SNAP AND SWITCH

(S.A.S)

Submitted By

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SNAP AND SWITCH (S.A.S)

Idea Lab Project

Under the mentorship of

Prof. V.M.Dholakiya

**ELECTRICAL ENGINEERING DEPARTMENT
INSTITUTE OF TECHNOLOGY
NIRMA UNIVERSITY**

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Declaration

I do hereby declare that the technical project report submitted is original, and is the outcome of the independent investigations/research carried out by me and contains no plagiarism. The research is leading to the discovery of new facts/techniques/correlation of scientific facts already known. This work has not been submitted to or supported by any other University or funding agency.

I do hereby further declare that the text, diagrams or any other material taken from other sources have been acknowledged, referred and cited to the best of our knowledge and understanding.

Date:

Place:

Poornesh Raval
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Prof. V.M. Dholakiya

Asst. Prof.

INSTITUTE OF TECHNOLOGY

IDEA LAB

ELECTRICAL ENGINEERING DEPARTMENT

Final Report of the work done on the Idea Lab
Project.
1. Project Title: SNAP AND SWITCH (S.A.S)
2. Period of Project:
3. (a) Name of Student – Poornesh
Raval(15BEE090) Department – Electrical
Engineering
   (b) Name of Mentor – Prof. V.M.Dholakiya
Department – Electrical Engineering
4. Project Start Date:
5. (a) Total Amount Approved –
3,000/- (b) Total Expenditure –
(c) Report of work done –

   i. Brief objective of the project: This project aims at designing a gadget
       which can turn on or off any electronic device which is plugged in

   ii. Work done:

   Stimulation of the both transmission and receiver module of the device, the
   entire transmission module with Arduino program and receiver circuit on
   breadboard.

   iii.   Objectives not achieved Synchronization between the transmitter and receiver
   module.

   iv. Technical difficulties faced - synchronizing the transmitter and receiver
   frequency.

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Contents

1.1 Introduction

Home automation and smart gadgets are now one of the most demanding and essential part of human's life.Whenever we hear the word smart it means something innovative and intelligent.This project is on designing of a innovative gadget which can turn on or off any plugged in device with just a snap.

1.2 Literature survey

Automation is now a days need for every individual whether it can be an manufacturing industry or packaging industry or even home automation everywhere we desire to have easiness of any task to be performed .Controlling electrical devices without actually moving is something which everybody might have thought once , this can be attained by using of wireless communication i.e

electromagnetic waves like IR , UV and so on.

IR are very commonly used in almost every electrical and/or electronic device as remote to turn on or off a device. So in this project we will use the same IR with a the same application but in an engineer's way i.e using IR in more user friendly way.

1.3   Major   Objectives Proposed

This project aims at designing a S.A.S is a device which can be used to SWITCH OR ALTER THE ELECTRICAL STATE OF ANY DEVICE WHICH IS PLUGGED IN THE PLUG .

Arduino code for transmitter :

```
int Threshold ;

void setup()

{
```

```
  serial.begin(9600);

  pinMode(13,OUTPUT);

  pinMode(A0,INPUT)  ;

 }

 void loop()

 {


 Threshold = analogRead(A0);

 if(Threshold > 400)

 {

  digitalWrite(13,HIGH);

 }

 else

  {

  digitalWrite(13,LOW);

  }

 }
```

1.4 Simulation and Results and Working

THE WORKING :

  S.A.S works on IR signals along with sound sensor with the contribution of arduino .

