

```
/* Relais & Schalter
 *
 * 2 Schalter für 2 Relais plus zusätzlich Schalten über Seriellen Monitor.
 * Ausgabe vom Status auch auf dem Seriellen Monitor
 *
 * Hermann F.
 * 21. März 2017
 */
```

```
int inPin3 = 3;      // the number of the input pin
int outPin4 = 4;     // the number of the output pin
```

```
int inPin5 = 5;      // the number of the input pin
int outPin6 = 6;     // the number of the output pin
```

```
int inPin7 = 7;      // the number of the input pin
int outPin8 = 8;     // the number of the output pin
```

```
int inPin9 = 9;      // the number of the input pin
int outPin10 = 10;   // the number of the output pin
```

```
int inPin11 = 11;    // the number of the input pin
int outPin12 = 12;   // the number of the output pin
```

```
int inPin13 = 13;    // the number of the input pin
int outPin14 = 14;   // the number of the output pin
```

```
int inPin15 = 15;    // the number of the input pin
int outPin16 = 16;   // the number of the output pin
```

```
int inPin17 = 17;    // the number of the input pin
int outPin18 = 18;   // the number of the output pin
```

```
int inPin19 = 19;    // the number of the input pin
int outPin20 = 20;   // the number of the output pin
```

```
int inPin21 = 21;    // the number of the input pin
int outPin22 = 22;   // the number of the output pin
```

```
int inPin23 = 23;    // the number of the input pin
int outPin24 = 24;   // the number of the output pin
```

```
int inPin25 = 25;    // the number of the input pin
int outPin26 = 26;   // the number of the output pin
```

```
int inPin27 = 27;    // the number of the input pin
int outPin28 = 28;   // the number of the output pin
```

```
int inPin29 = 29;        // the number of the input pin
int outPin30 = 30;       // the number of the output pin

int inPin31 = 31;        // the number of the input pin
int outPin32 = 32;       // the number of the output pin

int inPin33 = 33;        // the number of the input pin
int outPin34 = 34;       // the number of the output pin

int inPin35 = 35;        // the number of the input pin
int outPin36 = 36;       // the number of the output pin

int inPin37 = 37;        // the number of the input pin
int outPin38 = 38;       // the number of the output pin

int inPin39 = 39;        // the number of the input pin
int outPin40 = 40;       // the number of the output pin

int inPin41 = 41;        // the number of the input pin
int outPin42 = 42;       // the number of the output pin

int inPin43 = 43;        // the number of the input pin
int outPin44 = 44;       // the number of the output pin

int state3 = HIGH;       // the current state of the output pin
int reading3;            // the current reading from the input pin
int previous3 = LOW;     // the previous reading from the input pin

int state5 = HIGH;       // the current state of the output pin
int reading5;            // the current reading from the input pin
int previous5 = LOW;     // the previous5 reading from the input pin

int state7 = HIGH;       // the current state of the output pin
int reading7;            // the current reading from the input pin
int previous7 = LOW;     // the previous5 reading from the input pin

int state9 = HIGH;       // the current state of the output pin
int reading9;            // the current reading from the input pin
int previous9 = LOW;     // the previous5 reading from the input pin

int state11 = HIGH;      // the current state of the output pin
int reading11;           // the current reading from the input pin
int previous11 = LOW;    // the previous5 reading from the input pin

int state13 = HIGH;      // the current state of the output pin
int reading13;           // the current reading from the input pin
int previous13 = LOW;    // the previous5 reading from the input pin
```

```
int state15 = HIGH;    // the current state of the output pin
int reading15;         // the current reading5 from the input pin
int previous15 = LOW;  // the previous5 reading5 from the input pin

int state17 = HIGH;    // the current state of the output pin
int reading17;         // the current reading6 from the input pin
int previous17 = LOW;  // the previous5 reading6 from the input pin

int state19 = HIGH;    // the current state of the output pin
int reading19;         // the current reading5 from the input pin
int previous19 = LOW;  // the previous5 reading5 from the input pin

int state21 = HIGH;    // the current state of the output pin
int reading21;         // the current reading6 from the input pin
int previous21 = LOW;  // the previous5 reading6 from the input pin

int state23 = HIGH;    // the current state of the output pin
int reading23;         // the current reading5 from the input pin
int previous23 = LOW;  // the previous5 reading5 from the input pin

int state25 = HIGH;    // the current state of the output pin
int reading25;         // the current reading6 from the input pin
int previous25 = LOW;  // the previous5 reading6 from the input pin

int state27 = HIGH;    // the current state of the output pin
int reading27;         // the current reading5 from the input pin
int previous27 = LOW;  // the previous5 reading5 from the input pin

int state29 = HIGH;    // the current state of the output pin
int reading29;         // the current reading6 from the input pin
int previous29 = LOW;  // the previous5 reading6 from the input pin

int state31 = HIGH;    // the current state of the output pin
int reading31;         // the current reading6 from the input pin
int previous31 = LOW;  // the previous5 reading6 from the input pin

int state33 = HIGH;    // the current state of the output pin
int reading33;         // the current reading5 from the input pin
int previous33 = LOW;  // the previous5 reading5 from the input pin

int state35 = HIGH;    // the current state of the output pin
int reading35;         // the current reading6 from the input pin
int previous35 = LOW;  // the previous5 reading6 from the input pin

int state37 = HIGH;    // the current state of the output pin
int reading37;         // the current reading5 from the input pin
int previous37 = LOW;  // the previous5 reading5 from the input pin
```

```

int state39 = HIGH;    // the current state of the output pin
int reading39;         // the current reading6 from the input pin
int previous39 = LOW;  // the previous5 reading6 from the input pin

int state41 = HIGH;    // the current state of the output pin
int reading41;         // the current reading5 from the input pin
int previous41 = LOW;  // the previous5 reading5 from the input pin

int state43 = HIGH;    // the current state of the output pin
int reading43;         // the current reading6 from the input pin
int previous43 = LOW;  // the previous5 reading6 from the input pin

int state45 = HIGH;    // the current state of the output pin
int reading45;         // the current reading5 from the input pin
int previous45 = LOW;  // the previous5 reading5 from the input pin

int incomingByte;

// the follow variables are long's because the time, measured in miliseconds,
// will quickly become a bigger number than can be stored in an int.
long time = 0;        // the last time the output pin was toggled
long debounce = 200;  // the debounce time, increase if the output flickers

void setup()
{
  pinMode(inPin3, INPUT_PULLUP);
  pinMode(outPin4, OUTPUT);
  pinMode(inPin5, INPUT_PULLUP);
  pinMode(outPin6, OUTPUT);
  pinMode(inPin7, INPUT_PULLUP);
  pinMode(outPin8, OUTPUT);
  pinMode(inPin9, INPUT_PULLUP);
  pinMode(outPin10, OUTPUT);
  pinMode(inPin11, INPUT_PULLUP);
  pinMode(outPin12, OUTPUT);
  pinMode(inPin13, INPUT_PULLUP);
  pinMode(outPin14, OUTPUT);
  pinMode(inPin15, INPUT_PULLUP);
  pinMode(outPin16, OUTPUT);
  pinMode(inPin17, INPUT_PULLUP);
  pinMode(outPin18, OUTPUT);
  pinMode(inPin19, INPUT_PULLUP);
  pinMode(outPin20, OUTPUT);
  pinMode(inPin21, INPUT_PULLUP);
  pinMode(outPin22, OUTPUT);
  pinMode(inPin23, INPUT_PULLUP);
  pinMode(outPin24, OUTPUT);
}

