GURU NANAK INSTITUTE OF ENGINEERING & TECHNOLOGY
Dahegaon, Kalmeshwar Road, Nagpur-441501.
(NAAC Accredited)

Department of Electrical Engineering

Session 2018-2019 (EVEN)

Semester: IV SEMESTER (CBCS) (Regular)

Mini Project

Date-16/03/2019

Notice

All the students of 2nd year are here by informed that to submit the topic for mini project up to on **5th April 2019 . at 5.00 pm** ,should submit their name to respective subject teachers .

Prof.Rajendra Bhombe

HOD,EE

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APPROVED BY AICTE, DTE & AFFILIATED TO RTM NAGPUR UNIVERSITY, NAGPUR
Dahegaon, Opp.IOC Petrol pump, Kalmeshwar Road, Nagpur - 441501. Ph. 07116-661400
Website: www.gnietac.in E-mail: gnietnagpur@gmail.com

DEPARTMENT OF ELECTRICAL ENGINEERING

Session 2018-19 (Even)

Mini Project List

IV Semester

Sr.No.	Name of Students	GUIDE NAME	Name Of Topic
1	Abhijeet Jivan Naitam	Prof. Diksha Khare	Touch door Bell
2	Achal Premlal Thakur		
3	Aditi Rajendra Rane		
4	Ajay Rahul Walde		
5	Amol Abhimanyu Patil		
6	Anjali G. Chhapparghare		Automatic anchor light
7	Balkrusha R Jamunkar		
8	Chaitanya Rashilal Bhonde		
9	Gaurav Prabhakar Gawande		
10	Harshal Ramesh Atram		
11	Himanshu Sunil Bharne		Smart traffic lighting system
12	Jayram SakharamTandilkar		
13	Mayuri Pramod Bhoyar		
14	Prachi Suresh Dongade		
15	Pratik Vijay Pande		
16	Priyanka Vijay Harangaonkar		Solar Charging Bag
17	Pruthviraj Prakash Chavan		
18	Rajeshwari Gunwantji Belekar		
19	Rita Anandrao Gedam		
20	Roshani UmakantWanjari		
21	Sant Kumar Thakur	Prof. Akshay Pillewan	5V DC To 48V DC Converter
22	Shruti Shridhar Raipure		
23	Suchita Moreshwar Pawar		
24	Vaibhav Dilip Tondare		
25	Vaishali Mukunda Gakare		
26	Sagar Ramesh Thawari		Dual-Voltage Rechargeable Torch Light.
27	Bhushan Tularam Runghe		
28	Shital Bandu Salodkar		
29	Hempushpa Sureshkumar Padoti		
30	Tejaswi Ramdas Bodkhe		
31	Akanksha Siddharth Meshram		GPS on ATmega.
32	Pitambar Raju Nannaware		
33	Sharmila Bablu Bhoumik		
34	Yuvraj Bhaurao Harinkhede		
35	Kalyani Devidas Khonde		
36	Ganesh Pavankumar Lilhare		PC-Based GPS.
37	Monitai Jagdish Uikey		

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38	Pooja Prakash Dhurve		
39	Ab Rahil Rafik Sheikh		
40	Avinash Santosh Tiwade		
41	Tushar Kishor Gayakwad	Prof.Pradeep Barde	Low Power Inverter.
42	Aashwini Vinodsingh Thakur		
43	Krishna singh		
44	Arjun Sheshrao Deshmukh		
45	Madhuri Manoj Nirmalkar		
46	Sneha Ashok Tekade		LPG Leakage Detector.
47	Satyamkumar Sharadrao Tete		
48	Rahul Sevakram Halmare		
49	Ujwal Srinivas Garkawar		
50	Meghanath Shiolal Chandrawanshi		
51	Laik Ahemed Hafeez Qureshi		Geyser Timer Circuit.
52	Ankush Olgan Farde		
53	Ruchita Gajanan Ladukar		
54	Amol Sharad khotele		
55	Pranali Naresh Wase		
56	Ashwin Babulal Bharne		Automatic Off Timer For CD Players.
57	Rahul Prabhakar Bagde		
58	Shubham Mahendra Paliwal		
59	Nikhil Radheshyam Nanhore		
60	Sonali Prabhakar Warghat		
61	Rahul Manohar Verma	Prof. Sneha Jethani	Doorbell Cum Visitor Indicator.
62	Swapnil Sahebrao Pannase		
63	Tejaswini Raju Deshbhratar		
64	Ashwin Bajirao Potbhare		
65	Gaurav Janardhan Rajurkar		
66	Sachin Sadanand Dahare		Electronic Fuse
67	Vikas Madukar Neware		
68	Kunal Narendra Armarkar		
69	Shubham Arvind Potdar		
70	Chetan Rushikesh Belsare		
71	Sayyed Mihnaz Ali Mahfooz Ali		Sonar Water Level Meter
72	Ankush Dhanpal Chahande		
73	Mayuri Pandurang Bawanwade		
74	Tejal Shridhar Raut		
75	Shweta Vijay Durge		
76	Sheware Vishal Pralhadrao		Fire Sensor Circuit
77	Yashasvi Gautam Khobragade		
78	Akshay Kumar Anilsingh Yadao		
79	Akash Sudhakar Deshmukh		

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80	Shubham Liladharrao Malode		
81	Shubhangi Onkar Dongre	Prof. Hitesh Murkute	Thermostat for Fridge
82	Mukesh Dnyaneshwar Satange		
83	Badal Sukchand Harinkhede		
84	Ankit Maroti Komalwar		
85	Akshep Ashok Masle		
86	Sandip Sukhchand Banewar		
87	Nikku Raviprasad Dubey		LED-Based Emergency Light
88	Kiran Prakash Rajpurohit		
89	Riya Bhimrao Khobragade		
90	Shubham Manohar Chauhan		
91	Pavan Anil Chatap		Light-Activated Switch
92	Arvind Chintaman Gajkeshwar		
93	Preshit Nemichand Harshe		
94	Rajesh Bapu Ganta		
95	Gaurao Kailas Gudaiya		
96	Kanheri Rahul Kamble		This Stereo Amplifier Is Simple To Make
97	Poonam Babarao Nagarale		
98	Mangesh Vijay Chavan		
99	Apeksha Gajanan Nitnavre		
100	Rakesh Bhaskar Papulwar		

Prof. Sneha Jethani
Class Incharge

Prof.R.M.Bhombe
HOD EE

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Department of Electrical Engineering
Session:2018-2019

NOTICE

Date: 18/4/2019

All the students of B.E III[rd] and V[th] semester EE are hereby informed that their seminar of mini project is scheduled on 25/4/2019 . All are requested to check synopsis and PPTs of presentation from their respective Guide till 22/4/2019.

Time :
III[rd] sem 11.00 am onwards
V[th] sem 2.00 pm onwards

Prof. Diksha Khare
Mini –Poject Incharge

Prof. Rajendra Bhombe
HOD,EE

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Nagpur - 441501

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Mini Project

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Prof.Rajendra Bhombe

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GURU NANK INSTITUTE OF ENGINEERING AND TECHNOLOGY

NAGPUR-441501

AcademicYear-2018-2019

DEPARTMENT OF ELECTRICAL ENGINEERING

A
Project
Report
On

Design and Implementation of a Clap Switch Circuit using IC 4017

Submitted By:-

Paramanad Munda
Pooja Dhamdar
Prajakta Chaware
Pranali Behare
Pranali Dongare
Pranik Dongare

Prof.Diksha Khare
Mini Project Guide

Prof. Rajendra Bhombe
HOD

Principal
Guru Nanak Institute of Engineering & Technology Nagpur-441501

CERTIFICATE

Forwarded here with "**Design and Implementation of a Clap Switch Circuit using IC 4017**" by **Paramanad Munda, Pooja Dhamdar, Prajakta Chaware, Pranali Behare,Pranali Dongare, Pranik Dongare**

Students of this college in fulfillment .

The requirement for the mini project of B.Tech .Electrical Engineering in faculty of Engineering & Technology,Rashtrasant Tuckdoji Maharaj Nagpur University,Nagpur, Maharashtra, India.

Prof.Diksha Khare
Mini Project Guide

Prof. Rajendra Bhombe
HOD

Principal
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Title: Design and Implementation of a Clap Switch Circuit using IC 4017

Abstract:

This project presents the design and implementation of a Clap Switch Circuit utilizing the IC 4017, a versatile decade counter/divider. The circuit is designed to respond to clapping sounds by switching on or off an AC lamp. The design utilizes a condenser microphone to detect sound, which is then processed through transistor amplification and fed into the IC 4017. Through this project, we explore the application of basic electronic components in creating a practical and efficient clap switch.

Introduction:

Clap switches offer a convenient way to control electrical appliances using sound. These switches are particularly useful in scenarios where hands-free operation is desired, such as in dark rooms or for individuals with mobility limitations. The project aims to design a reliable and responsive clap switch using readily available electronic components. The utilization of the IC 4017 allows for a sequential switching mechanism, enhancing the functionality and versatility of the switch.

Project Proposed:

The proposed project involves the design and implementation of a clap switch circuit utilizing the IC 4017 along with other necessary components such as transistors, capacitors, resistors, and a relay. The circuit is intended to detect clapping sounds through a condenser microphone, process the signals, and accordingly control the switching of an AC lamp.

Aim and Objective:

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The primary aim of this project is to develop a responsive and efficient clap switch circuit that can reliably control an AC lamp based on detected clapping sounds. The specific objectives include:

Designing a circuit layout incorporating the IC 4017 and other required components.

Testing and calibrating the circuit for optimal sensitivity and performance.

Integrating the circuit into a practical prototype for real-world application.

Evaluating the reliability and responsiveness of the clap switch under various conditions.

Methodology:

The methodology involves the following steps:

Selection and procurement of necessary components.

Schematic design and circuit layout.

Assembly of the circuit on a breadboard or PCB.

Testing and calibration of the circuit.

Integration with an AC lamp and relay for switching.

Performance evaluation under different sound conditions.

Optimization of sensitivity and response time.

How does a clap switch work?

At first, the clap sound sensed by the condenser mic.

The condenser mic converts the sound into an electric pulse.

Then the electric pulse amplified by the BC547 transistor.

After that, the electrical pulse fed to the CLK pin of CD4017 IC.

For each high pulse at CLK pin the state of the PIN 2 changes.

When the PIN 2 becomes HIGH, the second transistor turns ON.

If the second transistor turns ON the Relay also turns ON.

Now when the condenser sense the second clap sound, the next high pulse received at CLK PIN.

The PIN 2 changed the state (becomes LOW), so the second transistor turns OFF.

So the Relay turns OFF and the load connected with the relay also turns OFF.

