">digitalWrite(9, LOW);</div><div class="separator" style="clear: both;"><br /></div><div class="separator" style="clear: both;">delay (500);</div><div class="separator" style="clear: both;">digitalWrite(2, LOW);</div><div class="separator" style="clear: both;">digitalWrite(3, LOW);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(4, LOW);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(5, HIGH);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(6, LOW);&nbsp;</div><div class="separator" style="clear: both;">digitalWrite(7, LOW);</div><div class="separator" style="clear: both;">digitalWrite(8, LOW);</div><div class="separator" style="clear: both;">digitalWrite(9, LOW);</div><div class="separator" style="clear: both;">delay (500);</div><div class="separator" style="clear: both;"><br /></div><div class="separator" style="clear: both;"></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><br /></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: justify;"><span style="font-family: georgia;"><b><a name="video">5. Video</a><a href="#home" style="color: #cc6611; text-decoration-line: none;">[Kembali]</a></b></span></div><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: center;"><iframe allowfullscreen="allowfullscreen" class="b-hbp-video b-uploaded" frameborder="0" height="266" id="BLOGGER-video-df5f3dd9be659a6c-17786" mozallowfullscreen="mozallowfullscreen" src="https://www.blogger.com/video.g?token=AD6v5dzG3s-ke5X0E3XFAdKt8u2S_k7531RID7B3dKS_ft0GUGgZ7ALB9k0snQR6Ih9uxWC-gIn7Hs1bXzvMFYvSnu7DAVm_LcxTCgqMvgrzJXcYo5kVDApnwj1rw5QlKExl5es4Kr4t" webkitallowfullscreen="webkitallowfullscreen" width="320"></iframe></div><br /><div class="separator" style="clear: both; text-align: center;"><object class="BLOG_video_class" contentid="f7a25e39d44f6789" height="266" id="BLOG_video-f7a25e39d44f6789" width="320"></object></div><br /><div class="separator" style="clear: both; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; text-align: center;"><br /><br /></div><span style="font-family: georgia; font-size: medium;"><b><a name="kondisi">6. Kondisi</a><a href="#home" style="color: #cc6611; text-decoration-line: none;">[Kembali]</a></b></span><div style="font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif;"><span style="font-family: georgia;">Seven Segmen menampilkan angka 1,4,7,9 secara otomatis dan
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bergantian

Analisa :

1. Jelaskan apa yang akan terjadi saat tipe data byte pada baris 1 diganti menjadi tipe data char

Jawab :| Tidak terjadi perubahan pada hasil percobaan dikarenakan tipe data char bisa juga dipakai untuk listing program pada percobaan ini

2. Jelaskan perbedaan cara penggunaan seven segment

Jawab : Common anoda adalah kode yang terhubung dalam semua anoda LED pada 7-segment. Common anoda diberi tegangan vcc dan seven segment dengan common anoda akan aktif pada saat diberi logika rendah atau sering disebut aktif low

Common katoda merupakan pin yang terhubung ke semua kaki katoda LED dalam seven segmen dengan common katoda akan aktif jika diberi logika tinggi atau disebut aktif high

7. Link Download

File rangkaian

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Video simulasi

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Video simulasi proteus

[\[Download\]](https://drive.google.com/file/d/1LwVme7bvOlYvWyQsHvdMXHR8xx_SKxE/view?usp=sharing)

Datasheet Arduino

[\[Download\]](https://drive.google.com/file/d/11q37maJhtalO2qU9duFXhfrs9-D_ddc/view?usp=sharing)

Datasheet seven segment

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Library arduino

[\[Download\]](https://drive.google.com/file/d/1Z43DZRtGtMAFCCTo9GUptcOK3o5Hkbj3/view?usp=sharing)

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georgia;">HTML&nbsp; &nbsp; &nbsp; &nbsp; &nbsp;[Download]</span></div></div>