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LAMPIRAN

Lampiran Rangkaian Keseluruhan
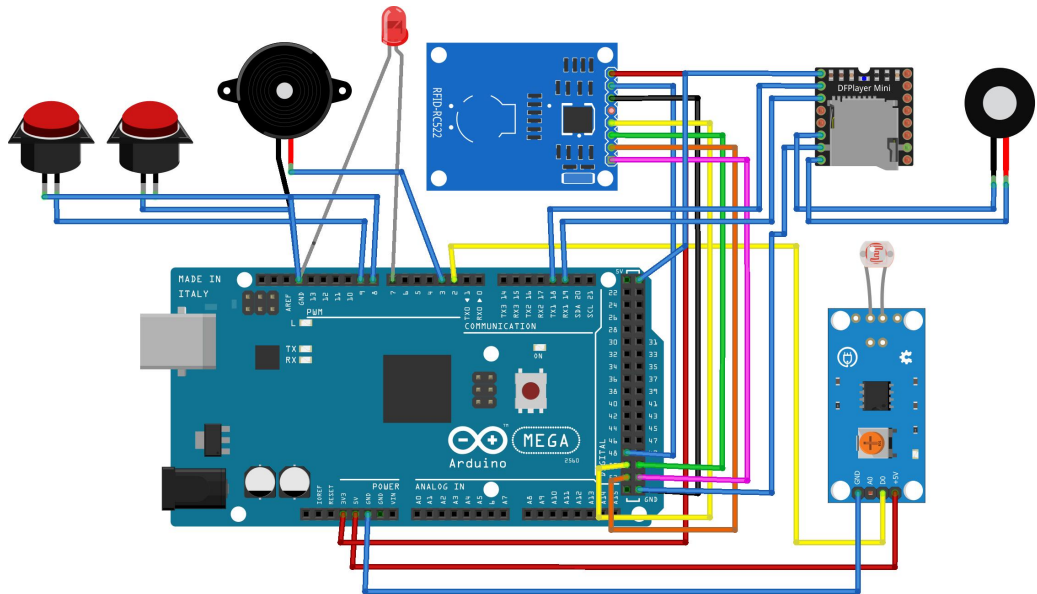
Lampiran Program Keseluruhan

```
#include <SoftwareSerial.h>

#include "DFRobotDFPlayerMini.h"

#include <MFRC522.h>

#include <SPI.h>

SoftwareSerial mySerial(10, 11);

DFRobotDFPlayerMini myDFPlayer;


//RFID

#define SS_PIN 7

#define RST_PIN 9

String UID = "";

hitung = 0;
```

```arduino
MFRC522 rfid(SS_PIN, RST_PIN);

String rfidData;


int ldr1 = 0;

int ldr2 = 0;

int ldr3 = 0;

int ldr4 = 0;

int ldr5 = 0;

int ldr6 = 0;

int ldr7 = 0;

int statusDF1,statusDF2,statusDF3,statusDF4,statusDF5,statusDF6,statusDF7;

int buttonSatu = 0;

int buttonDua = 0;

int LED = 2;

void setup(){

  Serial.begin(9600);

  mySerial.begin(9600);

  pinMode(A0, INPUT);

  pinMode(A1, INPUT);

  pinMode(A2, INPUT);

  pinMode(A3, INPUT);

  pinMode(A4, INPUT);

  pinMode(A5, INPUT);

  pinMode(A6, INPUT);
```

```
  pinMode(LED, OUTPUT);

  pinMode(3, INPUT_PULLUP);

  pinMode(4, INPUT_PULLUP);

  if (!myDFPlayer.begin(mySerial)) {

    Serial.println(F("Error initializing DFPlayer Mini!"));

    while (true);

  }


  myDFPlayer.volume(30);

  myDFPlayer.playFolder(1,1);

}


void loop(){

  if(hitung == 1){

  ldr1 = analogRead(A1);

  ldr2 = analogRead(A2);

  ldr3 = analogRead(A3);

  ldr4 = analogRead(A4);

  ldr5 = analogRead(A0);

  ldr6 = analogRead(A5);

  ldr7 = analogRead(A6);

  buttonSatu = digitalRead(3);

  buttonDua = digitalRead(4);

  Serial.println("A0 : "+(String)analogRead(A0));
```

```arduino
    Serial.println("A1 : "+(String)analogRead(A1));

    Serial.println("A2 : "+(String)analogRead(A2));

    Serial.println("A3 : "+(String)analogRead(A3));

    Serial.println("A4 : "+(String)analogRead(A4));

    Serial.println("A5 : "+(String)analogRead(A5));

    Serial.println("A6 : "+(String)analogRead(A6));

    Serial.println("B1 : "+(String)digitalRead(buttonSatu));

    Serial.println("B2 : "+(String)digitalRead(buttonDua));

    logic();
//  stateDF();

    delay(500);

    }

    sensorRFID();

}


void stateDF(){
  if(statusDF1 == "aktif"){
    statusDF2 = "";

    statusDF3 = "";

    statusDF4 = "";

    statusDF5 = "";

    statusDF6 = "";

    statusDF7 = "";

    }
```

```
if(statusDF2 == "aktif"){

 statusDF1 = "";

 statusDF3 = "";

 statusDF4 = "";

 statusDF5 = "";

 statusDF6 = "";

 statusDF7 = "";

}

if(statusDF3 == "aktif"){

 statusDF2 = "";

 statusDF1 = "";

 statusDF4 = "";

 statusDF5 = "";

 statusDF6 = "";

 statusDF7 = "";

}

if(statusDF4 == "aktif"){

 statusDF2 = "";

 statusDF3 = "";

 statusDF1 = "";

 statusDF5 = "";

 statusDF6 = "";

 statusDF7 = "";

}
```

```
if(statusDF5 == "aktif"){
 statusDF2 = "";
 statusDF3 = "";
 statusDF4 = "";