Required Components:

CD4017 IC -1no

BC547 NPN transistors -2no

DC Condensor Mic -1no

100nf (103) Capacitor -2no

10k Resistors -2no

270k Resistor -1no

1M Resistor -1no

220-ohm Resistors -2no

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1N4007 Diode -1no

LED 5mm 3volt -1no

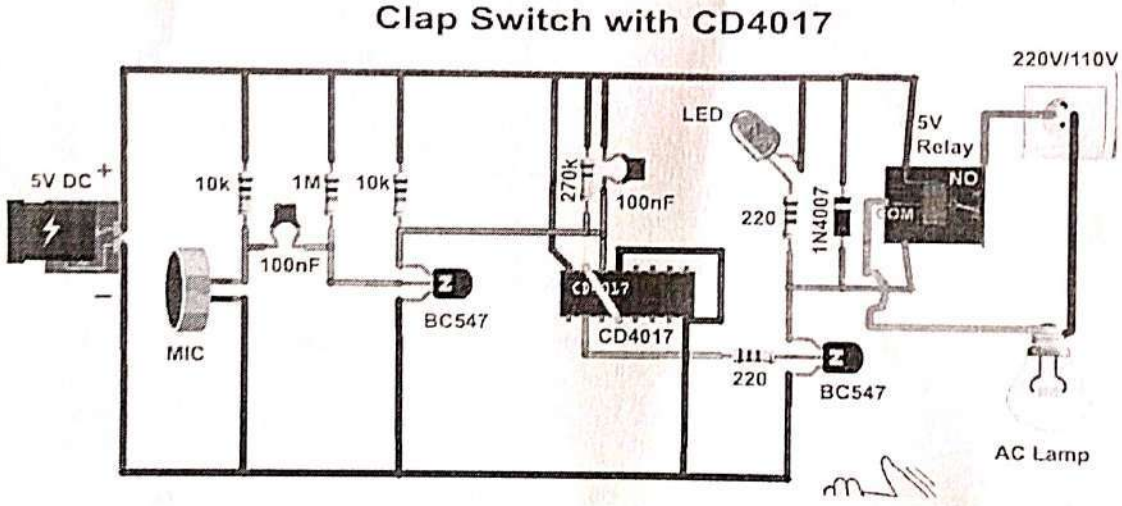
5v SPDT Relay

AC Lamp 220v/110v

9v battery

Zero pcb

Circuits diagram:



Specifications and Introduction of Components:

CD4017 IC:

- Specifications: The CD4017 is a CMOS decade counter/divider with 10 decoded outputs. It features a clock input (CLK), a reset input (RESET), and 10 output pins representing the decimal count from 0 to 9. It

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operates over a wide voltage range and is commonly used in various sequential switching applications.

- Introduction: The CD4017 IC plays a crucial role in this project by sequentially activating its output pins in response to input clock pulses. It facilitates the switching of electrical components in a predefined sequence, enabling the clap switch to control the AC lamp effectively.

BC547 NPN Transistors:

- Specifications: The BC547 is a general-purpose NPN bipolar junction transistor (BJT) commonly used in amplification and switching applications. It has a maximum collector current of 100mA and a maximum collector-emitter voltage of 65V.
- Introduction: Two BC547 transistors are employed in the circuit to amplify the electrical pulse generated by the condenser microphone. They serve as switches to control the activation of the relay and, consequently, the AC lamp.

DC Condenser Microphone:

- Specifications: A condenser microphone is an electroacoustic transducer that converts sound vibrations into electrical signals. It typically consists of a diaphragm and a backplate separated by a small air gap.
- Introduction: The condenser microphone detects the sound of clapping, converting it into an electrical signal. This signal is then processed by the subsequent circuitry to trigger the switching mechanism of the clap switch.

100nf (103) Capacitor:

- Specifications: The 100nf capacitor, also known as a 103 capacitor, has a capacitance of 100 nanofarads.
- Introduction: Two 100nf capacitors are utilized in the circuit for filtering and timing purposes. They help stabilize the circuit operation and ensure proper functioning of the IC 4017.

10k Resistors:

- Specifications: The 10k resistor has a resistance of 10,000 ohms.
- Introduction: Two 10k resistors are incorporated into the circuit to provide biasing and current limiting for various components, ensuring proper operation and stability.

270k Resistor:

- Specifications: The 270k resistor has a resistance of 270,000 ohms.
- Introduction: The 270k resistor is used in the circuit to set the timing parameters and voltage levels required for the operation of the IC 4017.

1M Resistor:

- Specifications: The 1M resistor has a resistance of 1,000,000 ohms.
- Introduction: The 1M resistor serves a similar purpose to the 270k resistor, contributing to the timing and voltage regulation aspects of the circuit.

220-ohm Resistors:

- Specifications: The 220-ohm resistor has a resistance of 220 ohms.

- Introduction: Two 220-ohm resistors are used to limit the current flowing through the LED and protect it from damage.

1N4007 Diode:

- Specifications: The 1N4007 is a general-purpose silicon rectifier diode capable of handling high voltage and current.
- Introduction: The 1N4007 diode is employed in the circuit to provide reverse polarity protection and prevent damage to the circuit components.

LED 5mm 3V:

- Specifications: The LED is a light-emitting diode with a diameter of 5mm and a forward voltage of 3 volts.
- Introduction: The LED serves as a visual indicator to signify the operation status of the clap switch circuit.

5V SPDT Relay:

- Specifications: The Single Pole Double Throw (SPDT) relay operates at 5 volts and is capable of switching between two different circuits.
- Introduction: The SPDT relay is a key component of the clap switch circuit, serving to control the switching of the AC lamp based on the output of the IC 4017.

AC Lamp (220V/110V):

- Specifications: The AC lamp operates at either 220 volts or 110 volts, depending on the region's electrical standards.

- Introduction: The AC lamp represents the load that will be controlled by the clap switch circuit. It serves as a practical application of the circuit's switching capabilities.

5V DC Supply:

- Specifications: The 5V DC supply provides a stable voltage source of 5 volts for powering the electronic components in the circuit.
- Introduction: The 5V DC supply ensures proper operation of the circuit by supplying the required voltage levels to the components.

Zero PCB:

- Specifications: The zero PCB, also known as a blank PCB or prototyping board, is a printed circuit board without any pre-designed traces or patterns.
- Introduction: The zero PCB serves as the platform for assembling and soldering the electronic components of the clap switch circuit. It provides a convenient and organized layout for constructing the circuit.

Future Scope:

The project opens avenues for further enhancements and applications, including:

Implementation of advanced signal processing techniques for improved noise rejection.

Integration with wireless communication protocols for remote control capabilities.

Development of a miniaturized version for portable and embedded applications.

Expansion of functionality to control multiple appliances or devices.

Results:

The completed project successfully achieves the design objectives, demonstrating reliable switching of an AC lamp in response to clapping sounds. The circuit exhibits satisfactory sensitivity and response time, making it suitable for practical use in various environments.

Conclusion:

In conclusion, the design and implementation of a clap switch circuit using the IC 4017 offer a cost-effective and efficient solution for hands-free control of electrical appliances. The project highlights the application of basic electronic components in creating a practical and user-friendly device. Further enhancements and refinements can be explored to extend the functionality and versatility of the clap switch for diverse applications.

References:

Manoj Kumar Jha, "Design and Implementation of a Clap Switch Circuit using IC 4017," International Journal of Engineering Research and General Science, Vol. 3, Issue 4, July-August, 2015.

Sedra, Adel S., and Smith, Kenneth C. (2004). Microelectronic Circuits (5th ed.). New York: Oxford University Press. ISBN 0-19-514251-9.

Texas Instruments, "CD4017B CMOS Decade Counter/Divider with 10 Decoded Outputs," Datasheet, Texas Instruments, July 2017.

Malvino, A. P., & Leach, D. P. (2016). Digital Principles and Applications. Tata McGraw-Hill Education.

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Horowitz, P., & Hill, W. (1989). The Art of Electronics. Cambridge University Press.

Bhargava, A. (2018). Clap Switch Circuit: Electronics Projects Engineering (Volume 2). Independently published.

Saha, P. K., & Chaudhuri, S. P. (2016). Electronics Circuits and Systems. PHI Learning Pvt. Ltd.

Website: Electronics Hub. "Clap Switch Circuit Using IC 4017." [Online]. Available: https://www.electronicshub.org/clap-switch-circuit-using-ic-4017/.

Website: Instructables. "Clap Switch Circuit using IC 4017." [Online]. Available: https://www.instructables.com/Clap-Switch-Circuit-Using-IC-4017/.

Website: Circuit Digest. "Clap Switch Circuit Using IC 4017." [Online]. Available: https://circuitdigest.com/electronic-circuits/clap-switch-circuit-using-ic-4017.

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Department of Electrical Engineering

Session 2018-2019 (EVEN)

Semester: VI SEMESTER (CBCS) (Regular)

Mini Project

Date-16/03/2019

Notice

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Prof.Rajendra Bhombe

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DEPARTMENT OF ELECTRICAL ENGINEERING

Session 2018-19 (Even)

Mini Project List

VI Semester

Sr.No.	Name of Students	GUIDE NAME	Name Of Topic
1	Aditya A. Ingewar	Prof.Sneha Jethani	Arduino-based Fancy Lighting
2	Ajinkya S. Digrase		
3	Akash A. Chauhan		
4	Akshay M. Senkapate		
5	Alpesh Bombate		
6	Amol D. Thakre		
7	Aniket R. Wankhede		
8	Anuja R. Thool		
9	Balaji D. Borgave		Miniature Strobe Light
10	Bhalchandra G. Bhoyar		
11	Bhavik D. Bhende		
12	Bhushan M. Padwekar		
13	Dipak S. Tarare		
14	Fayyaz K. Pathan		
15	Gaurav K. Umap		
16	Harshita A. Patil	Prof. Syeda Saba	Dynamic Display Using LED Strip
17	Hema S. Kuthe		
18	Hemant S. Mahadule		
19	Irfan Abbas Khan		
20	Jaya P. Dhodare		
21	Jitendra S. Gharde		
22	Lalit B. Bonde		
23	Mayur B. Kene		Shooting Game
24	Mayur T. Sahare		
25	Mayuri R. Lanjekar		
26	Meenakshi R. Belkhade		
27	Nehal A. Sone		
28	Nikhil K. Mankar		
29	Pankaj M. Tiwari		
30	Pankaj R. Jugsaniye		
31	Parmanand S. Munda		~~Digital Dice~~ Design and Implementation of a clap switch using IC 4017
32	Pooja M. Dhamdar		
33	Prajakta A. Chaware		
34	Pranali A. Behare		
35	Pranali V. Dongre		
36	Pranik S. Dongre		

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37	Pratik R. Sawane	Prof. Pradeep barde	RF-controlled Robot
38	Pratiksha B. Sonare		
39	Pratiksha P. Bhoyar		
40	Pravin M. Deshmukh		
41	Priya M. Khajuriya		
42	Priyal A. Chatarkar		
43	Puja S. Kumbhare		
44	Rakesh A. Bangar		
45	Ratan G. Das		
46	Rekha P. Bhajikhaye	Prof. Hitesh Murkute	Water Pump Controller
47	Sadaf Samrin Siddique		
48	Sanket S. Surjuse		
49	Shrushti R. Meshram		
50	Shubham A. Murkute		
51	Shubhangi M. Dhage		
52	Shubhangi R. Goswami		
53	Sneha K. Bejjani		
54	Sneha V. Wade		Sixth Sense Media Player
55	Sonali S. Nimkar		
56	Sumit B. Gawande		
57	Sushant S. Gondule		
58	Tushar G Birole		
59	Uddesh S. Walke		
60	Vinit D. Ladse		
61	Yamini A. Padole		

Prof.Syeda Saba
Class Incharge

Prof.R.M.Bhombe
HOD EE

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Department of Electrical Engineering
Session:2018-2019

