
 Tugas Pendahuluan 1 Modul 1

 [KEMBALI KE MENU SEBELUMNYA]
 DAFTAR ISI
 1. Prosedur 2. Hardware dan diagram blok 3. Rangakaian Simulasi dan Prinsip Kerja 4. Flowchart 5. Kondisi 6. Video Simulasi 7. Download File

 <div style="background-color: white; border: 0px; box-sizing: border-box; color: #444444; font-family: "open sans", arial, helvetica, sans-serif; font-size: x-large; margin: 0px; padding: 0px; text-align: center;">Percobaan 4 Kondisi 2 <div style="background-color: white; border: 0px; box-sizing: border-box; color: #444444; font-family: "open sans", arial, helvetica, sans-serif; font-size: x-large; margin: 0px; padding: 0px; text-align: center;">
 Pada percobaan 4 kondisi 2 kondisi rangkaian yaituKeypad 1 hingga 9 memberikan PWM 180-0 dengan jarak PWM antar Key 20
 1. Prosedur [Kembali] <ul style="color: #222222; font-family: arial; line-height: 1.4; margin: 0.5em 0px; padding: 0px 2.5em;"><li style="margin: 0px 0px 0.25em; padding: 0px;">Rangkailah semua komponen <li style="margin: 0px 0px 0.25em; padding: 0px;">Buat program di aplikasi arduino IDE
<li style="margin: 0px 0px 0.25em; padding: 0px;">Setelah selesai, masukkan program ke arduino <li style="margin: 0px 0px 0.25em; padding: 0px;">Jalankan program pada simulasi dan lakukan sesuai kondisi
<li style="margin: 0px 0px 0.25em; padding: 0px;">Aktifkan Switch 1 dan 2
 a. Hardware   <div

style="color: #222222; font-family: Arial, Tahoma, Helvetica, FreeSans, sans-serif; font-size: 13.2px; text-align: start;">1. Arduino Uno
 2. Keypad

 3. Motor PWM Servo

 <img border="0" data-original-height="88" data-original-width="98" height="359" src="https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEjM4i2SFAdmqBRKyNO77NLp-ItGSruVSqbDgxHca8Fb939TGhYtiXdUz6oSBooJvUf8th3QlvrsKlYHkmTbAJjhID5U7ZrTz0oDNIWF-AjHrUpvwvxFVlICQywrNM6kETW2q6RYfvnOfbllbug0lWQdZHu_Gxwh2LdmtIPuy6tnHPtpFMdWAdzGtGXdRIk

/w400-h359/Screenshot%202024-03-23%20095156.png" width="400" />

 4. VCC

 5. Ground

 b. Diagram blok

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style="clear: both; text-align: center;"> 3. Rangkaian Simulasi dan Prinsip Kerja [Kembali]
 a) Gambar rangkaian sebelum dijalankan

 b) Gambar rangkaian sesudah dijalankan

 Prinsip Kerja

 Pada rangkaian diatas, merupakan percobaan 4 kondisi 2, pada percobaan ini kondisi rangkaian yaitu Keypad 1 hingga 9 memberikan PWM 180-0 dengan jarak PWM antar Key 20.Rangkaian terdiri dari beberapa komponen seperti PWM motor servo, arduino uno, Keypad, VCC, dan Ground.

    Pada rangkaian diatas menggunakan arduino untuk mengendalikan motor servo dengan menggunakan inputan dari keypad. Pada saat rangkaian dijalankan,dan diberikan input pada keypad dimana pada masing masing tombol yang terdapat pada keypad , sudah diberi kondisi pada kodingan. Khusus pada saat pemberian input pertama pada keypad, tegangan pertama yang terbaca pada motor servo adalah sebesar 90 , karena pada void set up (servo motor write)tegangan diatur sebesar 90.
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     Jika keypad diberikan input , keypad akan 1-9 akan memberikan PWM 180-0, dimana pada kodingan diatur setiap kondisi terdapat perbedaan sudut sebesar 45 derjat (nilai sudut putaran akan diubah menjadi sinyal PWM oleh arduino).Selanjutnya motor servo akan berputar porosnya sesuai dengan lebar pulsa sinyal PWM.

 4. Flowchart dan Listing Program [Kembali]

 a. Flowchart

 b. Listing Program #include <Servo.h> #include <Keypad.h> Servo servoMotor; const int servoPin = 11; // PWM pin for servo const int numRows = 4; // Number of rows in keypad const int numCols = 3; // Number of columns in keypad char keys[numRows][numCols] = { {'1', '2', '3'}, {'4', '5', '6'}, {'7', '8', '9'}, {'*', '0', '#'} }; byte rowPins[numRows] = {9, 8, 7, 6}; // Rows 0 to 3 byte colPins[numCols] = {5, 4, 3};   // Columns 0 to 2

  Keypad keypad = Keypad(makeKeymap(keys), rowPins, colPins, numRows, numCols);   void setup() {   servoMotor.attach(servoPin);   servoMotor.write(90); // Initial position   Serial.begin(9600); }   void loop() {   char key = keypad.getKey();   if (key != NO_KEY) {   Serial.println(key);   // Perform actions based on the key pressed   switch (key) {   case '1':   // Move servo to position 0 degrees   servoMotor.write(180);   break;   case '2':   // Move servo to position 45 degrees   servoMotor.write(160);   break;   case '3':   // Move servo to position 90 degrees   servoMotor.write(140);   break;   case '4':   // Move servo to position 135 degrees   servoMotor.write(<span style="color:

#005c5f;">120);   break;   case '5':   // Move servo to position 180 degrees   servoMotor.write(100);   break;   case '6':   // Move servo to position 135 degrees   servoMotor.write(80);   break;   case '7':   // Move servo to position 90 degrees   servoMotor.write(60); break; case '8': // Move servo to position 45 degrees servoMotor.write(40); break; case '9': // Move servo to position 0 degrees servoMotor.write(20); break; default: break; } } }

 5. Kondisi [Kembali]
 Pada percobaan 3 kondisi 2 kondisi rangkaian yaitu Keypad 1 hingga 9 memberikan PWM 180-0 dengan jarak PWM antar Key 20
 6. Video Simulasi<span style="color: black; font-family: times, "times new roman", serif;

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font-family: times, &quot;times new roman&quot;, serif; font-size: medium; white-space:
normal;"></a><a href="#home" style="font-family: times, &quot;times new roman&quot;, serif;
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font-size: medium; white-space: normal;">HTML Klik disini <a
href="https://docs.google.com/document/d/1MS86vyfabOjKjmt4iFy4vsNH4v_02Arx/edit?usp=shari
ng&amp;ouid=117183602155354684618&amp;rtpof=true&amp;sd=true">Klik disini</a></div><div
style="color: black; font-family: &quot;Times New Roman&quot;; font-size: medium; white-space:
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k disini </a></div><div style="color: black; font-family: &quot;Times New Roman&quot;;
font-size: medium; white-space: normal;">Video Simulasi <a
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lik disini</a></div><div style="color: black; font-family: &quot;Times New Roman&quot;; font-size:
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