```

```

pinMode(inPin25, INPUT_PULLUP);
pinMode(outPin26, OUTPUT);
pinMode(inPin27, INPUT_PULLUP);
pinMode(outPin28, OUTPUT);
pinMode(inPin29, INPUT_PULLUP);
pinMode(outPin30, OUTPUT);
pinMode(inPin31, INPUT_PULLUP);
pinMode(outPin32, OUTPUT);
pinMode(inPin33, INPUT_PULLUP);
pinMode(outPin34, OUTPUT);
pinMode(inPin35, INPUT_PULLUP);
pinMode(outPin36, OUTPUT);
pinMode(inPin37, INPUT_PULLUP);
pinMode(outPin38, OUTPUT);
pinMode(inPin39, INPUT_PULLUP);
pinMode(outPin40, OUTPUT);
pinMode(inPin41, INPUT_PULLUP);
pinMode(outPin42, OUTPUT);
pinMode(inPin43, INPUT_PULLUP);
pinMode(outPin44, OUTPUT);

Serial.begin(9600);    // opens serial port, sets data rate to 9600 bps

}

void loop()
{
  // relais 1 start
  reading3 = digitalRead(inPin3);

  // if the input just went from LOW and HIGH and we've waited long enough
  // to ignore any noise on the circuit, toggle the output pin and remember
  // the time
  if (reading3 == HIGH && previous3 == LOW && millis() - time > debounce) {
    if (state3 == HIGH)
      state3 = LOW;
    else
      state3 = HIGH;

    time = millis();

    if (state3 == LOW)
    {
      Serial.println("Relais1 aus");
      int buttonState = digitalRead(state3);
      // print out the state of the button:
      Serial.print("Relais1:");
      Serial.println(buttonState);
    }
  }
}

```

```

    }
    else
    {
        Serial.println("Relais1 ein");
        int buttonState = digitalRead(state3);
        // print out the state of the button:
        Serial.print("Relais1:");
        Serial.println(buttonState);
    }
}

```

```
digitalWrite(outPin4, state3);
```

```

previous3 = reading3;
// relais 1 ende

```

```

// relais 2 start
reading5 = digitalRead(inPin5);

```

```

// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time

```

```

if (reading5 == HIGH && previous5 == LOW && millis() - time > debounce) {
    if (state5 == HIGH)
        state5 = LOW;
    else
        state5 = HIGH;
}

```

```
time = millis();
```

```

        if (state5 == LOW)
        {
            Serial.println("Relais2 aus");
            int buttonState = digitalRead(state5);
            // print out the state of the button:
            Serial.print("Relais2:");
            Serial.println(buttonState);
        }
        else
        {
            Serial.println("Relais2 ein");
            int buttonState = digitalRead(state5);
            // print out the state of the button:
            Serial.print("Relais2:");
            Serial.println(buttonState);
        }
    }
}

