DJ Lightning system

Mohit prajapati $(b17017)^{\star}$
* b17017@students.iitmandi.ac.in

***Abstract*—The topic for Aavishkar was to design a dj lightning system in which LED blinks according to the beats of any music or song near by this dj lightning system. The basic idea behind its implementation was to mainly use of led, transistors, capacitor, microphone sensor.Firstly made a circuit and a block diagram of this dj lightning system. Take a breadboard and all the components together which were used in this system and after it made the circuit of dj lightning system. This circuit had led which blinks according to the beat of any song. In this project I used 10 transistor, 9 LED, 1 capacitor, 1 microphone sensor and many resistance of different values.The main component of this system was the microphone sensor and the transistors which were the cause of blinking of LEDs. LEDs are the electronic components which have polarity (plus and minus).By mistake I connects the some led in the series combination which was wrong connection so thats why I was fail to gets the positive result and the LEDs were not glow or blinks,So I again thought about that why they not works and after some time I got that it was wrong and after that I connect all the components again in which there was no series combination of led because they have polarity. I also try to connect more than one led to a single transistor which works but that was not efficient as the previous one. So I drop my that idea and again connect all the components as they connect before which was the best one combination. and finally I got my fully efficient circuit which work and led glows or blinks as I want. and finally the circuit made in which the LEDs blinks according to the beats of any song or music which we want to play near by that circuit.**

I. Componants used

- Breadboard - 1
- Microphone sensor - 1
- LED - 9
- Transistor - 10
- Capacitor - 1
- Resistance - 12
- Battery - 1
- Amplifier - 1
- Filter - 1
- wire cutter - 1
- multimeter - 1
- soldering wire
- cartboard - 1
- gum - 1

II. Introduction

As the name of this project is dj lightning system so we can easily think about that project which is related to the lightning.In this project I want made a project in which I use only the basic electronic components of electronics lab like transistor, capacitor, resistor, led, microphone sensor, switch, battery, wires, breadboard. In this project the led will glows or blink according to the beats of any music or song as we want. so thats why I propose the name dj lightning system of that project. During my project I done many changes in that project like many time I use capacitor, led in different combination. and finally I got my circuit for my project.we could use other components for this.it is based only on the basic electronic components which are easily available in electronics lab. As the basic purpose of this dj lightning system was to use the electronic components which are available in electronics lab like - transistor, capacitor, led, battery, resistance, breadboard, wire, sensors. In this dj lightning system firstly the mic sensor take the input form the sound near by it and after that the signals were pass to the amplifier which amplify the signals and after that again pass to the filter which saparates the input signal which we require for blinking the led from the whole signals recieves form the sound near by the microphone sensor and after that it transfer the input signal to the main transistor. The mic sensor was connected to the capacitor which was connected to the base of the main transistor. After it the main transister transmit the current to all the transistor and the led through resistances and this is the process of that system to works and LED blinks.

A. Capacitor:-

Capacitor is a component which store the energy. if there is no path to flowing the current then the circuir will not works. so it needs a path to flow the current. capacitor is also the other main electronic component of this circuit because it was directly connected to the microphone sensor which detects the sound which we play.Firstly I didn't connect the capacitor and I got to know that it was not works, and than I again check the circuit that what was the problem in it, so after that I remember that I should connect that capacitor and after that the circuit works,so it was also the main component of that dj lightning system.[1]

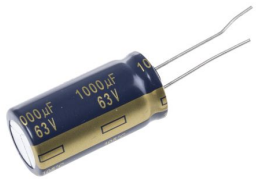

Fig.1. Capacitor

B. Microphone sensor:-

MIC is a microphone sensor which recieve the signals from outside means it detects the sound near by that sensor. It take the input sound and transmit that signal to the circuit. The basic purpose of that device is to detect the sound near by it. It was the main component used in this dj lightning system. when it recieve the input signal from the outside sound near by that component it detects that sound which I want for blinking purpose, I need only the perticular sound level because I don't want that there was any interference between the beats of song and the other unwanted noise present near by the dj lightning system.so thats why I need only the sound which was best for that project to blinking of led.[2]

Fig.2. microphone sensor

C. Transistor:-

Transistor is a electronic component which has 3 parts-Emitter, base, collector.it helps to the led to blink. all the led were connected to the collector part of all the transistors.they are also the main components of that dj lightning system because they cause of blinking of LEDs.all the led are connected to the collector part of respective transistor.and all the transistor are also connected are their base are also connected. and all the emitter of all the transistor are connected to the resistance which are also connected in parallel. so all the parts of transistor are connected to led and resistance.[3]

Fig.3. Transistor

D. Resistor:-

We need many resistances to connect them in the circuit we used them because they obstract with the input voltage. we can not connect the led to the power supply because they need only very less voltage input, if we connect the led directly to power supply than LED will defuse and the circuit will not works. so we need many resistances to connect them in that circuit.

E. LEDs:-

LEDs are the main components of that project because if they are not present in that circuit than what will blink. led have polarity (plus and minus) and we can not connect them series because they have polarity so in this project we should connect the led in parallel combination. led have many colors. So i use many led of different colors so that it look very attractive.

III. Motivation of the project

There are many use of that dj lightning system in many areas -

- We can use it in any party like dj night party and it's look is very attractive, so party is cool and very enjoyful momemtes using this dj lightning system.
- We can use it in our homes for decoration because of it's attractive look in night.

IV. Prequistites

Here are some prerequisites that one should have before using this dj lightning system -

1) We use a single battery of 9 V which was not so efficent to blinking the LEDs so we should 2 or 3 battery so that the project will works very efficiently, and led will glow better than the previous one.
2) As we use only 9 LEDs, we could use many more LEDs connected to that LEDs so it look very attractive and set the great pattern to the led for blinking for better look.
3) Transister are the main components of that circuit for blinking purpose We could use more number of transistors so that we aquire a better circuit with better result as the LEDs are blink with better efficiency.

V. Conclusion

We can use the electronic components in better way like to make many projects in our electronics lab. We require only to know about the basic uses of electronic components. It not need that we should use only the devices presents in the market and buy them and use them to make the projects, we can use the basic electronic components like transistors, capacitor, resistance, mic, battery, LEDs which are presents in the electronics lab.

Fig.4. Final Image of Project

REFERENCES

[1] Capacitor Image [online] Available: https://bit.ly/2IBRZkb
[2] Microphone sensor Image [online] Available: https://bit.ly/2LmYepx
[3] Transistor Image [online] Available: https://bit.ly/2IZRM9A