Listening Program

```
#include <Wire.h>
#include <RTClib.h>
#include <SD.h>
#include <LiquidCrystal.h>
#include <EEPROM.h>
#include <TimerOne.h>


LiquidCrystal lcd(8, 7, 6, 5, 1, 0);
#define buz   9
#define down  A1
#define up    A2
#define ok    A3
#define mem   A0
#define pwm   3
int trigPin = 10;
int echoPin = 2;

int memo0, memo1, memo2, memo3, memo4, memo5, memo;
int menit1, menit2, menit3, menit4, menit5;
int detik1, detik2, detik3, detik4, detik5;
int hourjam=0,hourmenit=0,hourdetik=0;
int menu;


int flag, menit = 30, detik, duration, cm, nilai, detiks,
menits;
File myFile;
RTC_DS3231 rtc;

char daysOfTheWeek[7][12] = {"Minggu", "Senin", "Selasa",
"Rabu", "Kamis", "Jumat", "Sabtu"};
```

```
void setup() {
    pinMode(down, INPUT_PULLUP);
  pinMode(up, INPUT_PULLUP);
  pinMode(ok, INPUT_PULLUP);
  pinMode(mem, INPUT_PULLUP);
  pinMode(buz, OUTPUT);
  Timer1.initialize(1000000);
  Timer1.attachInterrupt( isr );
  lcd.begin(16, 2);
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  if (!SD.begin(4)) {
      lcd.setCursor(0, 0);
      lcd.print("Failed ");
      return;
    }
    lcd.setCursor(0, 0);
    lcd.print("Success");
    delay(1000);
    lcd.clear();

    if (! rtc.begin()) {
     lcd.setCursor(0, 0);
    lcd.print("Couldn't find RTC");
    while (1);
  }
  if (rtc.lostPower()) {
    lcd.setCursor(0, 0);
    lcd.print("lets set the time!");
explicit date & time, for example to set
  }
  digitalWrite(buz, HIGH); delay(500);
}
```

```
void isr() {
  if (flag == 1) {
    hourdetik++;
    detiks++;
    if (hourdetik > 60)
    {
      hourmenit++;
      hourdetik = 0;

    }
    if(hourmenit>60){
      hourmenit=0;
      hourjam++;
    }
    if (detiks > 60)
    {
      menits++;
      detiks = 0;
    }

    if (menit < 0) {
      flag = 0;
    }
    if (menit > -1) {
      detik--;
      if (detik < 0) {
        if (menit > 0)menit--;
        detik = 59;
      }
    }
  }
}
```

```
void ukur_jarak() {
  digitalWrite(trigPin, LOW);
  delayMicroseconds(5);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  duration = pulseIn(echoPin, HIGH);
  cm = (duration / 2) / 29.1;

}



void ertece() {
DateTime now = rtc.now();

myFile.print(daysOfTheWeek[now.dayOfTheWeek()]);

    myFile.print(",");

    myFile.print(now.day(), DEC);
    myFile.print("/");
    myFile.print(now.month(), DEC);
    myFile.print("/");
    myFile.print(now.year(), DEC);

myFile.println();
    myFile.print(now.hour(), DEC);
    myFile.print(":");
    myFile.print(now.minute(), DEC);
    myFile.print(":");
    myFile.print(now.second(), DEC);
}
```

```
void memori() {
  lcd.clear();
  while (1) {
    if (digitalRead(up) == LOW) {
      delay(500);
      lcd.clear();
      menu++;
    }
    if (digitalRead(down) == LOW) {
      delay(500);
      lcd.clear();
      menu--;
    }
    if (menu > 4)menu = 0;
    if (menu < 0)menu = 4;

    if (menu == 0) {
      menit1 = EEPROM.read(6);
      detik1 = EEPROM.read(11);
      lcd.setCursor(0, 0);
      lcd.print("Memori 1");
      lcd.setCursor(0, 1);
      lcd.print(menit1);
      lcd.print(":");
      lcd.print(detik1);
    }
    if (menu == 1) {
      menit2 = EEPROM.read(7);
      detik2 = EEPROM.read(12);
      lcd.setCursor(0, 0);
      lcd.print("Memori 2");