```

```

    }
}

digitalWrite(outPin6, state5);

// relais 2 ende

previous5 = reading5;
// relais 2 ende

// relais 3 start
reading7 = digitalRead(inPin7);

// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading7 == HIGH && previous7 == LOW && millis() - time > debounce) {
    if (state7 == HIGH)
        state7 = LOW;
    else
        state7 = HIGH;

    time = millis();

    if (state7 == LOW)
    {
        Serial.println("Relais3 aus");
        int buttonState = digitalRead(state7);
        // print out the state of the button:
        Serial.print("Relais3:");
        Serial.println(buttonState);
    }
    else
    {
        Serial.println("Relais3 ein");
        int buttonState = digitalRead(state7);
        // print out the state of the button:
        Serial.print("Relais3:");
        Serial.println(buttonState);
    }
}

digitalWrite(outPin8, state7);

```

```
previous7 = reading7;  
// relais 3 ende
```

```
// relais 4 start  
reading9 = digitalRead(inPin9);
```

```
// if the input just went from LOW and HIGH and we've waited long enough  
// to ignore any noise on the circuit, toggle the output pin and remember  
// the time
```

```
if (reading9 == HIGH && previous9 == LOW && millis() - time > debounce) {  
  if (state9 == HIGH)  
    state9 = LOW;  
  else  
    state9 = HIGH;
```

```
  time = millis();
```

```
  if (state9 == LOW)
```

```
{  
  Serial.println("Relais4 aus");  
  int buttonState = digitalRead(state9);  
  // print out the state of the button:  
  Serial.print("Relais4:");  
  Serial.println(buttonState);  
}
```

```
else
```

```
{  
  Serial.println("Relais4 ein");  
  int buttonState = digitalRead(state9);  
  // print out the state of the button:  
  Serial.print("Relais4:");  
  Serial.println(buttonState);  
}
```

```
}
```

```
digitalWrite(outPin10, state9);
```

```
previous9 = reading9;  
// relais 4 ende
```

```
// relais 5 start  
reading11 = digitalRead(inPin11);
```

```
// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading11 == HIGH && previous11 == LOW && millis() - time > debounce) {
    if (state11 == HIGH)
        state11 = LOW;
    else
        state11 = HIGH;
```

```
    time = millis();
```

```
        if (state11 == LOW)
        {
            Serial.println("Relais5 aus");
            int buttonState = digitalRead(state11);
            // print out the state of the button:
            Serial.print("Relais5:");
            Serial.println(buttonState);
        }
        else
        {
            Serial.println("Relais5 ein");
            int buttonState = digitalRead(state11);
            // print out the state of the button:
            Serial.print("Relais5:");
            Serial.println(buttonState);
        }
    }
}
```

```
digitalWrite(outPin12, state11);
```

```
previous11 = reading11;
// relais 5 ende
```

```
// relais 6 start
reading13 = digitalRead(inPin13);
```

```
// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading13 == HIGH && previous13 == LOW && millis() - time > debounce) {
    if (state13 == HIGH)
        state13 = LOW;
```

```

    else
        state13 = HIGH;

    time = millis();

    if (state13 == LOW)
    {
        Serial.println("Relais6 aus");
        int buttonState = digitalRead(state13);
        // print out the state of the button:
        Serial.print("Relais6:");
        Serial.println(buttonState);
    }
    else
    {
        Serial.println("Relais6 ein");
        int buttonState = digitalRead(state13);
        // print out the state of the button:
        Serial.print("Relais6:");
        Serial.println(buttonState);
    }
}

digitalWrite(outPin14, state13);

previous13 = reading13;
// relais 6 ende

// relais 7 start
reading15 = digitalRead(inPin15);

// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading15 == HIGH && previous15 == LOW && millis() - time > debounce) {
    if (state15 == HIGH)
        state15 = LOW;
    else
        state15 = HIGH;

    time = millis();

    if (state15 == LOW)
    {

```

```

    Serial.println("Relais7 aus");
    int buttonState = digitalRead(state15);
    // print out the state of the button:
    Serial.print("Relais7:");
    Serial.println(buttonState);
  }
  else
  {
    Serial.println("Relais7 ein");
    int buttonState = digitalRead(state15);
    // print out the state of the button:
    Serial.print("Relais7:");
    Serial.println(buttonState);
  }
}

digitalWrite(outPin16, state15);

previous15 = reading15;
// relais 7 ende

// relais 8 start
reading17 = digitalRead(inPin17);

// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading17 == HIGH && previous17 == LOW && millis() - time > debounce) {
  if (state17 == HIGH)
    state17 = LOW;
  else
    state17 = HIGH;

  time = millis();

  if (state17 == LOW)
  {
    Serial.println("Relais8 aus");
    int buttonState = digitalRead(state17);
    // print out the state of the button:
    Serial.print("Relais8:");
    Serial.println(buttonState);
  }
  else

