Bahan Ajar

Modul
PEMROGRAMAN

Kode Matakuliah: SKO21411

C For Arduino

Penyusun:
Bayu Nugroho. S.Kom., M.Eng

PROGRAM STUDI SISTEM KOMPUTER

FAKULTAS ILMU KOMPUTER

INSTITUT INFORMATIKA DAN BISNIS DARMAJAYA

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DAFTAR ISI

JOBSHEET 6
Precedence of Operator C for Arduino (Buzzer)

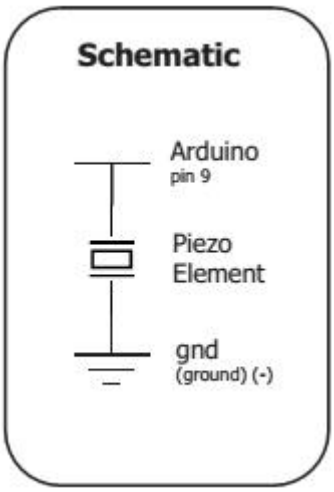
KOMPONEN

Breadboar

Buzzer

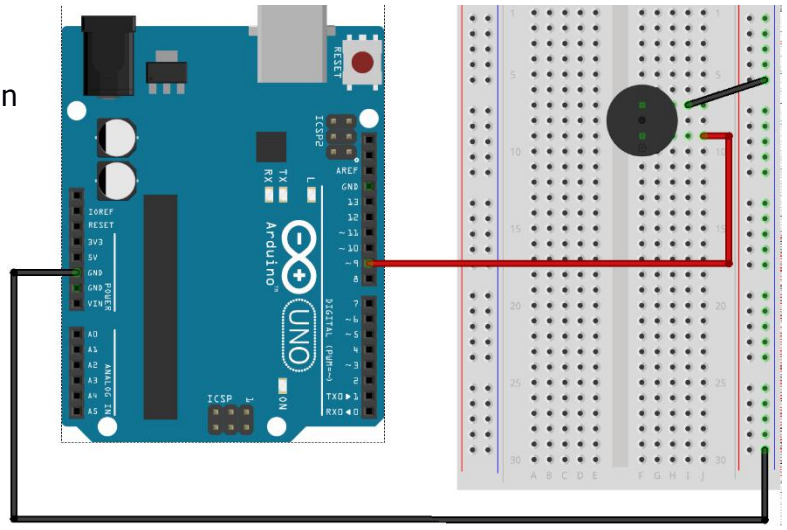
Kabel Jumper

SKEMA



PERAKITAN

Hubungkan Pin 9 Arduino ke kaki buzzer pada papan breadboard dan pin ground seperti pada gambar



KODE PROGRAM

```
/* Melody
*
* This example uses a piezo speaker to play melodies. It sends
* a square wave of the appropriate frequency to the piezo,
* generating the corresponding tone.
*
* The calculation of the tones is made following the
* mathematical operation:
*
* timeHigh = period / 2 = 1 / (2 * toneFrequency)
*
* where the different tones are described as in the table:
*
* note frequency period timeHigh
* c 261 Hz 3830 1915
* d 294 Hz 3400 1700
* e 329 Hz 3038 1519
* f 349 Hz 2864 1432
* g 392 Hz 2550 1275
* a 440 Hz 2272 1136
* b 493 Hz 2028 1014
* C 523 Hz 1912 956
*
*/

int speakerPin = 9;
int length = 15; // the number of notes
char notes[] = "ccggaagffeeddc "; // a space represents a rest
int beats[] = { 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 2, 4 };
int tempo = 300;
void playTone(int tone, int duration) {
for (long i = 0; i < duration * 1000L; i += tone * 2) {
digitalWrite(speakerPin, HIGH);
delayMicroseconds(tone);

digitalWrite(speakerPin, LOW);
delayMicroseconds(tone);
}
}
void playNote(char note, int duration) {
char names[] = { 'c', 'd', 'e', 'f', 'g', 'a', 'b', 'C' };
int tones[] = { 1915, 1700, 1519, 1432, 1275, 1136, 1014, 956
};
// play the tone corresponding to the note name
for (int i = 0; i < 8; i++) {
if (names[i] == note) {
playTone(tones[i], duration);
}
}
}
void setup() {
pinMode(speakerPin, OUTPUT);
}
```

```
void loop() {
for (int i = 0; i < length; i++) {
if (notes[i] == ' ') {
delay(beats[i] * tempo); // rest
} else {
playNote(notes[i], beats[i] * tempo);
}
// pause between notes
delay(tempo / 2); }
}
```

LATIHAN

Lakukan memprogram Buzer dengan menggunakan beberapa fitur Precedence Operator bahasa C for Arduino.

LAPORAN HASIL PERCOBAAN: