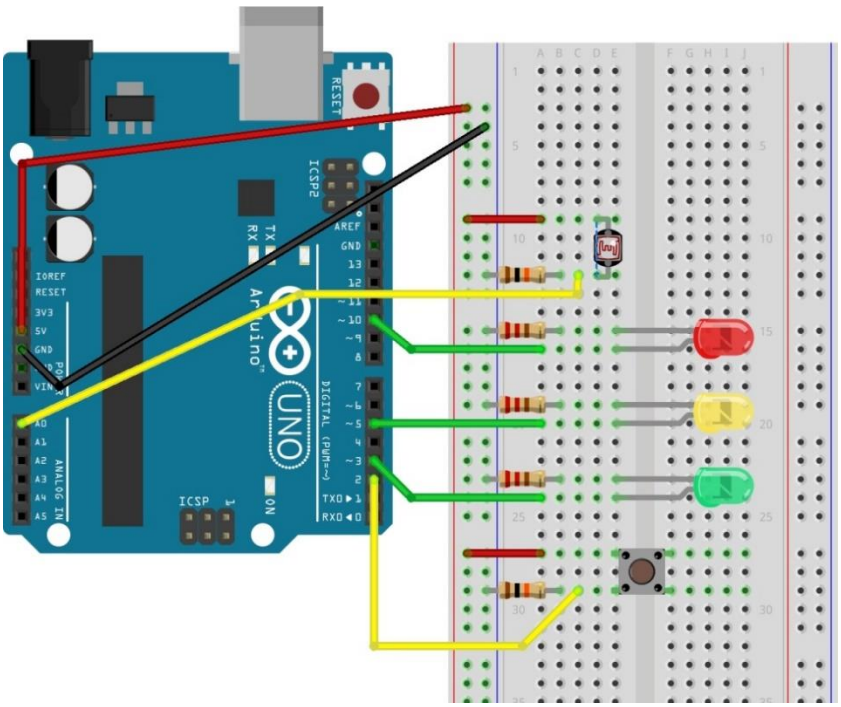
Arduino – Wiederholungen effizient programmieren

Abbildung der verwendeten Schaltung:



Aufgabe 1)

```
void greenLed3Blink(){
  int counter = 1;

  while(counter <= 3){
    digitalWrite(greenLedPin,LOW);
    delay(1000);
    digitalWrite(greenLedPin,HIGH);
    delay(1000);
    counter = counter + 1;
  }
}
```

```
void yellowLed3Blink(){
  int counter = 1;

  while(counter <= 3){
     digitalWrite(yellowLedPin,LOW);
     delay(1000);
     digitalWrite(yellowLedPin,HIGH);
     delay(1000);
     counter = counter + 1;
  }
}
```

```
void redLed3Blink(){
  int counter = 1;

  while(counter <= 3){
     digitalWrite(redLedPin,LOW);
     delay(1000);
     digitalWrite(redLedPin,HIGH);
     delay(1000);
     counter = counter + 1;
  }
}
```

```
void led3Blink(int pin){
  int counter = 1;

  while(counter <= 3){
     digitalWrite(pin,LOW);
     delay(1000);
     digitalWrite(pin,HIGH);
     delay(1000);
     counter = counter + 1;
  }
}
```

Aufgabe 2)

Beim mittleren und beim unteren Codefragment in der zweiten Spalte wird die Programmschleife NICHT fünfmal durchlaufen, bei den anderen vier Codefragmenten schon.

Aufgabe 3)

```
void ledBlink(int pin, int times){
  int counter = 1;

  while(counter <= times){
     digitalWrite(pin,LOW);
     delay(1000);
     digitalWrite(pin,HIGH);
     delay(1000);
     counter = counter + 1;
  }
}
```

oder

```
void ledBlink(int pin, int times){
  int counter = times;

  while(counter > 0){
     digitalWrite(pin,LOW);
     delay(1000);
     digitalWrite(pin,HIGH);
     delay(1000);
     counter = counter - 1;
  }
}
```

oder…

```
int redLedPin = 10;
int yellowLedPin = 5;
int greenLedPin = 3;

void ledBlink(int pin, int times){
  int counter = 1;

  while(counter <= times){
     digitalWrite(pin,LOW);
     delay(1000);
     digitalWrite(pin,HIGH);
     delay(1000);
  }
}
```

```
void setup() {
  pinMode(redLedPin,OUTPUT);
  pinMode(yellowLedPin,OUTPUT);
  pinMode(greenLedPin,OUTPUT);
  //set initial LED-state
  digitalWrite(redLedPin,HIGH);
  digitalWrite(yellowLedPin,LOW);
  digitalWrite(greenLedPin,LOW);
}

void loop() {
  delay(5000);
  digitalWrite(yellowLedPin,HIGH);
  digitalWrite(redLedPin,LOW);
  delay(2000);
  digitalWrite(greenLedPin,HIGH);
  digitalWrite(yellowLedPin,LOW);
  delay(5000);
  ledBlink(greenLedPin,3);
  digitalWrite(greenLedPin,LOW);
  digitalWrite(yellowLedPin,HIGH);
  delay(2000);
  digitalWrite(yellowLedPin,LOW);
  digitalWrite(redLedPin,HIGH);
}
```

Aufgabe 4)

```
void letterD(int pin){
  int counter = 1;

  longSignal(pin);
  while(counter <= 2){
    shortSignal(pin);
    counter = counter + 1;
  }
}
```

```
void letterS(int pin){
  int counter = 1;

  while(counter <= 3){
    shortSignal(pin);
    counter = counter + 1;
  }
}
```

```
void letterP(int pin){
  int counter = 1;

  shortSignal(pin);
  while(counter <= 2){
    longSignal(pin);
    counter = counter + 1;
  }
  shortSignal(pin);
}
```