  So when we snap the fingers it create a sound which is detected by our sensor and processed
  through the board and creates a small interval IR signal which is received by our receiver
  which is made in such a way that it alters the electrical state of the device and resulting it to
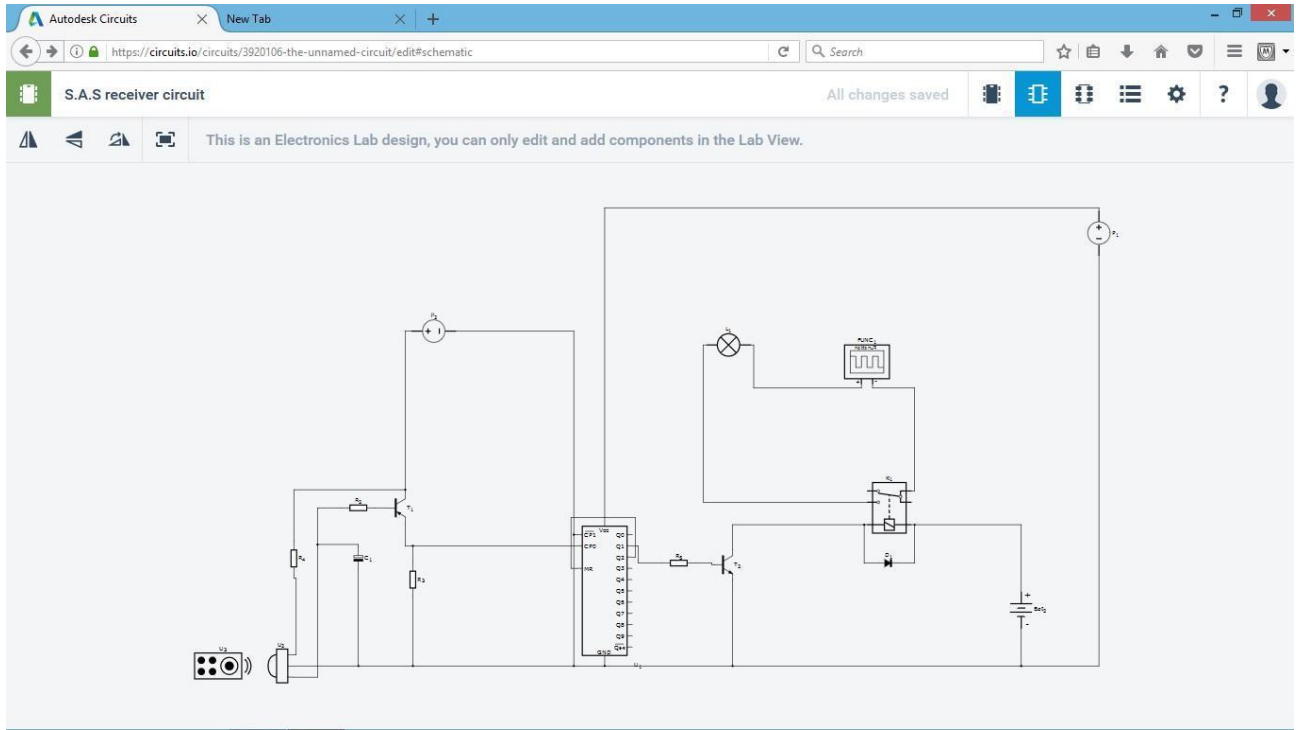 turning ON or OFF the device .