NOTICE

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Time :
III[rd] sem 11.00 am onwards
V[th] sem 2.00 pm onwards

Prof. Diksha Khare
Mini –Poject Incharge

Prof. Rajendra Bhombe
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Department of Electrical Engineering

Session 2018-2019 (EVEN)

Semester: VI SEMESTER (CBCS) (Regular)

Mini Project

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Prof.Rajendra Bhombe

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Department of Electrical Engineering

Session 2019-20 (EVEN)

Semester: IV SEMESTER (CBCS) (Regular)

Mini Project

Date-16/02/2020

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DEPARTMENT OF ELECTRICAL ENGINEERING
Session 2019-20(EVEN)

Mini Project List

IV Semester

Sr.No.	Name of Students	Guide	Name Of Topic
1	Babli Gemraj Nandanwar	Prof.Trupti Gajbhiye	Transistor as a switch
2	Dipali Shamrao Surjagade		
3	Ganesh Ashokrao Burile		
4	Gyanesh Chandrashekhar Deshmukh		
5	Ritik Rajeshwar Gedam		
6	Shraddha Shobhelal Samrit		
7	Siddhant Ashok Dongare		
8	Sonali Dhiwaru Chalakh		
9	Sumit Kailash Kathe		IR Remote Tester
10	Surendra Raju Kasdekar		
11	Kalyani Sambhaji Wankhede		
12	Sneha Dnyaneshwar Shete		
13	Ramteke Simran Robin		
14	Tabhane Priya Dharmadas		
15	Nalanda Subhash Bagde	Prof.Yogesh Likhar	Generator Circuit
16	Shikardar Roshani Nanaji		
17	Charpe DhanshreeMoreshwar		
18	Kolarkar Swapnil Satish		
19	Suryawanshi Darwin Yadao		
20	Gadave Saurabh Yadav		
21	Pranav SureshraoYeole		
22	Kohad Nandakumar Rameshwar		Solid-state Relay Circuit
23	Belkhede AshishSubhashrao		
24	Khan Abrar Arif		
25	Dakhare ShantanuSheshrao		
26	Sahare Simran Dipak		
27	Sourabh Diwakar Dhoke		
28	Singh Gaurav Vijay		
29	Shende Vilas Anil		

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30	Parbate Amit Namdeo	Prof.Ankush kosare	arjacking System
31	Durgadas TulshiramWagh		
32	Gharde Manasi Mahendra		
33	Shaikh Shaffan Iqbal		
34	Ambatwar Kalyan Bhimrao		
35	GajbhiyeSanghpriy Vinod		
36	Shende Pooja Diliprao		
37	SomkuwarPavan Yuvrajji		Sequential Timer for DC Motor Control
38	Sonkusare VishalShankar		
39	NagpureAvinash Ramesh		
40	Meshram Naina Pundlik		
41	Khandare AkashDudhram		
42	Bhimte NishaPurandas		
43	KatreManojkumar Umendrakumar	Prof.Avinash Welankiwar	Multiple Device Control
44	Mirkute ManishMadhavrao		
45	Bhawarkar Sagar Shriram		
46	Kawale Jagruti Vinod		
47	Fulzele RishabhRajesh		
48	DhabarddeSneha Hansraj		
49	KumeriyaGajendra Jaydeo		
50	Chatakwar Swapnil		
51	Rajghare Chetan Namdeo		IoT Water Quality Monitor
52	Ramteke Pooja Ganesh		
53	Jaiwar Harshal Pandurang		
54	Remo Francis		
55	Pahune KarishmaWaman		
56	Jumle Manisha Babarao		
57	Patil Dikshant Ashwin	Prof.Akshay Pillewan	Robot
58	Manwatkar Saurabh Anil		
59	Khobragade Divya Ganesh		
60	Sapate Amol Haridas		
61	Dongre Shubhangi Onkar		
62	Kaware Ashwini Ramesh		
63	Katre Akash Sunil		le-Avoidance Robot
64	Thaware Akshata Padmakar		

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65	Sushma Parasmani Gajbhiye		
66	Pawankar Yamini Purushottam		
67	Awnuri Shirisha Shriniwas		
68	Ingole Kishor Pandurang		Robotic Arm Control
69	Tembhurne Niharika Dinesh		
70	Bharne Vaishnil Anil		
71	Didawat Akshay Ishwarsing		
72	Sumit Nattulal Basiwar		

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Prof.R.M.Bhombe
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Department of Electrical Engineering
Session:2019-2020

NOTICE

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Time :
III[rd] sem 11.00 am onwards
V[th] sem 2.00 pm onwards

Prof. Diksha Khare
Mini –Poject Incharge

Prof. Rajendra Bhombe
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Department of Electrical Engineering

Session 2019-2020 (EVEN)

Semester: IV SEMESTER (CBCS) (Regular)

Mini Project

Notice

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Guru Nanak Institute of Engineering And Technology

Dahegaon,KalmeshwarRoad,Nagpur-4415001

Department of Second-Year

Session 2019-2020

A Mini Project Work

Submitted to Department of B.tech. Year GNIET,Nagpur

On

IR Remote Testor

Submittedby–

Sumit Kailash Kathe
Surendra Raju Kasdekar
Kalyani Sambhaji Wankhede
Sneha Dnyaneshwar Shete
Ramteke Simran Robin
Tabhane Priya Dharmadas

Under the guidance of–

Prof. Trupti Gajbhiye Mam

Assistant Professor,

Electrical Department

GNIET Nagpur

VicePrincipal&HOD

Prof.Rajendra Bhombe

Principal
Guru Nanak Institute of Engineering & Technology Nagpur- 441501

CERTIFICATE

Forwarded here with "IR Remote Testor" by Sumit Kailash Kathe, Surendra Raju Kasdekar, Kalyani Sambhaji Wankhede, Sneha Dnyaneshwar Shete , Ramteke Simran Robin , Tabhane Priya Dharmadas a students of this college Guru Nanak Institute Of Engineering. Mini project ofB.Tech.Electrical Engineering in Faculty of Engineering & Technology, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, Maharashtra, India.

Co-ordinateby:

Prof. Trupti GajbhiyeMam

VicePrincipal&HOD

Prof.Rajendra Bhombe

Principal
Guru Nanak Institute of Engineering &
Technology Nagpur

INDEX

Aim :- Toshow howtosimple canbeusedfor activating an LED in response to IR raya from any ordinary IR remote control system.

The IR remote is generally used in home theatres and is based ontheprincipleofusinginfraredlightasthemediumofcommunication. A TV remote consists of a set of buttons and a circuit board . Each button is embedded with a black conductive disk which acts as a contact between the buttons and the printed circuit board. The cir cuit board or the chip consists of circuitry to sense the connections or detect the button being pressed and produces the signal in Morse code form which is amplified by the transistors and then given to IR LED. The IR LED is connected to the end of the circuit board and emits infrared light which is sensed by the sensor placed at the receiver of the TV.

ComponentsRequired

- LED
- Transistor-BC557
- Resistor12K
- buzzer
- 9VBattery
- Breadboard
- Jumperwire

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Procedure:-

1. cameracandetectIRlight,thoughit'sinvisibletothenakedeye.
2. Observe the Prepare the Remote: Ensure the remote has fresh batteries inserted.
3. Set Up the Testing Environment: Make sure there's enough light in the room, as sunlight or bright indoor lighting can interfere with IR signals.
4. Locate the IR Emitter: Look for the IR emitter on the remote. It's usually a small, dark-colored or transparent window located at the front of the remote.
5. Power Up the Remote:Pressany button on the remote while pointing it toward syour smartphone's camera.The smartphone Camera:Look at the smartphone screen through the camera app. If the remote is functioning properly, you should see a flashing light on the screen whenever a button is pressed on the remote. This flashing light indicates that the IR signal is being emitted.
6. Test Multiple Buttons: Try pressing various buttons on the remote to ensure all functions are working correctly. Each button press should produce a flashing light on the smartphone screen.
7. Troubleshoot: If you don't see any flashing light on the smartphone screen, try replacing the batteries in the remote. If the issue persists, the remote might be faulty and may need to be repaired or replaced.
8. Repeat the Process: Perform this test periodically to ensure the remote continues to function properly over time.
9. By following these steps, you can effectively test anIR remote control to ensure it is working correctly.

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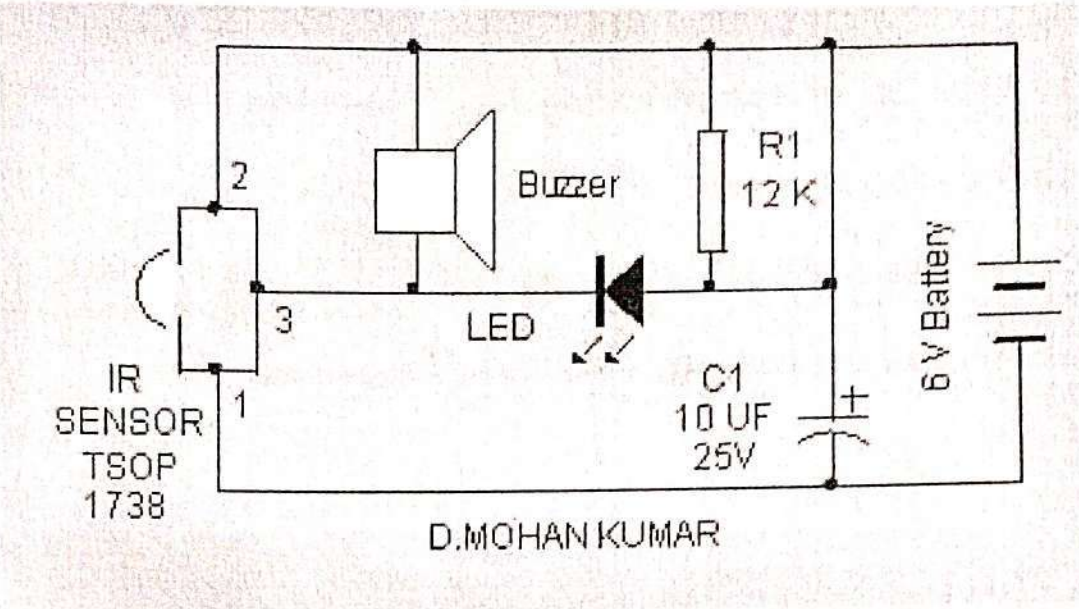
Circuit diagram:-



Working:-

These sensors work on the principle of light emitting or Detecting infrared radiations. When a signal is passed from the electronic device, the sensors will detect the radiation in its limited area of network and makes the device to be turned on or off.

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Application using IR Remote:-

This small InfraRed Remote Control Tester circuit is used for checking the operation of an infrared remote control unit. The circuit is based onthe idea of connecting a piezo buzzer directly to an IR receiver IC. Operation of the remote control is indicated by the buzzer making a chattering noise.

Result:-

Turn on the supply to power the circuit, and press any button on your 38KHz IR Remote. The pulses received by the sensor are transmitted by Remote, hence the OUT terminal gets LOW which makes the circuit complete for LED and Buzzer.

