```
/*
 +----------------------------------------------------+
 +         Countdown Timer Version                    |
 +----------------------------------------------------+
 | Date Made : 11-10-2012                             |
 | Date Last Modification : 12-10-2012                |
 | Version Number : 1.5                               |
 | Engineered By : Xtremer.nl                         |
 +----------------------------------------------------+
 | Arduino Pins :                                     |
 +----------------------------------------------------+
 |Pin | Connected To                                  |
 | 0  | N/C                                           |
 | 1  | N/C                                           |
 | 2  | LCD 14                                        |
 | 3  | LCD 13                                        |
 | 4  | LCD 12                                        |
 | 5  | LCD 11                                        |
 | 6  | Status led                                    |
 | 7  | Beeper                                        |
 | 8  | Output                                        |
 | 9  | N/C                                           |
 | 10 | N/C                                           |
 | 11 | LCD 6                                         |
 | 12 | LCD 4                                         |
 | 13 | N/C                                           |
 | A0 | Button minutes                                |
 | A1 | Button seconds                                |
 | A2 | Button start                                  |
 | A3 | Button Reset                                  |
 | A4 | N/C                                           |
 | A5 | N/C                                           |
 +----+-----------------------------------------------+
 */


#include <LiquidCrystal.h>


LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

// Uitgangen
const int infoled =  6;                                 // Led aansluiting, Algemene informatie, Deze ↵
knipperd op de seconde's.
const int output =  8;                                  // Aansluiting voor uitgang

// Instellingen
int buzzer = 5;                                         // Aantal maal dat de zuzzer afgaat na timer ↵
zonder loop
int buzzerar = 5;                                       // Aantal maal dat de buzzer afgaat na timer ↵
zonder loop (Na reset)

// Vaste Waardes
int seconds = 0;
int minutes = 0;
int memseconds = 0;
int memminutes = 0;
int endless = 0;
int buzzeraanuit = 0;
long previousMillis = 0;
long interval = 1000;

//                                                      Start Setup
void setup () {

  pinMode(A0, INPUT);                                   // Minuten knop
```

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  digitalWrite(A0, HIGH);                              // Pullup aan

  pinMode(A1, INPUT);                                  // Seconde knop
  digitalWrite(A1, HIGH);                              // Pullup aan

  pinMode(A2, INPUT);                                  // Start / Ja knop
  digitalWrite(A2, HIGH);                              // Pullup aan

  pinMode(A3, INPUT);                                  // Reset / Nee knop
  digitalWrite(A3, HIGH);                              // Pullup aan

  pinMode(infoled, OUTPUT);                            // Led aansluiting, Algemene informatie, Deze   ⏎
knipperd op de seconde's.
  pinMode(output, OUTPUT);                             // Aansluiting voor uitgang

  lcd.begin(16, 2);                                    // LCD Type 16 / 2

  lcd.setCursor(0, 0);
  lcd.print("Countdown.   V1.5");
  lcd.setCursor(0, 1);
  lcd.print("By Xtremer.nl");
  delay (2000);
  lcd.clear();
}
//                                                     Einde Setup

//                                                     Start Vraag Buzzer
void Buzzer() {
    lcd.clear();
    delay (500);
    while(1) {
      lcd.setCursor(0, 0);
      lcd.print("Geluid Aan?");
      if(digitalRead(A2) == LOW) {
        digitalWrite(infoled, HIGH);
        tone(7, 2800, 10);
        digitalWrite(infoled, LOW);
        buzzeraanuit = 1;
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Geluid Aan.");
        delay (1000);
        delaySet ();
      }

      if(digitalRead(A3) == LOW) {
        digitalWrite(infoled, HIGH);
        digitalWrite(infoled, LOW);
        buzzeraanuit = 0;
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Geluid Uit.");
        delay (1000);
        delaySet ();
      }
    }
}
//                                                     Einde vraag Buzzer