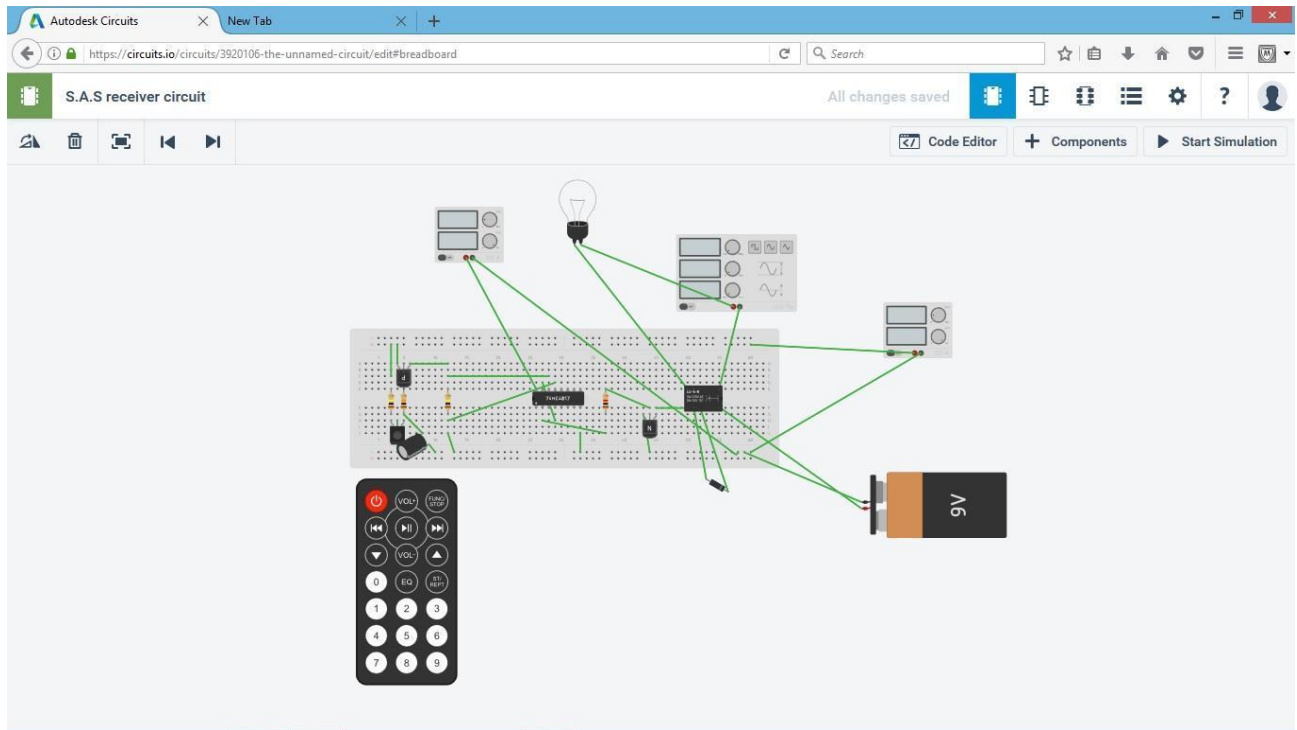Fig. 1 Schematic circuit
diagram of Receiver
circuit.

Fig. 2.a Stimulation of receiver circuit

(BULB OFF)

The Fig 2.a and Fig 2.b shows the stimulation of the receiver circuit. Fig 2.a shows the receiver side in the absence of IR signal . the bulb or the load remains off .