Bibiology:-

1) www.google.com

2) https://en.m.wikipedia.org

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Department of Electrical Engineering

Session 2019-20 (EVEN)

Semester: VI SEMESTER (CBCS) (Regular)

Mini Project

Date-16/02/2020

Notice

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DEPARTMENT OF ELECTRICAL ENGINEERING
Session 2019-20 (EVEN)

Mini Project List

VI Semester

Sr.No.	Name of Students	Guide NAME	Name Of Topic
1	Aashwini Vinodsingh Thakur	Prof.Akshay Pillewan	Water Level Indicator
2	Ab. Rahil Ab. Rafiq Sheikh		
3	Abhijeet Jivan Naitam		
4	Achal Parimallal Thakur		
5	Aditi Rajendra Rane		
6	Ajay Rahul Walde		
7	Akanksha Siddharth Meshram		
8	Akash Sudhakar Deshmukh		
9	Akshay Arun Nakade		
10	Akshay Kumar		• Video Calling/Recording Smartphone Stand
11	Akshay Ashok Masle		
12	Amol Abhimanyu Patil		
13	Anjali Ganesh Chhaparghare		
14	Ankit Maroti Komalwar		
15	Ankush Umesh Kharbikar		
16	Arvind Chintaman Gajeshwar		
17	Ashwin Babulal Bharne	Prof.Praful Kumbhare	• Arduino Powered MP3 Player
18	Ashwin Bajirao Potbhare		
19	Badal Sukhchand Hirankhede		
20	Balkrushna Ramkrushna		
21	Bhushan Tularam Runge		
22	Chaitanya Rasilal Bhonde		
23	Ganesh Pawankumar Lilhare		
24	Gaurav Kailash Guddhhaiya		• Pocket Piano Using 555 Timer IC
25	Gaurav Prabhakar Gawande		
26	Harshal Ramesh Atram		
27	Hempushpa Sureshkumar		
28	Himanshu Sunil Bharne		
29	Jairam Sakaram Tandilkar		

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30	Kalyani Devidas Khonde	Prof. Diksha Khare	• Industrial Production Line Counter System • Social Distancing ID Card
31	Kamleri Rahul Kamble		
32	Kaveri Ajay Kanmoy		
33	Kiran Prakash Rajpurohit		
34	Krishna Singh		
35	Laik Ahemad Hafiz Quireshi		
36	Lucky Diwakar Sarjare		
37	Manish Anand Rambhad		
38	Manish Anil Nagrale		
39	Mayur Anil Kale		
40	Mayuri Pandurang Bawangade		
41	Mayuri Pramod Bhoyar		• Ultrasonic Glasses For the Blind
42	Monitai Jagdish Ukey		
43	Nikhil Radheshyam Namore		
44	Nikku Raviprasad Dubey		
45	Pawan Anil Chatap		
46	Prachi Suresh Dhongade		
47	Pratik Vijay Pande		
48	Prityiraj Prakash Chavhan		
49	Priyanka Vijay Haringaokar	Prof.Trupti Gajbhiye	• Lifi Data Transfer System
50	Priyanka Bandu Borkar		
51	Rajesh Bapu Ganta		
52	Rajeshwari Ganwant Belekar		
53	Rita Anadrao Gedam		
54	Rohit Sewakram Dhakate		
55	Roshan Kamlakar Gayakwad		
56	Roshani Umakant Wanjari		
57	Ruchita Gajanan Ladukar		Power Saving Relay Driver
58	Sachin Sadanand Dahare		
59	Sandip Sukhchand Banewar		
60	Santkumar Ompraksh Thakur		
61	Satyamkumar Sharadrao Tete		
62	Sharmila Bablu Bhoumik		
63	Shital Bandu Salodkar		

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64	Shruti Shridhar Raipure		
65	Shubham Mahendra Paliwal	Prof.Avinash Welankiwar	• LIDAR Micro Done With Proximity Sensing
66	Shubham Manohar Chaouhan		
67	Shubham Milind Sonkamble		
68	Shubham Narayan Sakhare		
69	Shubham Sajan Wanjari		
70	Shubham Vitthalrao Khamkar		
71	Sonali Prabhakar Warghat		
72	Saurabh Gajanan Bondre		Mobile Cell Phone Charger
73	Suchita Moreshwar Pawar		
74	Switi Dattaraj Ghode		
75	Tejal Shridhar Raut		
76	Tejaswi Ramdas Bodakhe		
77	Toshita Gangaram Kumbhe		
78	Vaibhav Dilip Tondare		Generate Power Using Microturbine
79	Vaishali Mukunda Gakre		
80	Vicky Raju Burde		
81	Yashasvi Gautam Khobragade		
82	Yuvraj Bhaurao Harinkhede		

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Prof.R.M.Rhombe
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Session:2019-2020

NOTICE

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Time :
IIIrd sem 11.00 am onwards
Vth sem 2.00 pm onwards

Prof. Diksha Khare
Mini –Poject Incharge

Prof. Rajendra Bhombe
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Department of Electrical Engineering

Session 2019-20 (EVEN)

Semester: VI SEMESTER (CBCS) (Regular)

Mini Project

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Department of Electrical Engineering

Session 2020-21 (EVEN)

Semester: IV SEMESTER (CBCS) (Regular)

Mini Project

Date-14/02/2021

Notice

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DEPARTMENT OF ELECTRICAL ENGINEERING

Session 2020-21 (EVEN)

Mini Project List

IV Semester

Sr.No.	Name of Students	GUIDE NAME	Name Of Topic
1	Sarvan Narayan Gour	Prof. Avinash Welankiar	LED Blinker
2	Achal Rupchand Wadbudhe		
3	Vaishnavi Raju Madankar		
4	Dhammanand Prabhudas		
5	Gajanan Santosh Gahule		
6	Gaurav Sheshrao Dakhare		
7	Mahesh Dilip Musale		
8	Shubham Ramchandra		
9	Purvendra Wasudeo		Automatic Rain Detection
10	Jitesh Kashinath Gharpure		
11	Niraj Shripad Nile		
12	Gaurav Sudhir Madekar		
13	SumitWasudeo Bhoyar		
14	Pritam Sanjayrao Chaple		
15	Ajinkya Jankidas Mate		
16	Poonam Rajesh Gedam		
17	Milind Kuldeep Gadling	Prof. Ankush kosare	• Android Micro Drone With Obstacle Detector
18	Rugwed Shivshankar		
19	Yogita Tejram Uikey		
20	Nikhil Madhukar Bhalerao		
21	Saurabh Gopal Khujnare		
22	MohitSuresh Gudadhe		
23	Mayur Rajendra Bhakte		• Health Monitoring System using 7-Segment Display & Atmega Microcontroller
24	Akhil Hiralal Chhanikar		
25	Suraj Vijayrao Lekurwale		
26	Sadhana Sovindas Bisen		
27	Shweta Bapurao Randkhe		
28	Sanket Pravin Gund		
29	Pallavi Deorao Ghonge		
30	Sweta Kiranrao Ghatole		

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31	Arti Dinesh Khambalkar		
32	Sushma Rajendra Mendhe		
33	Prasad Shridhar	Prof. Diksha Khare	• Induction Motor Timer Using Auto Delta Star Starter
34	Waqar Ahmad Mumtaz		
35	Ankit Upasrao Kawadkar		
36	Sahil Purushottam Tale		
37	Ravindra Vinayak Hole		
38	Chetan Wasudev Ambagade		
39	Vilas Dhuplal Mahure		
40	Akash Fulchand Bharadwaj		
41	Badal Somaji Rangari		• Ac to High Voltage DC Using Voltage Multiplier Circuit
42	Shreya Sangam Kapse		
43	Vandana Shobharam		
44	Satish Arvind Dudhe		
45	BhushanVishnu Murodiye		
46	Mahesh Raju Verma		
47	Sujit Murlidhar Bhoyar		
48	Punam Chandrabhan Mahure		
49	Ganesh Ramrao Bhandarwad	Prof. Yogesh Likhar	• Automatic Road Reflector Light
50	Bhagwat Dinesh Devsarkar		
51	Dinesh Natthu Ghate		
52	Shubham Madhavrao		
53	Rahul Kiran Warke		
54	Shubham Narhari Deshmukh		
55	Snehal Sudhakar Khobragade		
56	Shubham Shravanji Bitane		
57	Rakhibai Keshorao Patle		• Remote Control Plant Watering System Using 8051
58	Vaibhav Dhondu Mamtkar		
59	Shende Bhavika Nilkanth		
60	Kuthe Rajat Madhukar		
61	Pache Deepak Chamanlal		
62	Burande Ojasvi Sanjay		
63	Sahare Vivek Surajlal		

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Department of Electrical Engineering

Session 2020-21 (EVEN)

Semester: IV SEMESTER (CBCS) (Regular)

Mini Project

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GURU NANK INSTITUTE OF ENGINEERINGANDTECHNOLOGY

NAGPUR-441501

AcademicYear-2020-2021

DEPARTMENTOFELECTRICALENGINEERING

A
Project
Report
On

Automatic rain detection alarm system

SubmittedBy:-

Purvendra Wasudev
Jitesh Gharpure
Niraj Nile
Gaurav Madekar
Sumit Bhoyar
Pritam Chapale
Ajinkya Mate
Poonam Gedam

Prof.Avinash Welankiar
Mini Poject Guide

Prof. Rajendra Bhombe
HOD

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CERTIFICATE

Forwarded here with " Automatic rain detection alarm system " by **Purvendra Wasudev,Jitesh Gharpure, Niraj Nile,Guarav Madekar,Sumit Bhoyar, Pritam Chapale, Ajinkya Mate, Poonam Gedam** Students of this college in fulfillment .

The requirement for the mini project of B.Tech .Electrical Engineering in faculty of Engineering & Technology,Rashtrasant Tuckdoji Maharaj Nagpur University,Nagpur, Maharashtra, India.

Prof.Avinash Welankiar
Mini Poject Guide

Prof. Rajendra Bhombe
HOD

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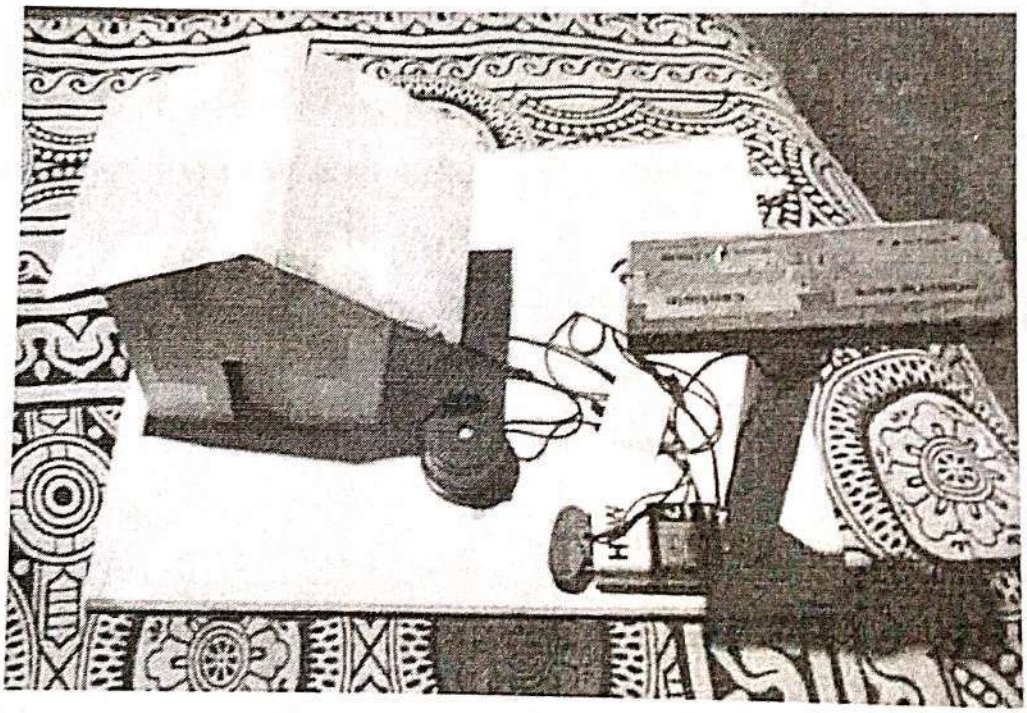
INDEX

Aim and objective

- To design an efficient automatic rain detection and alert buzzer system.
- To detect the rain falling using a rain sensor
- To increase productivity of rain falls will be minimised.
- To detect any moisture or drop of liquid on the rain sensor panel or board using an embedded system . .

