LAPORAN PRAKTIKUM 8

BUZZER

Dosen Pengampu:

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FAKULTAS PENDIDIKAN TEKNIK DAN KEJURUAN

UNIVERSITAS PENDIDIKAN INDONESIA

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DAFTAR ISI

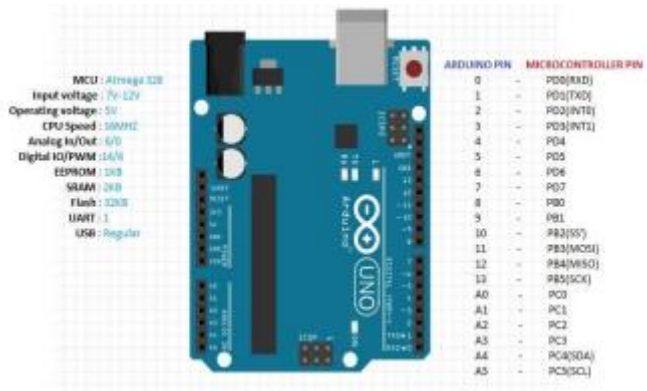
PENDAHULUAN

Tujuan Prakikum

1. Praktikan mengerti dan dapat memahi prinsip kerja motor servo
2. Praktikan dapat mengakses motor servo menggunakan arduino
3. Praktikan dapat mengontrol motor servo menggunakan arduino

Kajian Teori

Arduino adalah salah satu kit mikrokontroler yang berbasis pada Atmega328. Modul ini sudah dilengkapi dengan berbagai hal yang dibutuhkan untuk mendukung mikrokontroler untuk bekerja, hanya sambungkan ke power suply atau sambungkan melalui kabel USB ke PC selanjutnya Arduino Uno ini sudah siap digunakan. Arduino Uno ini memilki 14 pin digital input/output, 6 analog input, sebuah resonator keramik 16MHz, koneksi USB, konektor power input, ICSP header, dan sebuah tombol reset



1 Detail arduino

Buzzer adalah sebuah komponen elektronika yang berfungsi untuk mengubah getaran listrik menjadi getaran suara. Perangkat elektronika ini terbuat dari elemen piezoceramics yang diletakkan pada suatu diafragma yang mengubah getaran/vibrasi menjadi gelombang suara. Buzzer menggunakan resonansi untuk memperkuat intensitas suara. Berbeda dengan active buzzer, buzzer melody akan bersuara lantang bila diberi frekuensi tertentu. Tegangan catu buzzer juga berbeda-beda, pada praktek ini menggunakan buzzer 5v.