```

```

    {
        Serial.println("Relais8 ein");
        int buttonState = digitalRead(state17);
        // print out the state of the button:
        Serial.print("Relais8:");
        Serial.println(buttonState);
    }
}

digitalWrite(outPin18, state17);

previous17 = reading17;
// relais 8 ende

// relais 9 start
reading19 = digitalRead(inPin19);

// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading19 == HIGH && previous19 == LOW && millis() - time > debounce) {
    if (state19 == HIGH)
        state19 = LOW;
    else
        state19 = HIGH;

    time = millis();

    if (state19 == LOW)
    {
        Serial.println("Relais9 aus");
        int buttonState = digitalRead(state19);
        // print out the state of the button:
        Serial.print("Relais9:");
        Serial.println(buttonState);
    }
    else
    {
        Serial.println("Relais9 ein");
        int buttonState = digitalRead(state19);
        // print out the state of the button:
        Serial.print("Relais9:");
        Serial.println(buttonState);
    }
}

```

```

    }

    digitalWrite(outPin20, state19);

    // relais 9 ende

    // relais 10 start
    reading21 = digitalRead(inPin21);

    // if the input just went from LOW and HIGH and we've waited long enough
    // to ignore any noise on the circuit, toggle the output pin and remember
    // the time
    if (reading21 == HIGH && previous21 == LOW && millis() - time > debounce) {
        if (state21 == HIGH)
            state21 = LOW;
        else
            state21 = HIGH;

        time = millis();

        if (state21 == LOW)
        {
            Serial.println("Relais10 aus");
            int buttonState = digitalRead(state21);
            // print out the state of the button:
            Serial.print("Relais10:");
            Serial.println(buttonState);
        }
        else
        {
            Serial.println("Relais10 ein");
            int buttonState = digitalRead(state21);
            // print out the state of the button:
            Serial.print("Relais10:");
            Serial.println(buttonState);
        }
    }

    digitalWrite(outPin22, state21);

```

```
previous21 = reading21;  
// relais 10 ende
```

```
// relais 11 start  
reading23 = digitalRead(inPin23);
```

```
// if the input just went from LOW and HIGH and we've waited long enough  
// to ignore any noise on the circuit, toggle the output pin and remember  
// the time  
if (reading23 == HIGH && previous23 == LOW && millis() - time > debounce) {  
    if (state23 == HIGH)  
        state23 = LOW;  
    else  
        state23 = HIGH;
```

```
    time = millis();
```

```
        if (state23 == LOW)  
        {  
            Serial.println("Relais11 aus");  
            int buttonState = digitalRead(state23);  
            // print out the state of the button:  
            Serial.print("Relais11:");  
            Serial.println(buttonState);  
        }  
        else  
        {  
            Serial.println("Relais11 ein");  
            int buttonState = digitalRead(state23);  
            // print out the state of the button:  
            Serial.print("Relais11:");  
            Serial.println(buttonState);  
        }  
    }  
}
```

```
digitalWrite(outPin24, state23);
```

```
previous23 = reading23;  
// relais 11 ende
```

```
// relais 12 start  
reading25 = digitalRead(inPin25);
```

```
// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading25 == HIGH && previous25 == LOW && millis() - time > debounce) {
  if (state25 == HIGH)
    state25 = LOW;
  else
    state25 = HIGH;

  time = millis();
}
```

```
  if (state25 == LOW)
  {
    Serial.println("Relais12 aus");
    int buttonState = digitalRead(state25);
    // print out the state of the button:
    Serial.print("Relais12:");
    Serial.println(buttonState);
  }
  else
  {
    Serial.println("Relais12 ein");
    int buttonState = digitalRead(state25);
    // print out the state of the button:
    Serial.print("Relais12:");
    Serial.println(buttonState);
  }
}
```

```
digitalWrite(outPin26, state25);
```

```
previous25 = reading25;
// relais 12 ende
```

```
// relais 13 start
reading27 = digitalRead(inPin27);
```

```
// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading27 == HIGH && previous27 == LOW && millis() - time > debounce) {
  if (state27 == HIGH)
    state27 = LOW;
  else
```

```
state27 = HIGH;
```

```
time = millis();
```

```
if (state27 == LOW)
```

```
{
```

```
Serial.println("Relais13 aus");
```

```
int buttonState = digitalRead(state27);
```

```
// print out the state of the button:
```

```
Serial.print("Relais13:");
```

```
Serial.println(buttonState);
```

```
}
```

```
else
```

```
{
```

```
Serial.println("Relais13 ein");
```

```
int buttonState = digitalRead(state27);
```

```
// print out the state of the button:
```

```
Serial.print("Relais13:");
```

```
Serial.println(buttonState);
```

```
}
```

```
}
```

```
digitalWrite(outPin28, state27);
```

```
previous27 = reading27;
```

```
// relais 13 ende
```

```
// relais 14 start
```

```
reading29 = digitalRead(inPin29);
```

```
// if the input just went from LOW and HIGH and we've waited long enough
```

```
// to ignore any noise on the circuit, toggle the output pin and remember
```

```
// the time
```

```
if (reading29 == HIGH && previous29 == LOW && millis() - time > debounce) {
```

```
if (state29 == HIGH)
```

```
state29 = LOW;
```

```
else
```

```
state29 = HIGH;
```

```
time = millis();
```

```
if (state29 == LOW)
```

```
{
```

```
Serial.println("Relais14 aus");
```

```

    int buttonState = digitalRead(state29);
    // print out the state of the button:
    Serial.print("Relais14:");
    Serial.println(buttonState);
}
else
{
    Serial.println("Relais14 ein");
    int buttonState = digitalRead(state29);
    // print out the state of the button:
    Serial.print("Relais14:");
    Serial.println(buttonState);
}
}