Components required

1. 9V Battery
2. Buzzer
3. Raindetector
4. LED
5. NPNtransistor
6. Switch



Methodology

- To develop and implementa system which protects the vehicles, clothes, small scale agricultural crops, etc automatically by detecting rain without the need of human beings.
- This project entitled smart protection against environmental impact is small step towards the comfort ability and save our time. By considering above views, which encourage us to choose such a project.
- To develop electromechanical system to perform automatic roof mechanism as rain is detected using rain sensors.
- At the end of this project we were able to design a system,which can solve the problem better idea for drying wetclothese specially in rainy season and many of other applications.

Working and procedure

1. When the rain drop is detected by rain detector it will gives signal to the buzzer and buzzer starts to sound.
2. An additional function is delaying of the alert and the glowing generation; buzzer raises an alert only when raining at a detection of a certain threshold, within a predefined time interval.This extra feature helps inreducing false alarm counts to some extent.
3. A simple experiment was performed to obtain the readings obtained from the rain sensor when there was no rain,when it

Conclusion

This project is the design and construction of a rain detector with an alarm system that can detects rain fall, the device was able to detect anymoistureordrop ofliquidontherain sensorpanelorboardusing an embedded system for the detection of rain . It may be concluded thattheaimandobjectives oftheproject havebeen metbydesigning and constructing a rain detector with an alarm system which may be used fordemonstrationpurposeonly. Theraindetectorwith analarm system constructed has the capability to sense rainfall and tells when it is heavy or low.

References

- Internet
- NCERTtextbookXII

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Mini Project

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DEPARTMENT OF ELECTRICAL ENGINEERING
Session 2020-21 (EVEN)

Mini Project

VI Semester

Sr.No.	Roll	Name of Students	Name of Guide	Name of Project
1	1	Apeksha Gajanan	Prof. Ankush Kosare	Dual Axis Solar Power Tracker System
2	2	Deepali Shamrao		
3	3	Dhanshree Moreshwar		
4	4	Divya Ganesh		
5	5	Jagruti Vinod Kawale		
6	6	Kalyani Sambhaji		5V DC To 48V DC Converter
7	7	Karishma Waman		
8	8	Madhuri Manoj		
9	9	Manasi Mahendra		
10	10	Naina Pundlik Meshram		
11	11	Nalanda Subhash Bagde		Electric Vehicle Battery Charging Solutions
12	12	Niharika Dinesh		
13	13	Pooja Ganesh Ramteke		
14	14	Priya Dharmadas		
15	15	Priyanka Sheshrao		
16	16	Roshni Nanaji Shikardar	Prof. Akshay Pillewan	USB Power Electric Socket
17	17	Sharddha Shobhalal		
18	18	Simran Robin Ramteke		
19	19	Sneha Dnyaneshwar		
20	20	Sneha Hansraj Dhabarde		
21	21	Sonali Dhivaru Chalakh		Make Your Own Energy Meter
22	22	Sushma Parasmani		
23	23	Yamini Purushottam		
24	24	Abrar Arif Khan		
25	25	Aditya Sahebrao Chore		
26	26	Akash Dudhram		Joystick-Controlled Industrial Automation
27	27	Akash Sunil Katre		
28	28	Akshay Ishwarsingh		
29	29	Amit Namdeo Parbate		

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30	30	Amol Haridas Sapate		
31	31	Ashish Subhash	Prof. Trupti Gajbhiye	Brushless DC Motor Driver
32	32	Avinash Ramesh		
33	33	Chetan Namdeo		
34	34	Darwin Yadao		
35	35	Dikshant Ashwin Patil		
36	36	Durgadas Tulshiram		HVDC Power Supply Design
37	37	Gajendra Jaydeo		
38	38	Ganesh Ashokrao Burile		
39	39	Gaurav Vijay Singh		
40	40	Gyanesh		
41	41	Kalyan Bhimrao		Micro Inverter Electrical Project
42	42	Manish Hira Lonare		
43	43	Manoj Kumar Umendra		
44	44	Mohammad Nasir		
45	45	Nandkumar Rameshwar		
46	46	Nikhil Naresh	Prof. Yogesh Likhar	Automatic Anchor Light
47	47	Pawan Yuvrajji		
48	48	Pranav Sureshrao Yeole		
49	49	Rahul Manohar Varma		
50	50	Remo Anthony Francis		
51	51	Rishabh Rajesh Fulzele		High-Impedance Audio Buffer With JFET
52	52	Ritik Rajeshwar Gedam		
53	53	Sanghpriy Vinod		
54	54	Saurabh Anil		
55	55	Saurabh Diwakar Dhoke		PIN Diode-Based Fire Sensor
56	56	Shaffan Iqbal Shaikh		
57	57	Shantanu Sheshrao		
58	58	Siddhant Ashok Dongre		
59	59	Smitesh Toshak Fate		
60	60	Sumit Kailasrao Kathe		
61	61	Surendra Raju Kasdekar		

Prof.Akshay Pillewan
Mini Project Incharge

Prof.R.M.Bhombe
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Department of Electrical Engineering
Session:2020-2021

NOTICE

Date: 18/3/2021

All the students of B.E IIIrd and Vth semester EE are hereby informed that their seminar of mini project is scheduled on 25/3/2021 . All are requested to check synopsis and PPTs of presentation from their respective Guide till 22/3/2021.

Time :
IIIrd sem 11.00 am onwards
Vth sem 2.00 pm onwards

Prof. Diksha Khare
Mini –Poject Incharge

Prof. Rajendra Bhombe
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Department of Electrical Engineering

Session 2020-21 (EVEN)

Semester: VI SEMESTER (CBCS) (Regular)

Mini Project

Notice

All the students of 2nd year are here by informed that to submit your mini project on **2nd April 2021, in** Proper way.

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Department of Electrical Engineering

Session 2021-2022 (EVEN)

Semester: IV & VI SEMESTER (CBCS) (Regular)

Mini Project

Date-16/03/2022

Notice

All the students of 2nd & 3rd year are here by informed that to submit the topic for mini project up to on 5th April 2022 . at 5.00 pm ,should submit their name to respective subject teachers .

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DEPARTMENT OF ELECTRICAL ENGINEERING
Session 2021-22 (EVEN)

MINI PROJECT

IV Semester

Sr.No.	Name of Students	GUIDE NAME	Name Of Topic
1	Sahil Dharmendra	Prof. Ankita Bhimgade	PIR Motion Sensor System
2	Shubhm Gajanan Kale		
3	Vrushabh Suresh Hende		
4	Pankaj Ramesh Gujwar		
5	Sagar Subhash		
6	Chetan Indrajit Jenekar		
7	Rupalee Sunil Meshram		
8	Vishakha Madam		
9	Rahul Khushal Mohurle		
10	Adesh Vinodrao Lunge		
11	Shailesh Purushottam		Laser Alarm System
12	Dipakkumar Balkrushna		
13	Bhutada Prasad Mohan		
14	Ganphade Akshay		
15	Dipak Ratnakar Bankar		
16	Nikesh Tatwaraj		
17	Vasant Shriniwas		
18	Isha Dipakrao Dhumal		
19	Ritik Raju Fulzele		Water Level Sensor
20	Sruti Suresh Gujwar		
21	Sneha Manohar Walke		
22	Vaishnavi Ganesh Bisen		
23	Javed Akhtar Mohd		
24	Hrutuja Rajesh Chikate		
25	Shamsh Altamash		
26	Vinayak maharudra		Lamp Tester
27	Md Arshad Sharrif		
28	Vikas Dnyaneshwar		
29	Priyanshi Gulabchand Sahu		
30	Akshay Raosaheb Ingale		Obstracle

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30	Akshay Raosaheb Ingale		Obstracle Detention Using IR System
31	Siddhant Santosh		
32	Girghuse Akash Suresh		
33	Paikrao Sumit Jaykumar		
34	Jitendra Vinod Nemade	Prof. Yogesh Likhar	Urbon Illumination Smart LDR Street Lighting
35	Shashwat Babarao		
36	Abhijit Janrao Irpati		
37	Lalita Ramesh Patle		
38	Khizar Khan Ashfaque		
39	Vedant Gopalrao Bokey		
40	Ganesh Venkanna		
41	Tauseef Raza Hayat		
42	Ankita Laxmichand		
43	Puja Vyankatesh		Time delay relay circuits using SSS Timer IC
44	Gayatri Dnyaneshwarji		
45	Chetan Chandrabhan		
46	Vishal Rambhau		
47	Awais Khan Hameed		
48	Divya Eknath Ade		
49	Sneha Virendra Parbat		
50	Aditya Kamlakar Hedau		
51	Rode Prafulla Gajanan		
52	Dhawal Ramprakash	Prof. Akshay Pillewan	Design and implementation of a clap switch circuit using IC 4017
53	Rohit Ashok Vaidya		
54	Bharat Babarao Ingole		
55	Dnyaneshwari Pundlik		
56	Suraj Nagsen Lohale		
57	Vishnu Gautam Lathkar		
58	Pratiksha Sheshrao		
59	Pratik Raju Dhole		
60	Prachita Nanaji Madekar		• Smart Burglar Alarm
61	Manish Rajkumar		
62	Yash Vinod Pendam		
63	Dhiraj Mohan Mothankar		

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64	Vaibhav Sudhakar		• Auto Water Pump
65	Pratik Shivaji Wankhede		
66	Rohit Rambhau Rajuke	Prof. Akshay Pillewan	• Peizo Based Visitor Sensing Welcome Mat
67	Kamlesh Rajaram		
68	Hitesh Khushal Saneshwar		
69	Amit Dhanraj Manware		
70	Akash Eknath Raut		• Power Efficient Mini Inverter Project
71	Darshan Ramesh Petkule		
72	Ambika Hari Nanwatkar		
73	Shraddha Sudhir		
74	Pallavi Prabhakarrao		
75	Ujwal Vijay Bhaisare		
76	Akash Devidas Sawant	Prof. Ishiota Dupare	• Fire Detection and Alarm Mini Project
77	Payal Ashok Dhok		
78	Abhishek Raju Bansod		
79	Karishma Kishorrao		
80	Aniket Lahanu Chauhan		
81	Vijay Baliram Gaikwad		
82	Sumit Charandas Kanekar		
83	Pravin Surajlal Vaidya		
84	Jiganesh Indresh Prajapati		Automated Smoking Zone Monitoring & Alerting P
85	Shivam Khuslal Sakore		
86	Shubham Shyam Rokade		
87	Utkarsh Vinayak Turankar		
88	Nikita Khokan Paul		
89	Yash Suresh Astunkar		
90	Vaibhav Vilas Bhakare		
91	Ashika Mahadeo Thakare		• Smart Portable Cell Phone Jammer Project
92	Snehal Lachanna Gade		
93	Yogeshwar Namdeo Lode		
94	Kiran Suresh Kapgate		
95	Chaitanya Sanjay		
96	Suraj Prakash Bhaware		
97	Sajil Ashok Rambhade		