 statusDF1 = "";
 statusDF6 = "";
 statusDF7 = "";
}
if(statusDF6 == "aktif"){
 statusDF2 = "";
 statusDF3 = "";
 statusDF4 = "";
 statusDF5 = "";
 statusDF1 = "";
 statusDF7 = "";
}
if(statusDF7 == "aktif"){
 statusDF2 = "";
 statusDF3 = "";
 statusDF4 = "";
 statusDF5 = "";
 statusDF6 = "";
 statusDF1 = "";
}
```

```
  }


void sensorRFID(){
 if ( ! rfid.PICC_IsNewCardPresent())

  return;

 if ( ! rfid.PICC_ReadCardSerial())

  return;

 Serial.print("Scanning");

 Serial.print("NUID tag is :");

 String IDKARTU = "";

 for (byte i = 0; i < rfid.uid.size; i++) {

   Serial.print(".");

   IDKARTU += String(rfid.uid.uidByte[i], HEX);

   delay(300);

   }

   IDKARTU.toUpperCase();

   IDKARTU.replace("\n", "");

   IDKARTU.replace("\r", "");

   Serial.println(IDKARTU);

 if (IDKARTU == "139718AD" || IDKARTU == "F322DF27") {

    hitung += 1;

    if(hitung == 1){

     Serial.println("statusAlat:ON");

    }
```

```arduino
    if(hitung == 2){

     Serial.println("statusAlat:OFF");

     hitung = 0;

     }

   }else{

     Serial.println("statusAlat:UNKNOWN");

     digitalWrite(buzzer, HIGH);

     delay(50);

     digitalWrite(buzzer, LOW);

     delay(50);

     digitalWrite(buzzer, HIGH);

     delay(50);

     digitalWrite(buzzer, LOW);

     delay(50);

     digitalWrite(buzzer, HIGH);

     delay(50);

     digitalWrite(buzzer, LOW);

     delay(50);

    }

 rfid.PICC_HaltA();


}


void logic(){
```

```
if(ldr1 > 100 && ldr2 < 100 && ldr3 < 100 && ldr4 < 100 && ldr5 < 100 &&
ldr6 < 100 && ldr7 < 100 && statusDF1 != "aktif"){ //not
  myDFPlayer.playFolder(2,1);
    statusDF1 = "aktif";
}
if(ldr1 > 100 && ldr2 > 100 && ldr3 < 100 && ldr4 < 100 && ldr5 < 100 &&
ldr6 < 100 && ldr7 < 100 && statusDF2 != "aktif"){ //and
  myDFPlayer.playFolder(3,1);
    statusDF2 = "aktif";
}
if(ldr1 > 100 && ldr2 > 100 && ldr3 > 100 && ldr4 < 100 && ldr5 < 100 &&
ldr6 < 100 && ldr7 < 100 && statusDF3 != "aktif"){ //nand
  myDFPlayer.playFolder(4,1);
    statusDF3 = "aktif";
}
if(ldr1 > 100 && ldr2 > 100 && ldr3 > 100 && ldr4 > 100 && ldr5 < 100 &&
ldr6 < 100 && ldr7 < 100 && statusDF4 != "aktif"){ //or
  myDFPlayer.playFolder(5,1);
    statusDF4 = "aktif";
}
if(ldr1 > 100 && ldr2 > 100 && ldr3 > 100 && ldr4 > 100 && ldr5 > 100 &&
ldr6 < 100 && ldr7 < 100 && statusDF5 != "aktif"){ // xor
  myDFPlayer.playFolder(6,1);
    statusDF5 = "aktif";
```

```arduino
}
if(ldr1 > 100 && ldr2 > 100 && ldr3 > 100 && ldr4 > 100 && ldr5 > 100 &&
ldr6 > 100 && ldr7 < 100 && statusDF6 != "aktif"){ //nor
  myDFPlayer.playFolder(7,1);
    statusDF6 = "aktif";
}
if(ldr1 > 100 && ldr2 > 100 && ldr3 > 100 && ldr4 > 100 && ldr5 > 100 &&
ldr6 > 100 && ldr7 > 100 && statusDF7 != "aktif"){ //xnor
  myDFPlayer.playFolder(8,1);
    statusDF7 = "aktif";