```

```
digitalWrite(outPin30, state29);
```

```

previous29 = reading29;
// relais 14 ende

```

```

// relais 15 start
reading31 = digitalRead(inPin31);

```

```

// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading31 == HIGH && previous31 == LOW && millis() - time > debounce) {
    if (state31 == HIGH)
        state31 = LOW;
    else
        state31 = HIGH;
}

```

```
time = millis();
```

```

    if (state31 == LOW)
    {
        Serial.println("Relais15 aus");
        int buttonState = digitalRead(state31);
        // print out the state of the button:
        Serial.print("Relais15:");
        Serial.println(buttonState);
    }
    else
    {

```

```

        Serial.println("Relais15 ein");
        int buttonState = digitalRead(state31);
        // print out the state of the button:
        Serial.print("Relais15:");
        Serial.println(buttonState);
    }
}

digitalWrite(outPin32, state31);

// relais 15 ende

// relais 16 start
reading33 = digitalRead(inPin33);

// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading33 == HIGH && previous33 == LOW && millis() - time > debounce) {
    if (state33 == HIGH)
        state33 = LOW;
    else
        state33 = HIGH;

    time = millis();

    if (state33 == LOW)
    {
        Serial.println("Relais16 aus");
        int buttonState = digitalRead(state33);
        // print out the state of the button:
        Serial.print("Relais16:");
        Serial.println(buttonState);
    }
    else
    {
        Serial.println("Relais16 ein");
        int buttonState = digitalRead(state33);
        // print out the state of the button:
        Serial.print("Relais16:");
        Serial.println(buttonState);
    }
}
}

```

```
digitalWrite(outPin34, state33);
```

```
previous33 = reading33;  
// relais 16 ende
```

```
// relais 17 start  
reading35 = digitalRead(inPin35);
```

```
// if the input just went from LOW and HIGH and we've waited long enough  
// to ignore any noise on the circuit, toggle the output pin and remember  
// the time  
if (reading35 == HIGH && previous35 == LOW && millis() - time > debounce) {  
    if (state35 == HIGH)  
        state35 = LOW;  
    else  
        state35 = HIGH;
```

```
    time = millis();
```

```
        if (state35 == LOW)  
        {  
            Serial.println("Relais17 aus");  
            int buttonState = digitalRead(state35);  
            // print out the state of the button:  
            Serial.print("Relais17:");  
            Serial.println(buttonState);  
        }  
        else  
        {  
            Serial.println("Relais17 ein");  
            int buttonState = digitalRead(state35);  
            // print out the state of the button:  
            Serial.print("Relais17:");  
            Serial.println(buttonState);  
        }  
    }  
}
```

```
digitalWrite(outPin36, state35);
```

```
previous35 = reading35;
```

```
// relais 17 ende
```

```
// relais 18 start
```

```
reading37 = digitalRead(inPin37);
```

```
// if the input just went from LOW and HIGH and we've waited long enough  
// to ignore any noise on the circuit, toggle the output pin and remember  
// the time
```

```
if (reading37 == HIGH && previous37 == LOW && millis() - time > debounce) {  
  if (state37 == HIGH)  
    state37 = LOW;  
  else  
    state37 = HIGH;
```

```
  time = millis();
```

```
  if (state37 == LOW)
```

```
{  
  Serial.println("Relais18 aus");  
  int buttonState = digitalRead(state37);  
  // print out the state of the button:  
  Serial.print("Relais18:");  
  Serial.println(buttonState);  
}  
else  
{  
  Serial.println("Relais18 ein");  
  int buttonState = digitalRead(state37);  
  // print out the state of the button:  
  Serial.print("Relais18:");  
  Serial.println(buttonState);  
}  
}
```

```
digitalWrite(outPin38, state37);
```

```
previous37 = reading37;
```

```
// relais 18 ende
```

```
// relais 19 start
```

```
reading39 = digitalRead(inPin39);
```

```
// if the input just went from LOW and HIGH and we've waited long enough
```

```
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading39 == HIGH && previous39 == LOW && millis() - time > debounce) {
    if (state39 == HIGH)
        state39 = LOW;
    else
        state39 = HIGH;

    time = millis();
```

```
    if (state39 == LOW)
    {
        Serial.println("Relais19 aus");
        int buttonState = digitalRead(state39);
        // print out the state of the button:
        Serial.print("Relais19:");
        Serial.println(buttonState);
    }
    else
    {
        Serial.println("Relais19 ein");
        int buttonState = digitalRead(state39);
        // print out the state of the button:
        Serial.print("Relais19:");
        Serial.println(buttonState);
    }
}
```

```
digitalWrite(outPin40, state39);
```

```
previous39 = reading39;
// relais 19 ende
```

```
// relais 20 start
reading41 = digitalRead(inPin41);
```

```
// if the input just went from LOW and HIGH and we've waited long enough
// to ignore any noise on the circuit, toggle the output pin and remember
// the time
if (reading41 == HIGH && previous41 == LOW && millis() - time > debounce) {
    if (state41 == HIGH)
        state41 = LOW;
    else
        state41 = HIGH;
```

```
time = millis();
```

```
    if (state41 == LOW)
```

```
    {
```

```
        Serial.println("Relais20 aus");
```

```
        int buttonState = digitalRead(state41);
```

```
        // print out the state of the button:
```

```
        Serial.print("Relais20:");
```

```
        Serial.println(buttonState);
```

```
    }
```

```
    else
```

```
    {
```

```
        Serial.println("Relais20 ein");
```

```
        int buttonState = digitalRead(state41);
```

```
        // print out the state of the button:
```

```
        Serial.print("Relais20:");
```

```
        Serial.println(buttonState);
```

```
    }
```

```
}
```

```
digitalWrite(outPin42, state41);
```

```
previous41 = reading41;
```

```
// relais 20 ende
```

```
// relais 21 start
```

```
reading43 = digitalRead(inPin43);
```

```
// if the input just went from LOW and HIGH and we've waited long enough
```

```
// to ignore any noise on the circuit, toggle the output pin and remember
```

```
// the time
```

```
if (reading43 == HIGH && previous43 == LOW && millis() - time > debounce) {
```

```
    if (state43 == HIGH)
```

```
        state43 = LOW;
```

```
    else
```

```
        state43 = HIGH;
```

```
time = millis();
```

```
    if (state43 == LOW)
```

```
    {
```

```
        Serial.println("Relais21 aus");
```

```
        int buttonState = digitalRead(state43);
```

```

    // print out the state of the button:
    Serial.print("Relais21:");
    Serial.println(buttonState);
}
else
{
    Serial.println("Relais21 ein");
    int buttonState = digitalRead(state43);
    // print out the state of the button:
    Serial.print("Relais21:");
    Serial.println(buttonState);
}
}