      lcd.setCursor(0, 1);
      lcd.print(menit2);
      lcd.print(":");
      lcd.print(detik2);

    }
```

```
   if (menu == 2) {
      menit3 = EEPROM.read(8);
      detik3 = EEPROM.read(13);
      lcd.setCursor(0, 0);
      lcd.print("Memori 3");
      lcd.setCursor(0, 1);
      lcd.print(menit3);
      lcd.print(":");
      lcd.print(detik3);

    }
    if (menu == 3) {
      menit4 = EEPROM.read(9);
      detik4 = EEPROM.read(14);

      lcd.setCursor(0, 0);
      lcd.print("Memori 4");
      lcd.setCursor(0, 1);
      lcd.print(menit4);
      lcd.print(":");
      lcd.print(detik4);

    }
    if (menu == 4) {
      menit5 = EEPROM.read(10);
      detik5 = EEPROM.read(15);
      lcd.setCursor(0, 0);
      lcd.print("Memori 5");
      lcd.setCursor(0, 1);
      lcd.print(menit5);
      lcd.print(":");
      lcd.print(detik5);

    }
    if (digitalRead(mem) == LOW){delay(500);break;}
  }
}
```

```
void save() {
  flag = 0;
  if (memo == 1)}
lcd.setCursor(0, 0);
      lcd.print("Failed ");
      return;}
    lcd.setCursor(0, 0);
    lcd.print("Success write");
    delay(1000);*/
    menit1 = menits;
    detik1 = detiks;
    EEPROM.write(6, menit1);
    EEPROM.write(11, detik1);
    myFile = SD.open("data.txt", FILE_WRITE);
    if (myFile) {
      myFile.println();
      myFile.print("memo1");
      myFile.println();
      myFile.print("Waktu tersimpan:");
      myFile.print(menit1);
      myFile.print(":");
      myFile.print(detik1);
      myFile.println();
      ertece();myFile.println();
      myFile.close();
    } else {
      lcd.setCursor(0, 0);
      lcd.print("failed open");
    }
    delay(1000);
    lcd.setCursor(0, 0);
    lcd.print("saved mem1");
    lcd.setCursor(0, 1);
    lcd.print(menit1);
    lcd.print(":");
    lcd.print(detik1);
```

```
    delay(2000);


if (memo == 2)
  {
    menit2 = menits;
    detik2 = detiks;
    EEPROM.write(7, menit2);
    EEPROM.write(12, detik2);
    myFile = SD.open("data.txt", FILE_WRITE);
    if (myFile) {
      myFile.println();
      myFile.print("memo2");
      myFile.println();
      myFile.print("Waktu tersimpan:");
      myFile.print(menit2);
      myFile.print(":");
      myFile.print(detik2);
      myFile.println();
      ertece();myFile.println();
      myFile.close();
    } else {
      lcd.setCursor(0, 0);
      lcd.print("failed open");
    }

    lcd.setCursor(0, 0);
    lcd.print("saved mem2");
    lcd.setCursor(0, 1);
    lcd.print(menit2);
    lcd.print(":");
    lcd.print(detik2);
    delay(2000);
  }
```

```
if (memo == 3)
{
  menit3 = menits;
  detik3 = detiks;
  EEPROM.write(8, menit3);
  EEPROM.write(13, detik3);
  myFile = SD.open("data.txt", FILE_WRITE);
  if (myFile) {
    myFile.println();
    myFile.print("memo3");
    myFile.println();
    myFile.print("Waktu tersimpan:");
    myFile.print(menit3);
    myFile.print(":");
    //myFile.println("detik");
    myFile.print(detik3);
    myFile.println();
    ertece();myFile.println();
    myFile.close();
  } else {
    lcd.setCursor(0, 0);
    lcd.print("failed open");
  }
  lcd.setCursor(0, 0);
  lcd.print("saved mem3");

  lcd.setCursor(0, 1);
  lcd.print(menit3);
  lcd.print(":");
  lcd.print(detik3);
  delay(2000);
}
if (memo ==4){
  menit4 = menits;
  detik4 = detiks;