}


//NOT 2
  if(buttonDua == LOW && ldr1 > 100 && ldr2 < 100 && ldr3 < 100 && ldr4
< 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
    digitalWrite(LED, LOW);
    myDFPlayer.playFolder(2,2);
    delay(5000);
  }else
  if(buttonDua == HIGH && ldr1 > 100 && ldr2 < 100 && ldr3 < 100 && ldr4
< 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
    digitalWrite(LED, HIGH);
  }
```

```
//AND 3
   if(buttonSatu == LOW && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 < 100 && ldr4 < 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
     digitalWrite(LED, HIGH);
     myDFPlayer.playFolder(3,3);
     delay(5000);
   }else
   if(buttonSatu == HIGH && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 < 100 && ldr4 < 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
     digitalWrite(LED, LOW);
     myDFPlayer.playFolder(3,2);
     delay(5000);
   }else
   if(buttonSatu == HIGH && buttonDua == HIGH && ldr1 > 100 && ldr2 >
100 && ldr3 < 100 && ldr4 < 100 && ldr5 < 100 && ldr6 < 100 && ldr7 <
100){
     digitalWrite(LED, LOW);
   }else
   if(buttonSatu == LOW && buttonDua == HIGH && ldr1 > 100 && ldr2 > 100
&& ldr3 < 100 && ldr4 < 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
     digitalWrite(LED, LOW);
     myDFPlayer.playFolder(3,2);
     delay(5000);
   }
```

```cpp
//NAND 4
  if(buttonSatu == HIGH && buttonDua == HIGH && ldr1 > 100 && ldr2 >
100 && ldr3 > 100 && ldr4 > 100 && ldr5 < 100 && ldr6 < 100 && ldr7 <
100){
    digitalWrite(LED, LOW);
  }else
  if(buttonSatu == HIGH && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
    digitalWrite(LED, HIGH);
    myDFPlayer.playFolder(4,2);
    delay(5000);
  }else
  if(buttonSatu == LOW && buttonDua == HIGH && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
    digitalWrite(LED, HIGH);
    myDFPlayer.playFolder(4,2);
    delay(5000);
  }else
  if(buttonSatu == LOW && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
    digitalWrite(LED, HIGH);
    myDFPlayer.playFolder(4,3);
    delay(5000);
```

```
    }


//OR 5
  if(buttonSatu == HIGH && buttonDua == HIGH  && ldr1 > 100 && ldr2 >
100 && ldr3 > 100 && ldr4 < 100 && ldr5 < 100 && ldr6 < 100 && ldr7 <
100){
    digitalWrite(LED, LOW);
   }else
  if(buttonSatu == HIGH && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 < 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
    digitalWrite(LED, HIGH);
    myDFPlayer.playFolder(5,2);
    delay(5000);
   }else
  if(buttonSatu == LOW && buttonDua == HIGH && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 < 100 && ldr5 < 100 && ldr6 < 100 && ldr7 < 100){
    digitalWrite(LED, HIGH);
    myDFPlayer.playFolder(5,2);
    delay(5000);
   }else
  if(buttonSatu == LOW && buttonDua == LOW  && ldr1 > 100 && ldr2 >