```

```
digitalWrite(outPin44, state43);
```

```

previous43 = reading43;
// relais 21 ende

```

```

//Serial Read
if (Serial.available() > 0) {
    // read the incoming byte:
    incomingByte = Serial.read();

```

```

        if (incomingByte == 'A')
        {
            state3 = LOW;
            Serial.println("Relais1 ein Konsole");
            int buttonState3 = digitalRead(state3);
            // print out the state of the button:
            Serial.print("Relais1:");
            Serial.println(buttonState3);
        }

```

```

        if (incomingByte == 'B')
        {
            state3 = HIGH;
            Serial.println("Relais1 aus Konsole");
            int buttonState3 = digitalRead(state3);
            // print out the state of the button:
            Serial.print("Relais1:");
            Serial.println(buttonState3);
        }

```

```
//////////////////////////////////  
if (incomingByte == 'C')  
{  
    state5 = LOW;  
    Serial.println("Relais2 ein Konsole");  
    int buttonState5 = digitalRead(state5);  
    // print out the state of the button:  
    Serial.print("Relais2:");  
    Serial.println(buttonState5);  
}
```

```
if (incomingByte == 'D')  
{  
    state5 = HIGH;  
    Serial.println("Relais2 aus Konsole");  
    int buttonState5 = digitalRead(state5);  
    // print out the state of the button:  
    Serial.print("Relais2:");  
    Serial.println(buttonState5);  
}
```

```
//////////////////////////////////
```

```
if (incomingByte == 'E')  
{  
    state7 = LOW;  
    Serial.println("Relais3 ein Konsole");  
    int buttonState7 = digitalRead(state7);  
    // print out the state of the button:  
    Serial.print("Relais3:");  
    Serial.println(buttonState7);  
}
```

```
if (incomingByte == 'F')  
{  
    state7 = HIGH;  
    Serial.println("Relais3 aus Konsole");  
    int buttonState7 = digitalRead(state7);  
    // print out the state of the button:  
    Serial.print("Relais3:");  
    Serial.println(buttonState7);  
}
```

```
//////////////////////////////////  
if (incomingByte == 'G')  
{  
    state9 = LOW;  
    Serial.println("Relais4 ein Konsole");  
    int buttonState9 = digitalRead(state9);  
    // print out the state of the button:  
    Serial.print("Relais4:");  
    Serial.println(buttonState9);  
}
```

```
if (incomingByte == 'H')  
{  
    state9 = HIGH;  
    Serial.println("Relais4 aus Konsole");  
    int buttonState9 = digitalRead(state9);  
    // print out the state of the button:  
    Serial.print("Relais4:");  
    Serial.println(buttonState9);  
}
```

```
//////////////////////////////////
```

```
if (incomingByte == 'I')  
{  
    state11 = LOW;  
    Serial.println("Relais5 ein Konsole");  
    int buttonState11 = digitalRead(state11);  
    // print out the state of the button:  
    Serial.print("Relais5:");  
    Serial.println(buttonState11);  
}
```

```
if (incomingByte == 'J')  
{  
    state11 = HIGH;  
    Serial.println("Relais5 aus Konsole");  
    int buttonState11 = digitalRead(state11);  
    // print out the state of the button:  
    Serial.print("Relais5:");  
    Serial.println(buttonState11);  
}
```

```
//////////////////////////////////
```

```
        if (incomingByte == 'K')
        {
            state13 = LOW;
            Serial.println("Relais6 ein Konsole");
            int buttonState13 = digitalRead(state13);
            // print out the state of the button:
            Serial.print("Relais6:");
            Serial.println(buttonState13);
        }
```

```
        if (incomingByte == 'L')
        {
            state13 = HIGH;
            Serial.println("Relais6 aus Konsole");
            int buttonState13 = digitalRead(state13);
            // print out the state of the button:
            Serial.print("Relais6:");
            Serial.println(buttonState13);
        }
```

```
////////////////////////////////////
```

```
        if (incomingByte == 'M')
        {
            state15 = LOW;
            Serial.println("Relais7 ein Konsole");
            int buttonState15 = digitalRead(state15);
            // print out the state of the button:
            Serial.print("Relais7:");
            Serial.println(buttonState15);
        }
```

```
        if (incomingByte == 'N')
        {
            state15 = HIGH;
            Serial.println("Relais7 aus Konsole");
            int buttonState15 = digitalRead(state15);
            // print out the state of the button:
            Serial.print("Relais7:");
            Serial.println(buttonState15);
        }
```

```
////////////////////////////////////
```