PROSEDUR PRAKTIKUM

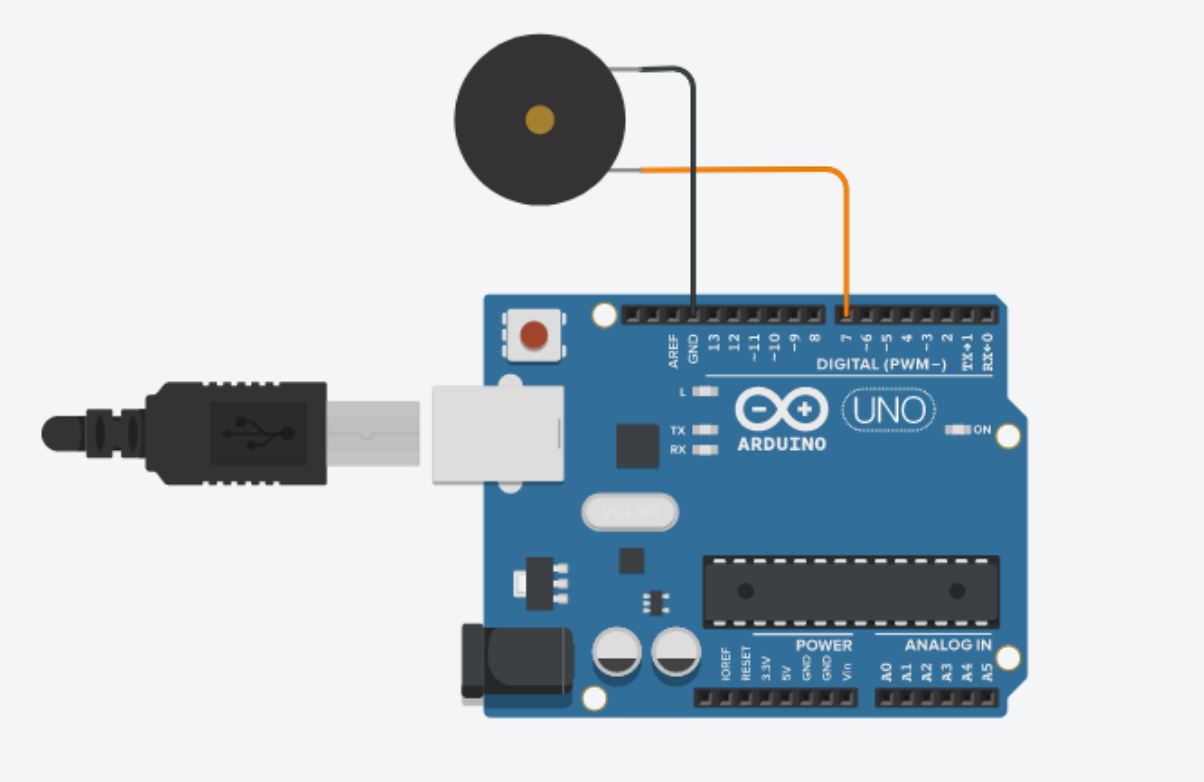
Daftar Komponen dan Alat

Alat dan Bahan:

1. Arduino UNO
2. Komputer
3. Software IDE Arduino UNO
4. Buzzer
5. Kabel jumper

Prosedur Praktikum

1. Rangkai komponen menjadi seperti berikut



2 Rangkaian percobaan

2. Masukkan kode

```
#define B5 987
#define C6 1047
#define D6 1175
#define E6 1319
#define F6 1397
#define G6 1568
#define A6 1760
#define C7 2093
```

```
#define B6 1976
#define D7 2349
#define buzzer 7

void setup()
{
pinMode(buzzer,OUTPUT);
}
void loop()
{
int bps = 1000;
    //mesat ngapung luhur jauh di awang awang
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/2);
    delay(bps/2);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/2);
    delay(bps/2);
    delay(bps/4);

    //Meberkeun jangjangna bangun taya karingrang
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
```

```
    delay(bps/4);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/2);
    delay(bps/2);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/2);
    delay(bps/2);
    delay(bps/4);

    //sukuna ranggaos rejeung amatukna ngeluk
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, B5, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
```

```
    tone(buzzer, F6, bps/2);
    delay(bps/2);
    delay(bps/4);

    //ngapak mega bari hiberna tarik nyuruwuk
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, B5, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/2);
    delay(bps/2);
    delay(bps/2);

    //saha anu bisa nyusul kana tandangna
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/2);
    delay(bps/2);
```

```
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/2);
    delay(bps/2);
    delay(bps/4);

    //Gandang jeung pertentang taya bandingannana
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/2);
    delay(bps/2);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/2);
    delay(bps/2);
    delay(bps/4);

    //Dipikagimir dipikaserab ku sasama
    tone(buzzer, G6, bps/4);
    delay(bps/4);
```

```
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, B5, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/2);
    delay(bps/2);
    delay(bps/4);

    //Taya karempan kasieun leber wawanenna
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, B5, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
```

```
    delay(bps/4);
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, C6, bps/2);
    delay(bps/2);
    delay(bps);

    //manuk dadali manuk pang gagahna
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/2);
    delay(bps/2);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/2);
    delay(bps/2);
    delay(bps/4);

    //perlambang sakti indonesia jaya
    tone(buzzer, C7, bps/4);
    delay(bps/4);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/2);
    delay(bps/2);
```