100 && ldr3 > 100 && ldr4 < 100 && ldr5 < 100 && ldr6 < 100 && ldr7 <
100){
    digitalWrite(LED, HIGH);
```

```
    myDFPlayer.playFolder(5,3);

    delay(5000);

    }


//XOR 6


    if(buttonSatu == LOW && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 > 100 && ldr7 < 100){

    digitalWrite(LED, LOW);

    myDFPlayer.playFolder(6,3);

    delay(5000);

    }else

    if(buttonSatu == HIGH && buttonDua == HIGH && ldr1 > 100 && ldr2 >
100 && ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 > 100 && ldr7 <
100){

    digitalWrite(LED, LOW);

    }else

    if(buttonSatu == LOW && buttonDua == HIGH && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 > 100 && ldr7 < 100){

    digitalWrite(LED, HIGH);

    myDFPlayer.playFolder(6,2);

    delay(5000);

    }else
```

```
if(buttonSatu == HIGH && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 > 100 && ldr7 < 100){
    digitalWrite(LED, HIGH);
    myDFPlayer.playFolder(6,2);
    delay(5000);
  }




//NOR 7
  if(buttonSatu == LOW && buttonDua == LOW  && ldr1 > 100 && ldr2 >
100 && ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 < 100 && ldr7 <
100){
    digitalWrite(LED, LOW);
    myDFPlayer.playFolder(7,3);
    delay(5000);
  }else
  if(buttonSatu == HIGH && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 < 100 && ldr7 < 100){
    digitalWrite(LED, LOW);
    myDFPlayer.playFolder(7,2);
    delay(5000);
  }else
  if(buttonSatu == LOW && buttonDua == HIGH && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 < 100 && ldr7 < 100){
```

```arduino
      digitalWrite(LED, LOW);

      myDFPlayer.playFolder(7,2);

      delay(5000);

    }else

    if(buttonSatu == HIGH && buttonDua == HIGH && ldr1 > 100 && ldr2 >
100 && ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 < 100 && ldr7 <
100){

      digitalWrite(LED, HIGH);

    }


//XNOR 8

    if(buttonSatu == HIGH && buttonDua == HIGH && ldr1 > 100 && ldr2 >
100 && ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 > 100 && ldr7 >
100){

      digitalWrite(LED, HIGH);

    }else

    if(buttonSatu == LOW && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 > 100 && ldr7 > 100){

      digitalWrite(LED, HIGH);

      myDFPlayer.playFolder(8,3);

      delay(5000);

    }else

    if(buttonSatu == HIGH && buttonDua == LOW && ldr1 > 100 && ldr2 > 100
&& ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 > 100 && ldr7 > 100){
```

```
      digitalWrite(LED, LOW);

      myDFPlayer.playFolder(8,2);

      delay(5000);

    }else

    if(buttonSatu == LOW && buttonDua == HIGH && ldr1 > 100 && ldr2 > 100

&& ldr3 > 100 && ldr4 > 100 && ldr5 > 100 && ldr6 > 100 && ldr7 > 100){

      digitalWrite(LED, LOW);

      myDFPlayer.playFolder(8,2);

      delay(5000);

    }


}
```