Catalog

Musical Instument using 555 timer IC

Description of the project:

We already know that sound is produced when the speaker diaphragm vibrates. As the amount of vibrations changes, different tones are produced; these tones are commonly referred to as "Notes" in the music world. The vibrations are created by turning on and off repeatedly for as many times as needed. We can also change the resistence settings on a Potentiometer to change the frequency of the output. Instead of utilizing a potentiometer, we will create an arrangement of various resister combinations. Each resistor distant from the first contributes value to the next, increasing the value from the previous ones. As a result, different Notes will be generated for each resister combination.

The fequency of the output mentioned befoere depends on how fast the capacitor charges and discharges. For example, if we increase the value of the capacitor the capacitor will take more time to charge and discharge, thus reducing the fequency and vice versa.

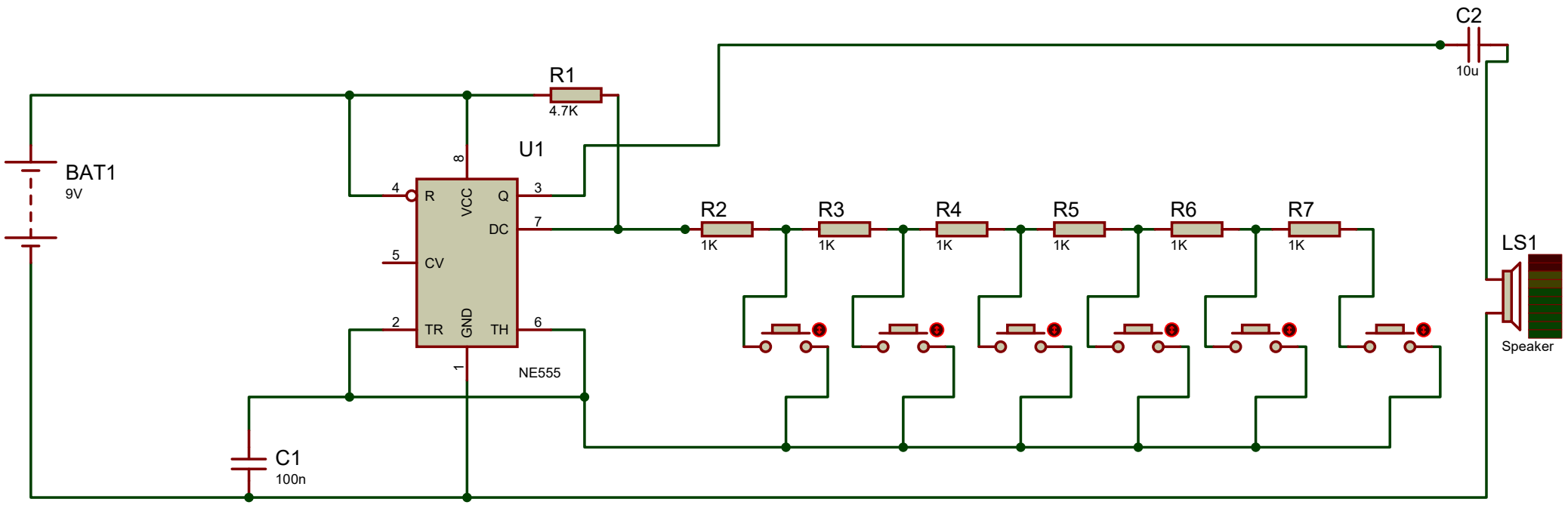
The frequency can be calculated as

Frequency (F) = 1.44 / (R1+2×R2) × C1

The schematics of the project have been attached with the proposal application. We have conducted a simulation on proteus software

Components needed:

NE555 timer IC
breadboard
9V battery
push buttons
jumper wires
resistors 4.7k , 1k
capcitors 100nF, 10uF



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BY: @AUTHOR	REV:@REV	TIME:	13:57:04

Date: 03.22.23

To,
The Faculty,
Zami Al Zunaed Farabe
Brac University,
Mohakhali, Dhaka- 1212.

Subject: Approval for Lab Project

Sir,

I am writing to request your approval for our CSE260 lab project proposal, which aims to design and build a musical instrument imitating a piano using the Timer IC NE555. We have been working on this project for several weeks, and we believe it has the potential to be an exciting and innovative addition to the lab projects.

Our proposed project involves designing a musical instrument that can produce various notes and melodies like a piano. We plan to use the Timer IC NE555 to generate the different frequencies required for each note. We have conducted extensive research on this topic and have already made significant progress in the design phase. We believe that our project will be an excellent opportunity for us to apply the knowledge and skills we have acquired throughout the course. Additionally, we have already done a simulation with proteus software and the schematics are provided in the attached documents.

We are eager to move forward with this project and hope to receive your approval as soon as possible. We understand that other groups may also be submitting proposals, and concerned if others take the project before us after all the work has been done by us. Please, provide further instructions if there are any issues regarding the project proposal.

We, therefore, pray and hope that you'd be kind enough to approve our proposal and we looking forward to hearing from you.

Sincerely,
On behalf of Group 02,
Tahmid Iqbal
ID: 21201701