  EEPROM.write(9, menit4);
  EEPROM.write(14, detik4);
```

```
myFile = SD.open("data.txt", FILE_WRITE);
   if (myFile) {
     myFile.println();
     myFile.print("memo4");
     myFile.println();
     myFile.print("Waktu tersimpan:");
     myFile.print(menit4);
     myFile.print(":");
     myFile.print(detik4);
     myFile.println();
     ertece();myFile.println();
     myFile.close();
   } else {
     lcd.setCursor(0, 0);
     lcd.print("failed open"); }
   lcd.setCursor(0, 0);
   lcd.print("saved mem4");
   lcd.setCursor(0, 1);
   lcd.print(menit4);
   lcd.print(":");
   lcd.print(detik4);
   delay(2000);}
 if (memo == 5)
 {
   menit5 = menits;
   detik5 = detiks;
   EEPROM.write(10, menit5);
   EEPROM.write(15, detik5);
   myFile = SD.open("data.txt", FILE_WRITE);
   if (myFile) {
```

```
      myFile.println();
      myFile.print("memo5");
      myFile.println();
      myFile.print("Waktu tersimpan:");
      myFile.print(menit5);
      myFile.print(":");
      myFile.print(detik5);
      myFile.println();
      ertece();myFile.println();
      myFile.close();
    } else {
      lcd.setCursor(0, 0);

lcd.print("failed open");
    }

    lcd.setCursor(0, 0);
    lcd.print("saved mem5");

    lcd.setCursor(0, 1);
    lcd.print(menit5);
    lcd.print(":");
    lcd.print(detik5);
    delay(2000);
  }
}

void pause() {
  lcd.clear();
  flag = 0;
  analogWrite(pwm, 0);
  lcd.setCursor(0, 1);
  lcd.print("jarak=");
  lcd.print(0);

}
```

```
void mains() {
  detik = 0;
  detiks=0; menits=0;
  while (1) {
    ukur_jarak();
    if (cm <21){
      flag = 1;
      lcd.setCursor(0, 0);
      lcd.print("TIME =");
      lcd.print(menit);
      lcd.print(":");
      lcd.print(detik);
      lcd.setCursor(0, 1);
      lcd.print("jarak=");
      lcd.print(cm);
      lcd.print("cm");
    nilai = cm * 12.5;
    analogWrite(pwm, nilai);
    EEPROM.write(16, hourjam);
    EEPROM.write(17, hourmenit);
    EEPROM.write(18, hourdetik);
    lcd.setCursor(11,1):
lcd.print(hourjam);lcd.print(":");lcd.print(hourmenit }
    if (cm > 20) {
      pause();}
    if (menit == 0 && detik == 0){
digitalWrite(buz, HIGH);
      delay(1000);break;}
    delay(200);lcd.clear();
    if (digitalRead(ok) == LOW){
      delay(500);break;}
    if (digitalRead(mem) == LOW) {
      delay(500);
      memo++;if(memo>5){memo=1;}
      EEPROM.write(19, memo);
      delay(500); save();
      break; }}}
```

```
void loop() {
    digitalWrite(buz, LOW);
    analogWrite(pwm, 0);

    if (menit > 30) {
      menit = 1;
    }
    if (menit < 0) {
      menit = 30;
    }
    if (digitalRead(up) == LOW) {
      delay(500);
      menit++;
    }
    if (digitalRead(down) == LOW) {
      delay(500);
      menit--;
    }
    lcd.setCursor(0, 0);
    lcd.print("Setwaktu");
    lcd.setCursor(0, 1);
    lcd.print(menit);
    lcd.print("menit");
    lcd.setCursor(11, 1);
lcd.print(hourjam);lcd.print(":");lcd.print(hourmenit);//lcd.pr
int(":");lcd.print(hourdetik);
    hourdetik = EEPROM.read(18);
    hourmenit = EEPROM.read(17);
    hourjam = EEPROM.read(16);
    memo= EEPROM.read(19);
    //lcd.setCursor(10, 0);
    //lcd.print(memo);
    if (digitalRead(mem) == LOW){delay(500);memori();}
    if (digitalRead(ok) == LOW) {delay(500);mains();}
    delay(100);
    lcd.clear();
```