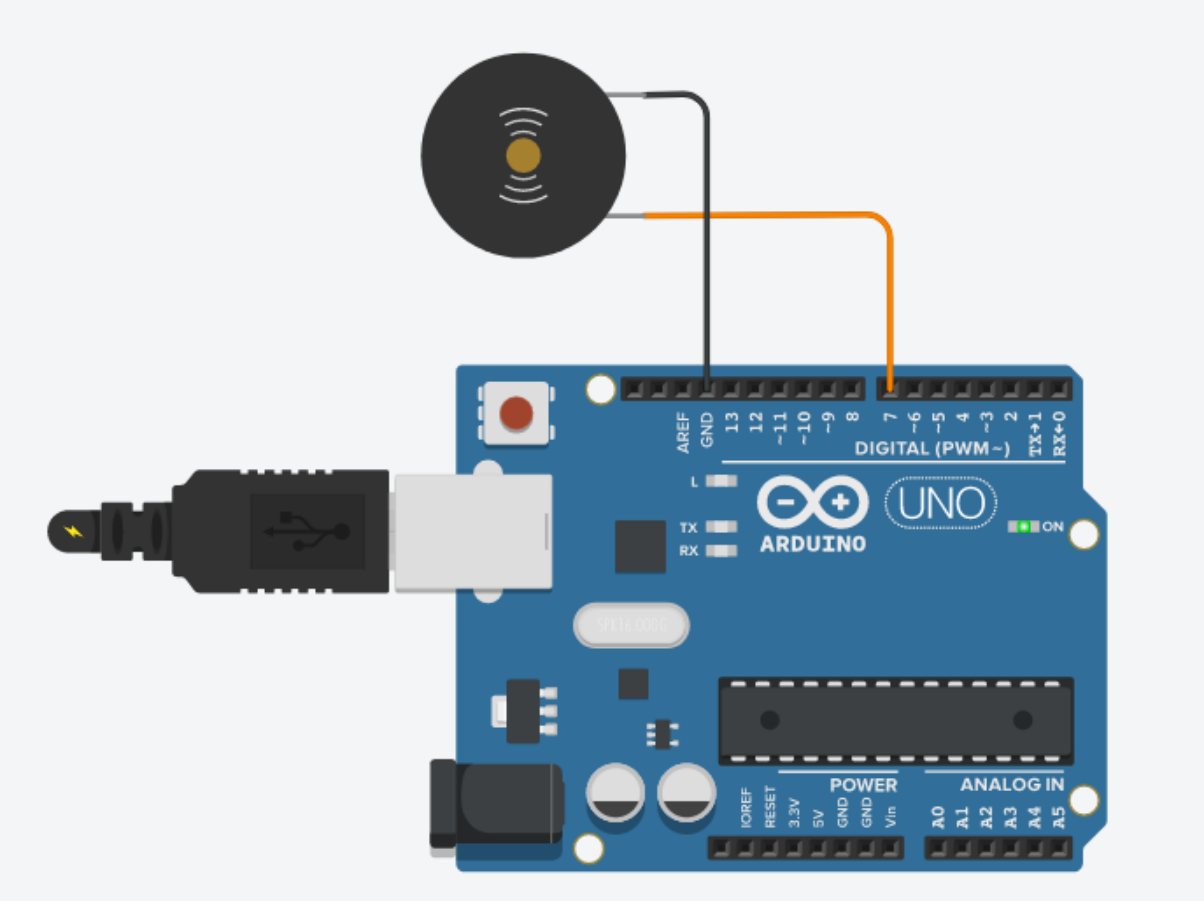
```
    tone(buzzer, E6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/2);
    delay(bps/2);
    delay(bps/4);

    //manuk dadali pangka koncarana
    tone(buzzer, C6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/2);
    delay(bps/2);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, F6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, A6, bps/2);
    delay(bps/2);
    delay(bps/2);

    //resep ngahiji rukun sakabehna
```

```
    tone(buzzer, A6, bps/4);
    delay(bps/4);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/4);
    delay(bps/4);
    tone(buzzer, D7, bps/2);
    delay(bps/2);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    delay(bps/4);
    tone(buzzer, G6, bps/4);
    delay(bps/4);
    tone(buzzer, B6, bps/4);
    delay(bps/4);
    tone(buzzer, D7, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/4);
    delay(bps/4);
    tone(buzzer, C7, bps/2);
    delay(bps/2);
    delay(bps/2);
}
```

3. Jalankan program dan lihat hasilnya

HASIL PRAKTIKUM

Hasil Praktikum dan Pembahasan



3 Rangkaian ketika dijalankan

Untuk lebih jelasnya, hasil percobaan dan pembahasan dapat dilihat di video Youtube https://youtu.be/Sojq8w-vElo

Kesimpulan

Buzzer daat diatur sedemikian rupa untuk membuat sebuah lagu, namun membutuhkan perangkat yang baik untuk dapat merender buzzer tersebut.