```
        if (incomingByte == 'O')
        {
```

```
        state17 = LOW;
        Serial.println("Relais8 ein Konsole");
        int buttonState17 = digitalRead(state17);
        // print out the state of the button:
        Serial.print("Relais8:");
        Serial.println(buttonState17);
    }
```

```
    if (incomingByte == 'P')
    {
        state17 = HIGH;
        Serial.println("Relais8 aus Konsole");
        int buttonState17 = digitalRead(state17);
        // print out the state of the button:
        Serial.print("Relais8:");
        Serial.println(buttonState17);
    }
```

```
////////////////////////////////////
```

```
    if (incomingByte == 'Q')
    {
        state19 = LOW;
        Serial.println("Relais9 ein Konsole");
        int buttonState19 = digitalRead(state19);
        // print out the state of the button:
        Serial.print("Relais9:");
        Serial.println(buttonState19);
    }
```

```
    if (incomingByte == 'R')
    {
        state19 = HIGH;
        Serial.println("Relais9 aus Konsole");
        int buttonState19 = digitalRead(state19);
        // print out the state of the button:
        Serial.print("Relais9:");
        Serial.println(buttonState19);
    }
```

```
////////////////////////////////////
```

```
    if (incomingByte == 'S')
    {
        state21 = LOW;
        Serial.println("Relais10 ein Konsole");
    }
```

```
int buttonState21 = digitalRead(state21);  
// print out the state of the button:  
Serial.print("Relais10:");  
Serial.println(buttonState21);  
}
```

```
if (incomingByte == 'T')  
{  
    state21 = HIGH;  
    Serial.println("Relais10 aus Konsole");  
    int buttonState21 = digitalRead(state21);  
    // print out the state of the button:  
    Serial.print("Relais10:");  
    Serial.println(buttonState21);  
}
```

```
////////////////////////////////////
```

```
if (incomingByte == 'U')  
{  
    state23 = LOW;  
    Serial.println("Relais11 ein Konsole");  
    int buttonState23 = digitalRead(state23);  
    // print out the state of the button:  
    Serial.print("Relais11:");  
    Serial.println(buttonState23);  
}
```

```
if (incomingByte == 'V')  
{  
    state23 = HIGH;  
    Serial.println("Relais11 aus Konsole");  
    int buttonState23 = digitalRead(state23);  
    // print out the state of the button:  
    Serial.print("Relais11:");  
    Serial.println(buttonState23);  
}
```

```
////////////////////////////////////  
if (incomingByte == 'W')  
{  
    state25 = LOW;  
    Serial.println("Relais12 ein Konsole");  
    int buttonState25 = digitalRead(state25);  
    // print out the state of the button:
```

```
Serial.print("Relais12:");  
Serial.println(buttonState25);  
}
```

```
if (incomingByte == 'Y')  
{  
    state25 = HIGH;  
    Serial.println("Relais12 aus Konsole");  
    int buttonState25 = digitalRead(state25);  
    // print out the state of the button:  
    Serial.print("Relais12:");  
    Serial.println(buttonState25);  
}
```

```
////////////////////////////////////
```

```
if (incomingByte == 'y')  
{  
    state27 = LOW;  
    Serial.println("Relais13 ein Konsole");  
    int buttonState27 = digitalRead(state27);  
    // print out the state of the button:  
    Serial.print("Relais13:");  
    Serial.println(buttonState27);  
}
```

```
if (incomingByte == 'Z')  
{  
    state27 = HIGH;  
    Serial.println("Relais13 aus Konsole");  
    int buttonState27 = digitalRead(state27);  
    // print out the state of the button:  
    Serial.print("Relais13:");  
    Serial.println(buttonState27);  
}
```

```
////////////////////////////////////
```

```
if (incomingByte == 'A1')  
{  
    state29 = LOW;  
    Serial.println("Relais14 ein Konsole");  
    int buttonState29 = digitalRead(state29);  
    // print out the state of the button:  
    Serial.print("Relais4:");  
    Serial.println(buttonState29);  
}
```

```
}
```

```
if (incomingByte == 'B1')
```

```
{
```

```
    state29 = HIGH;
```

```
    Serial.println("Relais14 aus Konsole");
```

```
    int buttonState29 = digitalRead(state29);
```

```
    // print out the state of the button:
```

```
    Serial.print("Relais4:");
```

```
    Serial.println(buttonState29);
```

```
}
```

```
////////////////////////////////////
```

```
if (incomingByte == 'C1')
```

```
{
```

```
    state31 = LOW;
```

```
    Serial.println("Relais15 ein Konsole");
```

```
    int buttonState31 = digitalRead(state31);
```

```
    // print out the state of the button:
```

```
    Serial.print("Relais15:");
```

```
    Serial.println(buttonState31);
```