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98	Akash Rajesh Tiwari		• Solar Battery Charging With Reverse Current Protection
99	Khushbu Tekeshwar		
100	Goyal Satish Kale		
101	Sourabh Raju Kokewar		
102	Ashish Anil Sarode		
103	Sagar Rajesh Hivrale		
104	Shubham Narayan	Prof. Pallavi Barekar	• Automated Night Lighting System
105	Humesh Lobhaji		
106	Jiwan Santosh Dukare		
107	Prince Zankalal Patle		
108	Godavari Shrikrushna		
109	Sanket Prakashrao		
110	Chetan Dilip Hedau		
111	Ananta Ashok Kudegave		
112	Manoj Vitthalrao Hingwe		
113	Mukesh Manohar		• Wireless AC Power Detector. Project
114	Punam Jiyalal Thakare		
115	Gaurav Jeevanrao Jichkar		
116	Aakif Saad Khan		
117	Vivek Ashokrao Zade		
118	Rina Shankar Behniya		
119	Vedant Krushna Satpute		
120	Yogini Changdeo		
121	Sagar Chandrashekhar		
122	Hitesh Yogendra Mandpe		• Short Circuit Indicator Project
123	Shekhar Digambar Kawale		
124	Rupesh Sanjivkumar Kore		
125	Shubham Sheshrao		
126	Sahil Pramod Ukey		
127	Vinay Keshao Govindwar		
128	Priya Rahul Shahare		
129	Shubham Tushartayade		
130	Pratik Prabhakar		
131	Rupam Raghoba Fulzele		
132	Chandu Themaji Thikare		• Driver Anti

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133	Aniket Rajendrataywade		Sleep Device
134	Sonali Ashok Raut		
135	Tushar Dilip Rathod		

Prof.Pallavi Barekar
Class Incharge

Prof.R.M.Bhombe
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DEPARTMENT OF ELECTRICAL ENGINEERING
Session 2021-22 (EVEN)

Mini Project

VI Semester

Sr.No.	Name of Students	Name of Guide	Name of Project
1	Achal Rupchand Wadbudhe	Prof.Trupti Gajbhiye	Plus-Minus 5V Supply From 9V Battery
2	Arti Dinesh Khambalkar		
3	Bhavika Nilkanth Shende		
4	Bhushan Vishnu Murodiye		
5	Ojasvi Sanjay Burande		
6	Pallavi Deorao Ghonge		Infrared Motion-Sensing Relay Switch
7	Pooja Diliprao Shende		
8	Poonam Rajesh Gedam		
9	Punam Chandrabhan Mahure		
10	Rakhibai Keshorao Patle		
11	Sadhana Sovindas Bisen	Prof. Pallavi Chafle	Low-cost LPG Leakage Detector
12	Shreya Sangam Kapse		
13	Shweta Bapurao Randkhe		
14	Shweta Kiranrao Ghatole		
15	Sushma Rajendra Mendhe		
16	Vaishnavi Raju Madankar		Auto Power Switching Mains, Solar Inverter, or Generator
17	Vandana Shobharam Mohankar		
18	Yogita Tejram Ukey		
19	Ajinkya Jankidas Mate		
20	Akhil Hiralal Chhanikar		
21	Ankit Upasrao Kawadkar	Prof. Akshay Pillewan	Signal Generator and Inverter Using NE555 Timers
22	Arjun Sheshrao Deshmukh		
23	Badal Somaji Rangari		
24	Bhagwat Dinesh Devsarkar		
25	Chetan Wasudeo Ambagade		
26	Deepak Chamanlal Pache		Configurable RS232 to TTL to I2C Adapter
27	Dhammanand Prabhudas Mohod		
28	Gajanan Santosh Gahule		
29	Ganesh Ramrao Bhandarwad		
30	Gaurav Sheshrao Dakhare		

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31	Gaurav Sudhir Madekar	Prof. Yogesh Likhar	Vibration Activated Smart CRO Probe
32	Harshal Pandurang Jaiwar		
33	Jitesh Kashinath Gharpure		
34	Kirtesh Prabhakar Satpute		
35	Mahesh Raju Verma		
36	Mahesh Dilip Musale		4 Channel Multi-mode Audio Amplifier
37	Mayur Rajendra Bhakte		
38	Milind Kuldeep Gadling		
39	Mohit Suresh Gudadhe		
40	Nikhil Madhukar Bhalerao		
41	Niraj Shripad Nile	Prof. Abhay Satmohankar	Design and analysis of single-stage amplifier using C++
42	Prasad Shridhar Tembhurnikar		
43	Pritam Sanjayrao Chaple		
44	Purvendra Wasudeo Kasdekar		
45	Rahul Kiran Warke		
46	Rajat Madhukar Kuthe		Four-channel Video and Audio Sequencer
47	Ravindra Vinayak Hole		
48	Rugwed Shivshankar Tembhare		
49	Sahil Purushottam Tale		
50	Sanket Pravin Gund		
51	Sarvan Narayan Gour	Prof. Ankush Kosare	Automated USB-controlled Power Switch
52	Satish Arvind Dudhe		
53	Saurabh Gopal Khujnare		
54	Shubham Madhavrao Rajepwad		
55	Shubham Ramchandra Mathurkar		
56	Sujit Murlidhar Bhoyar		
57	Sumit Wasudeo Bhoyar		1kW Sine Wave Inverter
58	Suraj Vijayrao Lekurwale		
59	Vaibhav Dhaondu Mamtkar		
60	Vilas Dhuplal Mahure		
61	Vivek Surajlal Sahare		
62	Waqar Ahmad Mumtaz Nazeer Ali		

Prof.Akshay Pillewan
Mini Project Incharge

Prof.R.M.Bhombe
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Department of Electrical Engineering
Session:2021-2022

NOTICE

Date: 18/4/2022

All the students of B.E III[rd] and V[th] semester EE are hereby informed that their seminar of mini project is scheduled on 25/4/2022 . All are requested to check synopsis and PPTs of presentation from their respective Guide till 22/4/2022.

Time :
III[rd] sem 11.00 am onwards
V[th] sem 2.00 pm onwards

Prof. Akshay Pillewan
Mini –Poject Incharge

Prof. Rajendra Bhombe
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Department of Electrical Engineering

Session 2021-2022 (EVEN)

Semester: IV & VI SEMESTER (CBCS) (Regular)

Mini Project

Notice

All the students of 2nd & 3rd year are here by informed that to submit your mini project on **2nd May 2022, in** Proper way.

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Guru Nanak Institute of Engineering And Technology

Dahegaon,Kalmeshwar Road,Nagpur-4415001

Department of Second-Year

Session 2021-2022

A Mini Project Work

Submitted to Department of B.Tech Second Year GNIET,Nagpur

On

Laser Alarm System

Submitted by

Shailesh Purshottam

Dipakkumar Balkrushna

Mohan Prasad

Akshay Ganfade

Dipak Ratnakar

Nikesh Tatwaraj

Under the guidance of–

Prof.Ankita Bhimgadge

Assistant Professor,

Electrical Department

GNIET Nagpur

Vice Principal & HOD

Prof.Rajendra Bhombe

Principal
Guru Nanak Institute of Engineering & Technology Nagpur-441501

CERTIFICATE

Forwarded here with "Laser Alarm System" by Shailesh Purshottam,Dipakkumar Balkrushna,Mohan Prasad,Akshay Ganfade,Dipak Ratnakar,Nikesh Tatwaraj, a students of this college in fulfillment of the requirement for the mini project of B.Tech. Electrical Engineering in Faculty of Engineering & Technology, Rashtrasant Tuckdoji Maharaj Nagpur University, Nagpur, Maharashtra, India.

Co-ordinateby:-

Prof. Ankita Bhimgadge

VicePrincipal&HOD

Prof.RajendraBhombe

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INDEX

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Aim:-LaserAlarmSystem

The circuit presented here is a project of a LASER SECURITY ALARM using LDR (Light Dependent Resistor)on PCB.A laser system operates by projecting a beam of invisible laser light across a doorway or window opening. When the light is broken,it activates a buzzer or alarm.The principles are very similar to those of lower-tech burglar alarms. A laser alarm requires only slightly more sophisticated electronics and can be put together by anyone with a soldering gunanda knackfor tinkeringwithbasiccircuits andtransistors. This systemfor security uses a combination of LASER light, LDR module has an onboard potentiometer to adjust the sensitivity of LDR so that it only senses laser light falling on it.

ComponentsRequirements:-

- NPN Transistor BC547
- LED
- LDR(Light Dependent Resistor)
- Resistor(100kohm)
- GeneralPCB
- BreadBoard

Procedure:-

1. Take the bread board and mark its two extreme sides,one as positive and the other as negative

2. Use the circuit diagram and make the connection as follows.

3. Punch in the transistor on the bread board.

4. Connect the emitter of the transistor with the negative side of the bread board using a wire.

5. Connect the LDR with the base of the transistor and the negative side of the breadboard.

6. Connect the buzzer with the collector of the transistor and the positive side of the bread board.

7. Now connect the 10k ohm resistor with the base of the transistor and the positive side of the breadboard.

8. Now connect the battery and at this time the buzzer will be ringing.

9. Now drop the laser light up on the receptive surface of the LDR and the buzzer stops ringing.

Working:-

This circuit is based on LDR (Light dependent Resistor), a variable resistor in which the resistance varies according to the light intensity falling on it.

➢ The LDR and resistor RI form a potential divider network, which is the main part of our security alarm circuit.

➢ Wealreadyabouthowatransistoractsasaswitch,thesameprincipleisused here, The voltage drop across the LDR is used to drive the transistor or switch. Whenthevoltagedropisabovethecut-involtage(0.6V),thetransistoristurned on.

➢ LDR has low resistance (m "ohm" range) in the presence of light and high resistance (M "ohm" range) in the absence of light.

➢ In our security alarm, a LASER light is allowed to fall the LRD continuously using 3 mirrors (see the project arrangement figure).

➢ Light from other sources should not be allowed to fall on the LRD, so place the LRD in a box with a single hole to pass the LASER.

➢ Inthissituation,theresistanceofferedbyLRDistoolow,sincetheLASERlight is continuously allowed to fall on the LRD surface.

➢ Thus, the voltage drop across the LRD is also law [V-IR (ohm's law)] which is insufficient to turn ON the transistor, so the transistor remains in OFF state.

Whenaperson(Thief)makesablocktothecontinuousflowoftheLASERbeam, thenthelight fallingontheLRDgetsblocked.Thus,itsresistanceincreasestoa high value in the order of the M ohm range (According to Ohm's law V=IR.

