LAMPIRAN

```
Timer2.setCompare(TIMER_CH2, 1);
 Timer2.attachInterrupt(TIMER_CH2,INT1);
 Timer2.refresh();

 Timer3.init();
 Timer3.pause(); // stop timer
 Timer3.setMasterMode(TIMER_MASTER_MODE_UPDATE);
 Timer3.setPrescaleFactor(3); //5.2Khz
 Timer3.setOverflow(setOverflow);
 Timer3.setCount(0);
 Timer3.setMode(TIMER_CH1, TIMER_PWM);
 Timer3.refresh();
 Timer2.resume();
 Timer3.resume();
 inADC.setSamplingTime(ADC_SMPR_3);
 inADC.enableDMA();
}
void loop()
{
 if (Timer3.getCount() >= 2000)
 count = setOverflow-Timer3.getCount();
 else
 count = Timer3.getCount();
```

```
 car1 = map(count, 0, 2000, 0, 2000);
 car2 = map(count, 0, 2000, 2000, 4000);
 car3 = map(count, 0, 2000, -2000, 0);
 car4 = map(count, 0, 2000, -2000, -4000);

 R();
 serial();
}
void INT1(void){
 vsin = map(analogRead(PA2), 0, 4095, -4000, 4000);
  vref = map(vsin, -4000, 4000, 4000, -4000);

  act = map(analogRead(PA0), 0, 4095, -4000, 4000);
  vact = map(act, -4000, 4000, 4000, -4000);

  arus = map(analogRead(PA1), 0, 4095, -4000, 4000);
  iact = map(arus, -4000, 4000, 4000, -4000);
 }
void R(){

err_v = vref - vact;
  P_v = kp_v * err_v;
  itg_v = lastitg_v + err_v * 0.00001;
  I_v = ki_v * itg_v;
  pi_v = P_v + I_v;
```

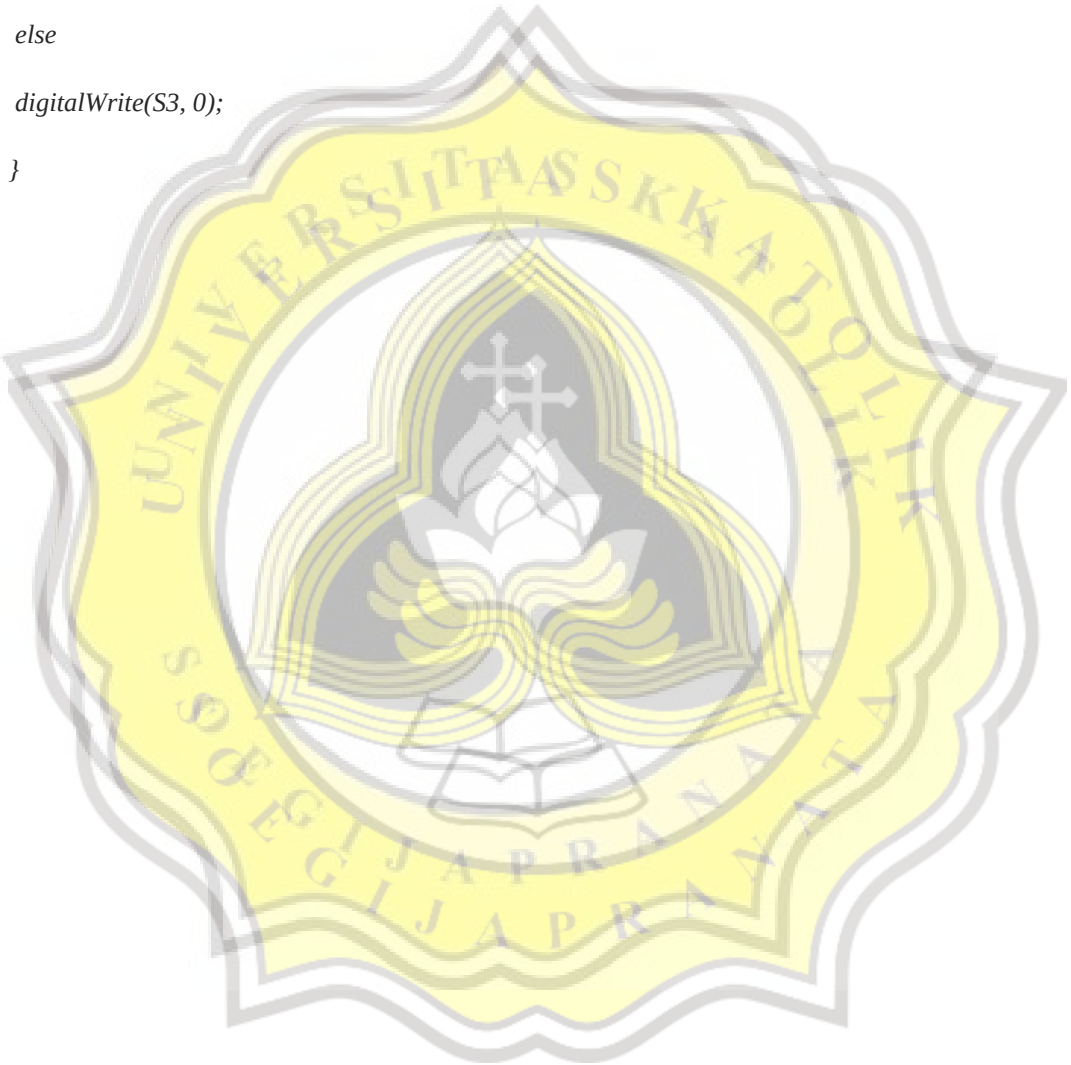
```
 if (pi_v > -4000 && pi_v < 4000) // current anti windup
 {
  lastitg_v = itg_v;
 }

 iref = pi_v;
 err = iref - iact;
 P = kp * err;
 itg=lastitg+err*0.00001;
 I =ki * itg;
 pi = P + I;

//Bidirect 1
 if (pi >= car1){
  digitalWrite(B1, 1);
 }
 else {
  digitalWrite(B1, 0);
 }
//Saklar 1
 if (pi >= car2){
  digitalWrite(S1, 1);
 }
 else{
```

```
 digitalWrite(S1, 0);
 }
//Bidirect 2
 if (pi >= car3){
  digitalWrite(B2, 0);
 }
 else{
  digitalWrite(B2, 1);
 }
//Saklar 2
 if (pi >= car4){
  digitalWrite(S2, 0);
 }
 else{
  digitalWrite(S2, 1);
 }
////ZC////
 if (pi >= DT)     //zero crossing
 {
 digitalWrite(S3, 0);
 digitalWrite(S4, 1);
 }
 else
 digitalWrite(S4, 0);
```

```
if (pi <= DT)     //zero crossing
{
digitalWrite(S3, 1);
digitalWrite(S4, 0);
}
else
digitalWrite(S3, 0);
}
```



Similarity Report

PAPER NAME

18.f1.0013_File antiplagiasi_Laporan Tugas akhir.docx

WORD COUNT	CHARACTER COUNT
3563 Words	22546 Characters
PAGE COUNT	FILE SIZE
22 Pages	46.0KB
SUBMISSION DATE	REPORT DATE
Oct 13, 2022 8:36 AM GMT+7	Oct 13, 2022 8:37 AM GMT+7

19% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

- 18% Internet database
- 0% Publications database
- Crossref database
- Crossref Posted Content database
- 5% Submitted Works database

Excluded from Similarity Report

- Bibliographic material
- Quoted material
- Cited material
- Small Matches (Less then 10 words)
- Manually excluded text blocks

Summary