//                                                     Start Tijd Instellen
void delaySet () {
  while(1) {
    lcd.setCursor(0, 0);
    lcd.print("Stel Tijd In:");
    lcd.setCursor(0, 1);
    if(minutes < 10) {
```

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      lcd.print("0");
      lcd.print(minutes);
    }
    else {
      lcd.print(minutes);
    }
    lcd.print(":");
    if(seconds < 10) {
      lcd.print("0");
      lcd.print(seconds);
    }
    else {
      lcd.print(seconds);
    }

    if(digitalRead(A0) == LOW) {
      minutes++;
      if(buzzeraanuit == 1) {tone(7, 1400, 10);}
      digitalWrite(infoled, HIGH);
      delay(100);
      digitalWrite(infoled, LOW);
    }

    if(digitalRead(A1) == LOW) {
      seconds++;
      if(buzzeraanuit == 1) {tone(7, 1400, 10);}
      digitalWrite(infoled, HIGH);
      delay(100);
      digitalWrite(infoled, LOW);
    }

    if(digitalRead(A2) == LOW) {
      lcd.clear();
      lcd.setCursor(0, 0);
      lcd.print("Tijd Ingesteld.");
      delay (1000);
      loopMode();
    }

    if(digitalRead(A3) == LOW) {
      seconds = 0;
      minutes = 0;
      digitalWrite(infoled, HIGH);
      if(buzzeraanuit == 1) {tone(7, 2800, 10);}
      digitalWrite(infoled, LOW);
      delay(100);
      digitalWrite(infoled, HIGH);
      if(buzzeraanuit == 1) {tone(7, 2800, 10);}
      digitalWrite(infoled, LOW);
    }



    if(seconds > 59) {
      seconds = 0;
      minutes++;
    }

    if(minutes > 59) {
      minutes = 0;
    }

  }
}
//                                          Einde Tijd Instellen
```

```
//                                                       Start vraag Loop Mode
void loopMode() {
  if (endless < 1) {
    lcd.clear();
    delay (500);
    while(1) {
      lcd.setCursor(0, 0);
      lcd.print("Loop Mode?");
      if(digitalRead(A2) == LOW) {
        digitalWrite(infoled, HIGH);
        if(buzzeraanuit == 1) {tone(7, 2800, 10);}
        digitalWrite(infoled, LOW);
        memseconds = seconds - 0;
        memminutes = minutes - 0;
        endless++;
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Loop Mode aan.");
        delay (1000);
        startcountDown ();
      }

      if(digitalRead(A3) == LOW) {
        digitalWrite(infoled, HIGH);
        if(buzzeraanuit == 1) {tone(7, 2800, 10);}
        digitalWrite(infoled, LOW);
        endless = 0;
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Loop Mode uit.");
        delay (1000);
        startcountDown ();
      }
    }
  }
  else {
    startcountDown ();
  }
}
//                                                       Einde vraag Loop mode

//                                                       Vragen om Starten
void startcountDown() {
  lcd.clear();
  delay (500);

  while(1) {
    lcd.setCursor(0, 0);
    lcd.print("Start Klok?");

    lcd.setCursor(6, 1);
    if(minutes < 10) {
      lcd.print("0");
      lcd.print(minutes);
    }
    else {
      lcd.print(minutes);
    }
    lcd.print(":");
    if(seconds < 10) {
      lcd.print("0");
      lcd.print(seconds);
    }
    else {
      lcd.print(seconds);
    }
```

```
      if(digitalRead(A2) == LOW) {
        digitalWrite(infoled, HIGH);
        if(buzzeraanuit == 1) {tone(7, 2800, 10);}
        digitalWrite(infoled, LOW);
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Klok gestart!");
        delay (1000);
        countDown ();
      }

      if(digitalRead(A3) == LOW) {
        digitalWrite(infoled, HIGH);
        if(buzzeraanuit == 1) {tone(7, 1400, 10);}
        digitalWrite(infoled, LOW);
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Geanuleerd!");
        delay (1000);
        delaySet ();

      }

    }
  }
}
//                                              Einde Vragen om straten
//                                              Start Countdown
void countDown () {

  lcd.clear();

  while(1) {

    lcd.setCursor(0, 0);
    lcd.print("Tijd Resterend:");

    lcd.setCursor(0, 1);
    if(minutes < 10) {
      lcd.print("0");
      lcd.print(minutes);
    }
    else {
      lcd.print(minutes);
    }
    lcd.print(":");
    if(seconds < 10) {
      lcd.print("0");
      lcd.print(seconds);
    }
    else {
      lcd.print(seconds);
    }

    static unsigned long lastTick = 0;

    if (millis() - lastTick >= 1000) {
      lastTick = millis();
      seconds--;
      if(minutes == 0 && seconds < 4) {
        digitalWrite(infoled, HIGH);
        if(buzzeraanuit == 1) {tone(7, 2800, 10);}
        digitalWrite(infoled, LOW);
      }
      else if(minutes == 0 && seconds < 11) {
        digitalWrite(infoled, HIGH);
        if(buzzeraanuit == 1) {tone(7, 1800, 3);}
```

```
        digitalWrite(infoled, LOW);
      }
      else {
        digitalWrite(infoled, HIGH);
        delay (3);
        digitalWrite(infoled, LOW);

      }
    }

    if(seconds < 0) {
      minutes--;
      seconds = 59;
    }
    if(minutes + seconds == 0) {

      digitalWrite(output, HIGH);
      digitalWrite(infoled, HIGH);
      lcd.clear();
      lcd.setCursor(0, 0);
      lcd.print("Tijd voorbij.");
      lcd.setCursor(0, 1);
      lcd.print("00:00");
      delay (500);
      digitalWrite(output, LOW);
      digitalWrite(infoled, LOW);
      if (endless == 1) {
        seconds = memseconds - 0;
        minutes = memminutes - 0;
        countDown ();
      }
      if (endless == 0){
        while ( buzzer > 0)
        {
          if(buzzeraanuit == 1) {tone(7, 2800, 10);}
          delay (100);
          if(buzzeraanuit == 1) {tone(7, 2800, 10);}
          delay (100);
          if(buzzeraanuit == 1) {tone(7, 2800, 10);}
          delay (100);
          if(buzzeraanuit == 1) {tone(7, 2800, 10);}
          delay (100);
          buzzer--;
          delay(1000);
        }
        buzzer = buzzerar - 0;
        delaySet ();
      }
    }
    if(digitalRead(A3) == LOW) {
      digitalWrite(infoled, HIGH);
      if(buzzeraanuit == 1) {tone(7, 1400, 10);}
      digitalWrite(infoled, LOW);
      lcd.clear();
      lcd.setCursor(0, 0);
      lcd.print("Klok Gereset!");
      seconds = 0;
      minutes = 0;
      endless = 0;
      delay (1000);
      delaySet ();
    }
  }
}
//                                                  Einde Countdown.
```

```
//                                                De Start loop.
void loop () {

  Buzzer ();

}

//                                                Einde Startloop.
```