➢ While resistance increases the voltage drop also increases,when this voltage drop exceeds the cut in voltage of the silicon NPN transistor(2N7000),it will turn

on.Then current fromVstarts flowing to the ground via the buzzer and transistor, which makes the beep sound.

➤The beeps ound from the security alarm gives an indication of some security failures.

Application:-

1. This component and concept can be widely used in the ftdetection techniques.

2. This concept can be used as a laser security lock working.

3. It is very useful for security and easily applicable.

Result:-

A laser security alarm has been tested successfully on a breadboard.The circuit Is working properly as per the requirement and is implemented on adotted PCB.

Bibliography:-

- PRACTICAL ELECTRICAL COMPREHENSIVE–XII
- NCERT TEXTBOOK-XII
- INTERNET

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Department of Electrical Engineering

Session 2022-2023 (EVEN)

Semester: IV & VI SEMESTER (CBCS) (Regular)

Mini Project

Date-16/03/2023

Notice

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Prof.Rajendra Bhombe

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Department of Electrical Engineering

Session 2022-2023 (EVEN)

Semester: IV SEMESTER (CBCS) (Regular)

Mini Project
Section A

Sr. No.	Roll No.	Student Name	Name of project	Name of Guide
1	1	ANITA VINOD MATE	Dual Axis Solar Power Tracker System	Prof.Diksha Khare
2	2	BHARTI RAMESH WAGHMARE		
3	3	DHANSHREE VASANT BHENDE		
4	4	DIVYA CHHATRAPATI THAKUR		
5	5	KARISHMA BANDUJI KHAWSE		
6	6	KOMAL KESHAO BODHANE		
7	7	MANSI ASHOK MALEKAR	5V DC To 48V DC Converter	Prof.Akshay Pillewan
8	8	MUNESHWARI PATIRAM BHELAVE		
9	9	NATASHA PREMKISHOR SINGPURE		
10	10	NIKITA BHAURAO THAKRE		
11	11	PALLAVI BABAN PIMPALKAR		
12	12	PALLAVI BHIMRAO BURANDE		
13	13	POOJA SOHAN CHAUDHARI	Electric Vehicle Battery Charging Solutions	Prof.Manish Agrawal
14	14	PRATIKSHA VIRENDRA KAPSE		
15	15	RUCHIKA PRADIP CHUTE		

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16	16	SAGRIKA VIJAY BELE		
17	17	SAKSHI CHHAGAN KOTAMBE		
18	18	SAMIKSHA GAJANAN SIRSAM		
19	19	SHREYA BANDU NITNAWARE		
20	20	SHUBHANGI ATICHAND PATLE	USB Power Electric Socket	Prof.Swati Gajbhiye
21	21	SMITA DAMODHARRAO GHODMARE		
22	22	SUCHITA DATTA NARSE		
23	23	TEJASWI KESHAORAO BODHANE		
24	24	UJWALA GIRIDHAR DHUMARE		
25	25	VAISHNAVI MANOHAR SATAO		
26	26	VAISHNAVI RAVINDRA BODHE	Make Your Own Energy Meter	Prof. Harshal Gathode
27	27	ADITYA ASHOK BAGHELE		
28	28	AJAY VILAS CHAVHAN		
29	29	AKSHAYKUMAR RAMKISHOR RAUT		
30	30	AMIT OMPRAKASH BAGHELE		
31	31	AMIT PREMDAS GURNULE		
32	32	ANKIT ANIL SHENDE	Joystick-Controlled Industrial Automation System	Prof.Diksha Khare
33	33	ANMOL NANHALAL GAUTAM		
34	34	ARCHISH ARVIND BORKAR		
35	35	ASHISH PRADIP RAHULKAR		
36	36	BHUMENDRA PANNALAL HARINKHEDE		
37	37	CHETAN ATUL KSHIRSAGAR		
38	38	CHETAN SHREEMANT RANE	Brushless DC Motor Driver	Prof.Akshay Pillewan
39	39	CHETANA RAJU BUTE		
40	40	DIPAK RAMPRAKASH YETRE		

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41	41	DNYANESHWAR SANJAY RAUT		
42	42	GAURAV RAJESHWAR DONADE		
43	43	GAURAV SURESH PARTEKI		
44	44	GAURAV WASUDEO MANKAR		
45	45	HARSHAL RAMESH CHACHANE	HVDC Power Supply Design	Prof.Manis Agrawal
46	46	HARSHAL YOGESHWAR DUMBHARE		
47	47	JAYRAJ VYANKATRAO DAKORE		
48	48	KARAN DEWAKAR PADOLE		
49	49	KHATRI ALI BASHEER AHMED		
50	50	KHOMESH RADHESHYAM KATRE		
51	51	KRISHNAKUMAR RUPCHAND LILHARE		
52	52	KRUSHNAKUMAR MAROTI MESHRAM	Micro Inverter	Prof.Swati Gajbhiye
53	53	KUNAL LALCHAND PARDHI		
54	54	LOKESH WASUDEO GOTEFODE		
55	55	LUCKY SUNIL MANMODE		
56	56	MAHENDRA NILAMDAS UPRADE		
57	57	MAHENDRA USHTUJI KOKADE		

Prof. Swati Gajbhiye
Class Teacher

Prof. Rajendra Bhombe
Head of Department

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GURU NANAK INSTITUTE OF ENGINEERING & TECHNOLOGY

Dahegaon, Kalmeshwar Road, Nagpur-441 501

Department of Electrical Engineering

Session 2022-2023 (EVEN)

Semester: IV SEMESTER (CBCS) (Regular)

Mini Project

Section B

Sr No.	Roll No.	Student Name	Name of Project	Name of Guide
1	58	MOHIT UDELAL RAHANGDALE	Automatic Anchor Light	Prof. Harshal Gathode
2	59	MUKESH RUPCHAND RAHANGDALE		
3	60	NIKHIL HEMRAJ GAYDHANE		
4	61	NIKHIL SANJAY KANDGIRE		
5	62	NIKHIL SURDAS TAMGADGE		
6	63	NIRANJANSING SANJAYSING GAWAR		
7	64	NITEEN SURESH KORDE	High-Impedance Audio Buffer With JFET	Prof.Diksha Khare
8	65	NITISH RAMESHWAR TURKAR		
9	66	OMESH GANESH YEOLE		
10	67	PARTHAV PREMSAGAR WATHORE		
11	68	PRAFUL BHAGWAT MESHRAM		
12	69	PRANAY SUMED SANGOLKAR		
13	70	PRAVIN DAMU HATWAR	PIN Diode-Based Fire Sensor	Prof.Akshay Pillewan
14	71	RAHIL SALIM SHEIKH		
15	72	RAKESH DEVNATH VARMA		
16	73	RAKESH GAJANAN HARNE		
17	74	RAKESH GULABCHAND TEMBHARE		

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18	75	RANJITSHRIHARI CHANDANGIRIWAR		
19	76	RITESH ASARAM TALEKAR	Plus-Minus 5V Supply From 9V Battery	Prof.Manis Agrawal
20	77	ROHIT MUKESH KAHATE		
21	78	ROHITKUMAR SHIVKUMAR PANDE		
22	79	RUSHIKESH KISHOR CHANDEKAR		
23	80	SAGAR DINESH NAGARIKAR		
24	81	SAGAR HARISHCHANDRA TURANKAR		
25	82	SAGAR NARENDRA FALAKE	Infrared Motion-Sensing Relay Switch	Prof.Swati Gajbhiye
26	83	SAHIL DHANRAJ RAIKOHAD		
27	84	SAHIL RAMESH TURANKAR		
28	85	SAHIL RASHTRAPAL RAMTEKE		
29	86	SAMEER SURESH PANEKAR		
30	87	SANDIP PURANLAL GIREPUNJE		
31	88	SANKET RAJABHAU DONGRE	Low-cost LPG Leakage Detector	Prof. Harshal Gathode
32	89	SANTOSH PRALHADRAO KALYANKAR		
33	90	SAURABH RAJENDRA RAUT		
34	91	SAURABH RAJKUMAR BAGHELE		
35	92	SEVAK RAMRAO PAWAR		
36	93	SHIVSAGAR RAJHANS DEVHARE		
37	94	SHREYASH PRAKASH BUTLE	Low-Cost Dusk-Dawn Controller	Prof.Diksha Khare
38	95	SHRIKANT NAMDEO LANDGE		
39	96	SHUBHAM KISANA UMREDKAR		
40	97	SHUBHAM RAJKUMAR NAGPURE		
41	98	SOURAV NITARAM BHURE		
42	99	SURAJ BHAURAO SALAME		

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43	100	TEJAS UMESHRAO PAYGHAN	Auto Power Switching Mains, Solar Inverter, or Generator	Prof.Akshay Pillewan
44	101	TEJAS YUVRAJ HINGWE		
45	102	TUSHAR BHASKAR NAGPURE		
46	103	VAIBHAV PREMDAS DUPARE		
47	104	VAIBHAV ZAGDUJI BUDHE		
48	105	VIKAS GIRDHARI BISEN	Signal Generator and Inverter Using NE555 Timers	Prof.Manish Agrawal
49	106	VYANKATESH DIGAMBAR KALYANE		
50	107	YASHKUMAR MAHESHWAR DHOMNE		
51	108	YOGESH BALIRAM PADA		
52	109	ARSHAD MD.MISBHAUDDIN SHARIFF		
53	110	ABHISHEK BHIMRAO SHENDE	Configurable RS232 to TTL to I2C Adapter	Prof.Swati Gajbhiye
54	111	BHAIRAV DOMA CHANDURKAR		
55	112	DARSHAN ANKUSH GABHANE		
56	113	KISHOR RAMESH SOHALIYA		
57	114	PRANITA AMBADAS AREKAR		
58	115	PRITI GAJANAN DHAGE		

Prof. Swati Gajbhiye
Class Teacher

Prof. Rajendra Bhombe
Head of Department

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GURU NANAK INSTITUTE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

SESSION 2022-23 (EVEN)

Semester: VI (SEC-A) SEMESTER (CBS) (Regular)

Mini Project

Sr. No.	Roll No.	Name of Student	Name of Mini Projects	Name of Guide
1	1	AMBIKA HARI NANWATKAR	Password-Based Circuit Breaker	Prof.Diksha Khare
2	2	ASHIKA MAHADEO THAKARE		
3	3	DIVYA EKNATH ADE		
4	4	DNYANESHWARI PUNDLIK BORKUTE		
5	5	GAYATRI DNYANESHWAR BONSULE		
6	6	HRUTUJA RAJESH CHIKATE		
7	7	ISHA DIPAK DHUMAL	Over/Under Voltage Protection of Electrical Appliances	Prof.Akshay Pillewan
8	8	KARISHMA KISHORRAO SATPUDKE		
9	9	KHUSHBU TEKESHWAR PARDHI		
10	10	LALITA RAMESH PATLE		
11	11	MANISHA BABARAO JUMLE		
12	12	NIKITA KHOKAN PAUL		
13	13	PALLAVI PRABHAKARRAO IMANE	DC Panel Meter using Arduino	Prof.Manish Agrawal
14	14	PRACHITA NANAJI MADEKAR		
15	15	PRATIKSHA SHESHRAO KHEDKAR		
16	16	PRIYANSHI DHANIRAM SAHU		
17	17	PUNAM JIYALAL THAKRE		
18	18	SHRADDHA SUDHIR SOMKUWAR		
19	19	SHRUTI AJABRAO GUJWAR	Multi-Status Indicator Using Single RGB	Prof.Swati Gajbhiye
20	20	SNEHA MANOHAR WALKE		