```
}
```

```
if (incomingByte == 'D1')
```

```
{
```

```
    state31 = HIGH;
```

```
    Serial.println("Relais15 aus Konsole");
```

```
    int buttonState31 = digitalRead(state31);
```

```
    // print out the state of the button:
```

```
    Serial.print("Relais15:");
```

```
    Serial.println(buttonState31);
```

```
}
```

```
////////////////////////////////////
```

```
if (incomingByte == 'E1')
```

```
{
```

```
    state33 = LOW;
```

```
    Serial.println("Relais16 ein Konsole");
```

```
    int buttonState33 = digitalRead(state33);
```

```
    // print out the state of the button:
```

```
    Serial.print("Relais16:");
```

```
    Serial.println(buttonState33);
```

```
}
```

```
        if (incomingByte == 'F1')
        {
            state33 = HIGH;
            Serial.println("Relais16 aus Konsole");
            int buttonState33 = digitalRead(state33);
            // print out the state of the button:
            Serial.print("Relais16:");
            Serial.println(buttonState33);
        }
```

```
////////////////////////////////////
```

```
        if (incomingByte == 'G1')
        {
            state35 = LOW;
            Serial.println("Relais17 ein Konsole");
            int buttonState35 = digitalRead(state35);
            // print out the state of the button:
            Serial.print("Relais17:");
            Serial.println(buttonState35);
        }
```

```
        if (incomingByte == 'H1')
        {
            state35 = HIGH;
            Serial.println("Relais17 aus Konsole");
            int buttonState35 = digitalRead(state35);
            // print out the state of the button:
            Serial.print("Relais17:");
            Serial.println(buttonState35);
        }
```

```
////////////////////////////////////
        if (incomingByte == 'I1')
        {
            state37 = LOW;
            Serial.println("Relais18 ein Konsole");
            int buttonState37 = digitalRead(state37);
            // print out the state of the button:
            Serial.print("Relais18:");
            Serial.println(buttonState37);
        }
```

```
        if (incomingByte == 'J1')
        {
```

```
        state37 = HIGH;
        Serial.println("Relais18 aus Konsole");
        int buttonState37 = digitalRead(state37);
        // print out the state of the button:
        Serial.print("Relais18:");
        Serial.println(buttonState37);
    }
```

```
////////////////////////////////////
```

```
        if (incomingByte == 'K1')
        {
            state39 = LOW;
            Serial.println("Relais19 ein Konsole");
            int buttonState39 = digitalRead(state39);
            // print out the state of the button:
            Serial.print("Relais19:");
            Serial.println(buttonState39);
        }
```

```
        if (incomingByte == 'L1')
        {
            state39 = HIGH;
            Serial.println("Relais19 aus Konsole");
            int buttonState39 = digitalRead(state39);
            // print out the state of the button:
            Serial.print("Relais19:");
            Serial.println(buttonState39);
        }
```

```
////////////////////////////////////
        if (incomingByte == 'M1')
        {
            state41 = LOW;
            Serial.println("Relais20 ein Konsole");
            int buttonState41 = digitalRead(state41);
            // print out the state of the button:
            Serial.print("Relais20:");
            Serial.println(buttonState41);
        }
```

```
        if (incomingByte == 'N1')
        {
            state41 = HIGH;
            Serial.println("Relais20 aus Konsole");
        }
```

```
        int buttonState41 = digitalRead(state41);  
        // print out the state of the button:  
        Serial.print("Relais20:");  
        Serial.println(buttonState41);  
    }
```

```
////////////////////////////////////
```

```
////////////////////////////////////  
    if (incomingByte == 'O1')  
    {  
        state43 = LOW;  
        Serial.println("Relais21 ein Konsole");  
        int buttonState43 = digitalRead(state43);  
        // print out the state of the button:  
        Serial.print("Relais21:");  
        Serial.println(buttonState43);  
    }
```

```
    if (incomingByte == 'P1')  
    {  
        state43 = HIGH;  
        Serial.println("Relais21 aus Konsole");  
        int buttonState43 = digitalRead(state43);  
        // print out the state of the button:  
        Serial.print("Relais21:");  
        Serial.println(buttonState43);  
    }
```

```
////////////////////////////////////
```

```
    }
```

```
}
```