Fig 2.b shows the receiver side when there is IR signal received by the TSOP1738 and finally the bulb glows.
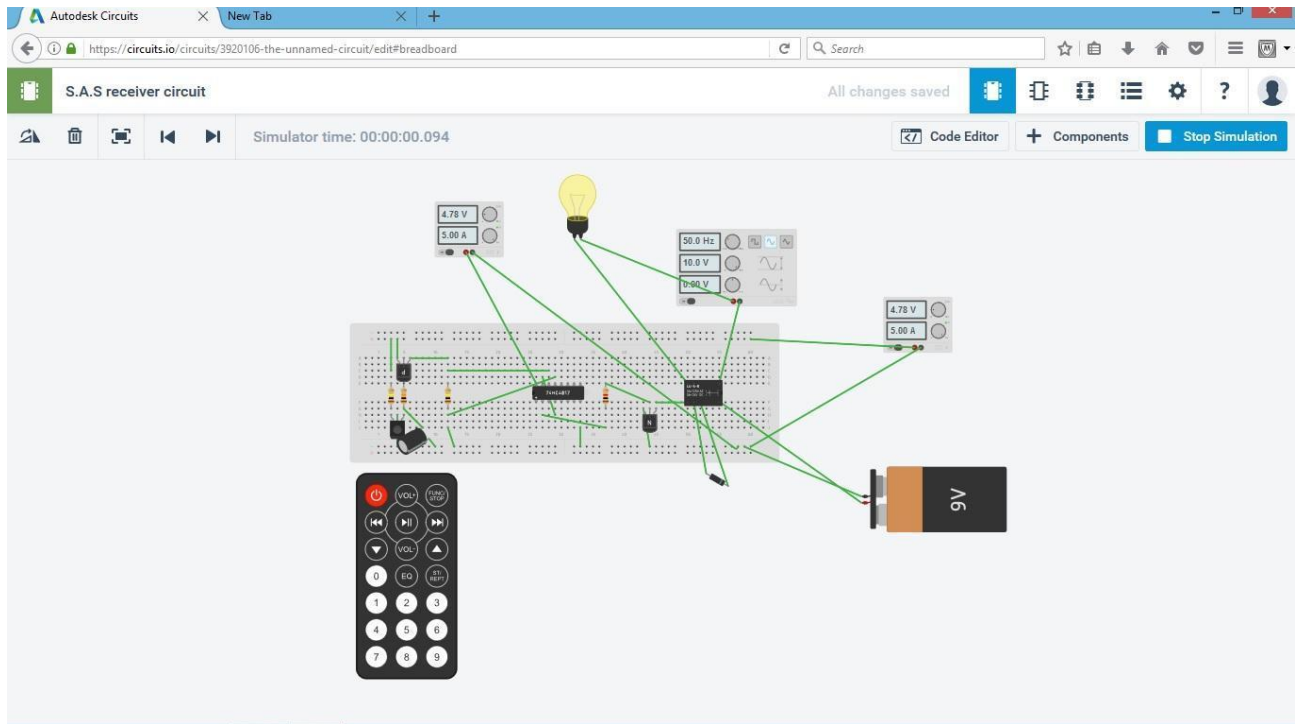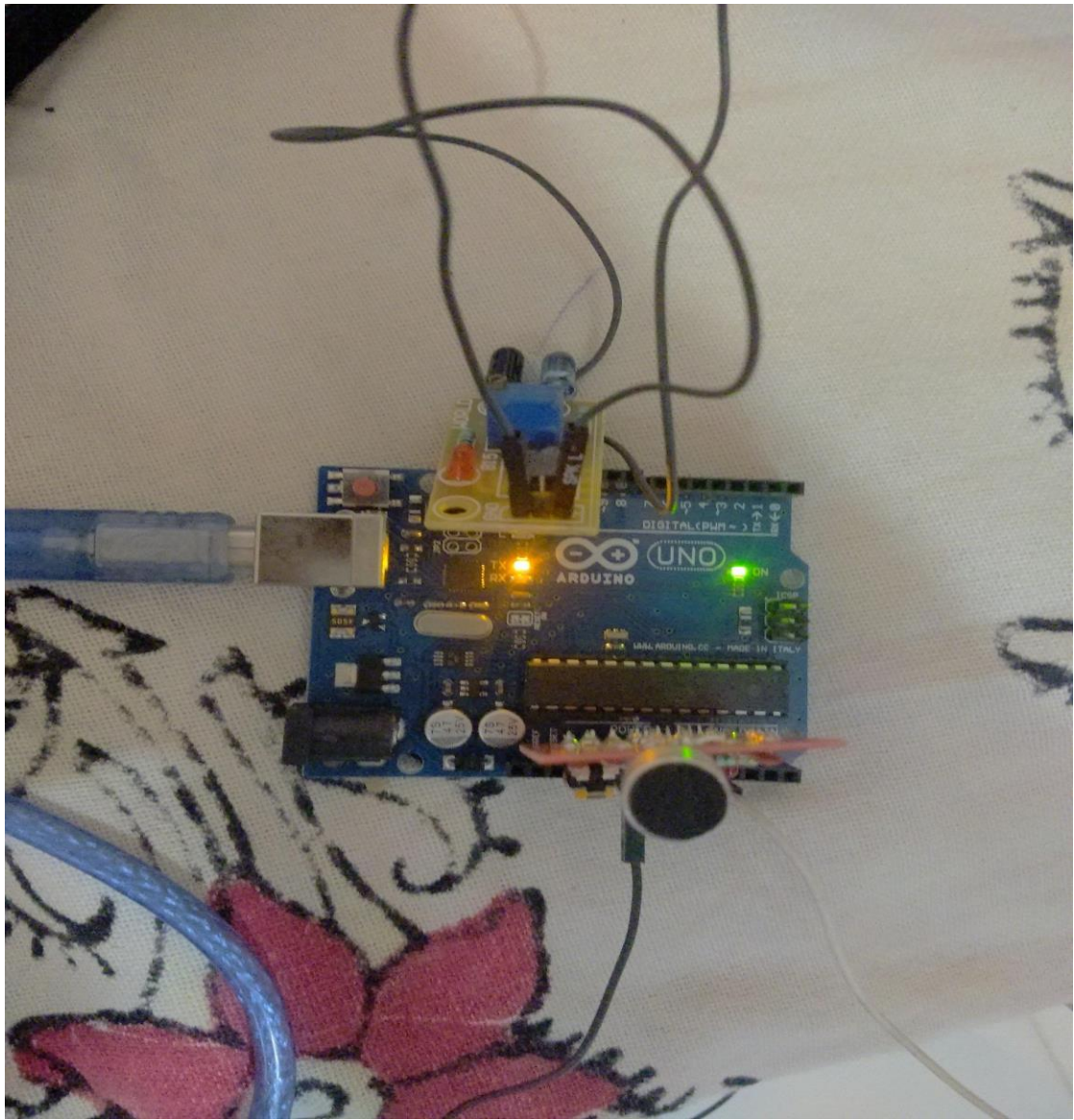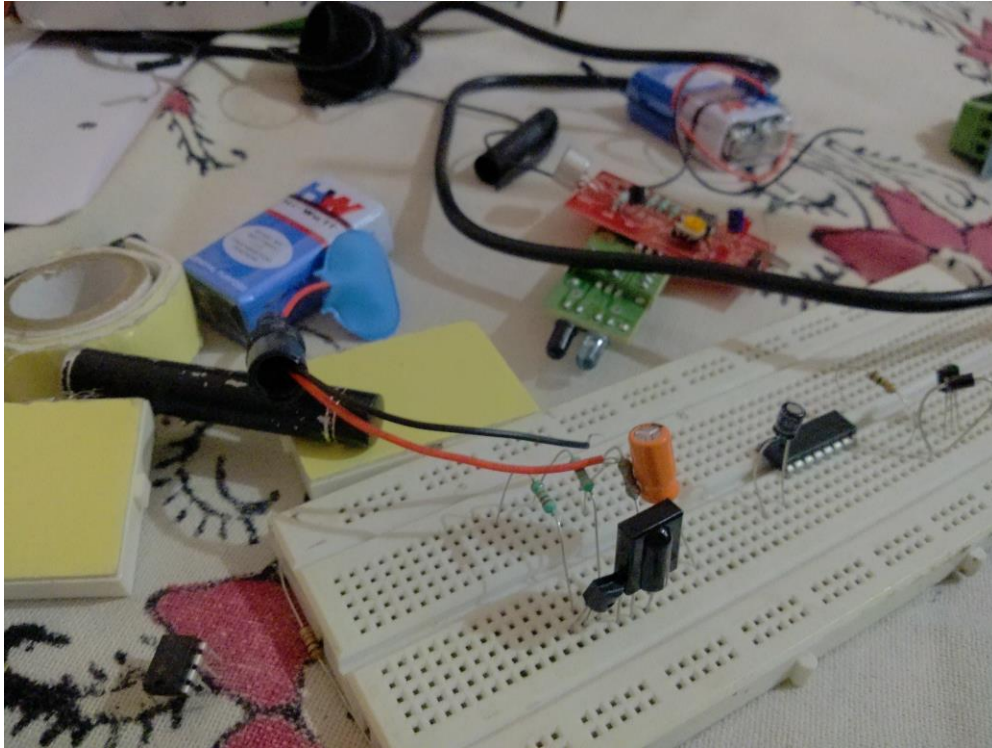
Fig 2.b) Stimulation of Receiver (BULB ON)

1.5 Hardware results and Objectives Achieved

Transmitter using IR , arduino and sound sensor is made.

Receiver module made.

1.6 Objectives not Achieved

Synchronisation between transmitter and receiver, make universal transmitter which allows to control multiple plugged in devices in the room.

1.7 Technical Difficulties Faced

Synchronisation between transmitter and receiver .

1.8 Budget Analysis

1. Budget Sanctioned: Rs. 3,000/-

2. Budget Utilized:

1.9 Conclusion and Future Work

S.A.S can be used everywhere there is plug point and a source of energy and can be used by anyone who don't want to get up and turn the plug switch on or off and of course anyone don't like to stand up and switch the plug.