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21	21	SNEHA VIRENDRA PARBAT	LED	
22	22	VAISHANAVI GANESH BISEN		
23	23	VISHAKHA MADAN DANDEKAR		
24	24	YOGINI CHANGDEO KHUBALKAR		
25	25	AAKIF SAAD SAMIULLAH KHAN	Simple Low Power Inverter	Prof. Harshal Gathode
26	26	ABHIJIT JANRAO IRPATI		
27	27	ABHISHEK RAJU BANSOD		
28	28	ADESH VINODRAO LUNGE		
29	29	ADITYA KAMLAKAR HEDAU		
30	30	AKASH DEVIDAS SAWANT		
31	31	AKASH EKNATH RAUT	Power-Saving Relay Driver	Prof.Diksha Khare
32	32	AKASH RAJESH TIWARI		
33	33	AKASH SURESH GIRGHUSE		
34	34	AKSHAY SUBHASH GANPHADE		
35	35	AMIT DHANRAJ MANWARE		
36	36	ANIKET RAJENDRA TAYWADE		
37	37	ARSHAD MD MISBHAUDDIN SHARIFF	Automatic Water Pump Controller	Prof.Akshay Pillewan
38	38	ASHISH ANIL SARODE		
39	39	AWAIS KHAN HAMEED KHAN		
40	40	BHARAT BABARAO INGOLE		
41	41	CHAITANYA SANJAY TEMBHARE		
42	42	CHETAN CHANDRABHAN NAGPURE		
43	43	CHETAN DILIP HEDAU	Mobile Cell Phone Charger	Prof.Manish Agrawal
44	44	CHETAN INDRAJIT JENEKAR		
45	45	DARSHAN RAMESH PETKULE		
46	46	DHAWAL RAMPRAKASH DHENGE		
47	47	DHIRAJ MOHAN MOTHANKAR		
48	48	DIPAK RATNAKAR BANKAR		
49	49	DIPAKKUMAR BALKRUSHNA KATRE	Generate Power	Prof.Swati Gajbhiye

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50	50	GANESH VENKANNA PENDYALA	Using Microturbine	
51	51	GAURAV JEEVANRAO JICHKAR		
52	52	GOYAL SATISH KALE		
53	53	HITESH KHUSHAL SANESHWAR		
54	54	HITESH YOGENDRA MANDPE		
55	55	JAVED AKHTAR MOHD SADIQUE SHAIKH		

Prof. Akshay Pilewan

Class Teacher

Prof. Rajendra Bhombe

Head of Department

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GURU NANAK INSTITUTE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

SESSION 2022-23 (EVEN)

Semester: VI(SEC-B) SEMESTER (CBS) (Regular)

Mini Project

Sr. No.	Roll No.	Name of Student	Name of Mini Projects	Name of Guide
56	56	JIGNESH INDRESH PRAJAPATI	Vibration Activated Smart CRO Probe	Prof.Diksha Khare
57	57	JITENDRA VINOD NEMADE		
58	58	JIWAN SANTOSH DUKARE		
59	59	KHIZAR KHAN ASHFAQUE AHMED KHAN		
60	60	KIRAN SURESH KAPGATE		
61	61	MANISH RAJKUMAR LANDGE		
62	62	MUKESH MANOHAR KELWADKAR	4 Channel Multi-mode Audio Amplifier	Prof.Akshay Pillewan
63	63	NIKESH TATWARAJ KHOBRAGADE		
64	64	PANKAJ RAMESH GUJWAR		
65	65	PRAFULLA GAJANAN RODE		
66	66	PRASAD MOHAN BHUTADA		
67	67	PRATIK SHIVAJI WANKHEDE		
68	68	RAHUL KHUSHAL MOHURLE	Design and analysis of single-stage amplifier using C++	Prof.Manish Agrawal
69	69	ROHIT ASHOK VAIDYA		
70	70	ROHIT RAMBHAU RAJUKE		
71	71	SAGAR RAJESH HIVRALE		
72	72	SAGAR SUBHASH CHANDURKAR		
73	73	SAHIL DHARMENDRA JAWADE		
74	74	SAHIL PRAMOD UKEY		
75	75	SAJIL ASHOK RAMBHADE	Four-channel Video and Audio Sequencer	Prof.Swati Gajbhiye
76	76	SANKET PRAKASHRAO KANEKAR		

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77	77	SHAILESH PURUSHOTTAM KOLTE		
78	78	SHAMSH ALTAMASH MOHD. ALEEM BILEKUDRI		
79	79	SHASHWAT BABARAO DAMBHARE		
80	80	SHEKHAR DIGAMBAR KAWALE		
81	81	SHUBHAM NARAYAN DAMBHAR	Automattic street light controller circuit using relays and LDR	Prof. Harshal Gathode
82	82	SHUBHAM SHESHRAO HUKUM		
83	83	SHUBHAM SHYAM ROKADE		
84	84	SHUBHAM TUSHAR TAYADE		
85	85	SHUBHM GAJANAN KALE		
86	86	SIDDHANT SANTOSH SEVAIWAR		
87	87	SNEHAL LACHANNA GADE	1kW Sine Wave Inverter	Prof.Diksha Khare
88	88	SOURABH RAJU KOKEWAR		
89	89	SUMIT CHARANDAS KANEKAR		
90	90	SUMIT JAYKUMAR PAIKRAO		
91	91	SUMIT NATTHULAL BASIWAR		
92	92	SURAJ NAGSEN LOHALE		
93	93	SURAJ PRAKASH BHAWARE	Four Frequency Generator	Prof.Akshay Pillewan
94	94	TAUSEEF RAZA HAYAT KHAN		
95	95	TUSHAR DILIP RATHOD		
96	96	UJWAL VIJAY BHAISARE		
97	97	UTKARSH VINAYAK TURANKAR		
98	98	VAIBHAV VILAS BHAKARE		
99	99	VASANT SHRINIWAS NADIGOTA	Programmable 3-Phase Controller	Prof.Manish Agrawal
100	100	VEDANT GOPALRAO BOKEY		
101	101	VEDANT KRUSHNA SATPUTE		
102	102	VIJAY BALIRAM GAIKWAD		
103	103	VIKAS DNYANESHWAR KALAMBE		
104	104	VINAYAK MAHARUDRA SWAMI		
105	105	VISHNU GAUTAM LATHAKAR		

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77	77	SHAILESH PURUSHOTTAM KOLTE		
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80	80	SHEKHAR DIGAMBAR KAWALE		
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82	82	SHUBHAM SHESHRAO HUKUM		
83	83	SHUBHAM SHYAM ROKADE		
84	84	SHUBHAM TUSHAR TAYADE		
85	85	SHUBHM GAJANAN KALE		
86	86	SIDDHANT SANTOSH SEVAIWAR		
87	87	SNEHAL LACHANNA GADE	1kW Sine Wave Inverter	Prof.Diksha Khare
88	88	SOURABH RAJU KOKEWAR		
89	89	SUMIT CHARANDAS KANEKAR		
90	90	SUMIT JAYKUMAR PAIKRAO		
91	91	SUMIT NATTHULAL BASIWAR		
92	92	SURAJ NAGSEN LOHALE		
93	93	SURAJ PRAKASH BHAWARE	Four Frequency Generator	Prof.Akshay Pillewan
94	94	TAUSEEF RAZA HAYAT KHAN		
95	95	TUSHAR DILIP RATHOD		
96	96	UJWAL VIJAY BHAISARE		
97	97	UTKARSH VINAYAK TURANKAR		
98	98	VAIBHAV VILAS BHAKARE		
99	99	VASANT SHRINIWAS NADIGOTA	Programmable 3-Phase Controller	Prof.Manish Agrawal
100	100	VEDANT GOPALRAO BOKEY		
101	101	VEDANT KRUSHNA SATPUTE		
102	102	VIJAY BALIRAM GAIKWAD		
103	103	VIKAS DNYANESHWAR KALAMBE		
104	104	VINAYAK MAHARUDRA SWAMI		
105	105	VISHNU GAUTAM LATHAKAR		

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Dahegaon, Opp.RK Petroleum, Kamptee Road, Nagpur - 441501, Ph. 07113-661460
Website: www.gnit.ac.in, E-mail: gnitnagpur@gmail.com

Department of Electrical Engineering
Session:2022-2023

NOTICE

Date: 18/4/2023

All the students of B.E III[rd] and V[th] semester EE are hereby informed that their seminar of mini project is scheduled on 25/4/2023 . All are requested to check synopsis and PPTs of presentation from their respective Guide till 22/4/2023.

Time :
III[rd] sem 11.00 am onwards
V[th] sem 2.00 pm onwards

Prof. Akshay Pillewan
Mini –Poject Incharge

Prof. Rajendra Bhombe
HOD,EE

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(NAAC Accredited)

Department of Electrical Engineering

Session 2022-2023 (EVEN)

Semester: IV & VI SEMESTER (CBCS) (Regular)

Mini Project

Notice

All the students of 2nd & 3rd year are here by informed that to submit your mini project on **2nd May 2023, in** Proper way.

Prof.Rajendra Bhombe

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GURU NANK INSTITUTE OF ENGINEERING AND TECHNOLOGY

NAGPUR-441501

AcademicYear-2022-2023

DEPARTMENT OF ELECTRICAL ENGINEERING

A
Project
Report
On

Automatic Street Light Controller Circuit Using Relays and LDR

Submitted By:-

Shubham Dambhar
Shubham Hukam
Shubham Tayade
Shubham Kale
Shidhant Sewaiwar

Prof. Diksha Khare
Mini Project Guide

Prof. Rajendra Bhombe
HOD

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CERTIFICATE

Forwarded here with "Automatic Street Light ControllerCircuit Using Relays and LDR" by ShubhamDambhar,ShubhamHukam,ShubhamTayade, Shubham Kale,Shidhant Sewaiwar

Students of this college in fulfillment .

The requirement for the mini project of B.Tech .Electrical Engineering in faculty of Engineering & Technology,Rashtrasant Tuckdoji Maharaj Nagpur University,Nagpur, Maharashtra, India.

Prof.Diksha Khare
Mini Project Guide

Prof. Rajendra Bhombe
HOD

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Title: Automatic Street Light Controller Circuit Using Relays and LDR

Abstract:

This paper introduces an automatic street light controller circuit utilizing Light Dependent Resistors (LDRs) and relays for efficient and environmentally friendly management of street lighting. The circuit operates by detecting changes in ambient light levels through the LDR, triggering the switching mechanism via transistors and relays to control the street lights based on natural lighting conditions.

Introduction:

The introduction section provides an overview of the significance of street lighting, the conventional methods of street light control, and the need for more energy-efficient and automated solutions. It briefly introduces the proposed automatic street light controller circuit using relays and LDRs.

Problem Statement:

This section delves into the issues associated with traditional street light control systems, such as energy wastage due to constant operation regardless of ambient light conditions, lack of adaptability to changing environmental factors, and increased maintenance costs.

Significance of the Project:

Here, the importance of implementing an automatic street light controller circuit is discussed, highlighting its potential to conserve energy, reduce operational costs, minimize light pollution, and enhance overall sustainability.

Project Proposed:

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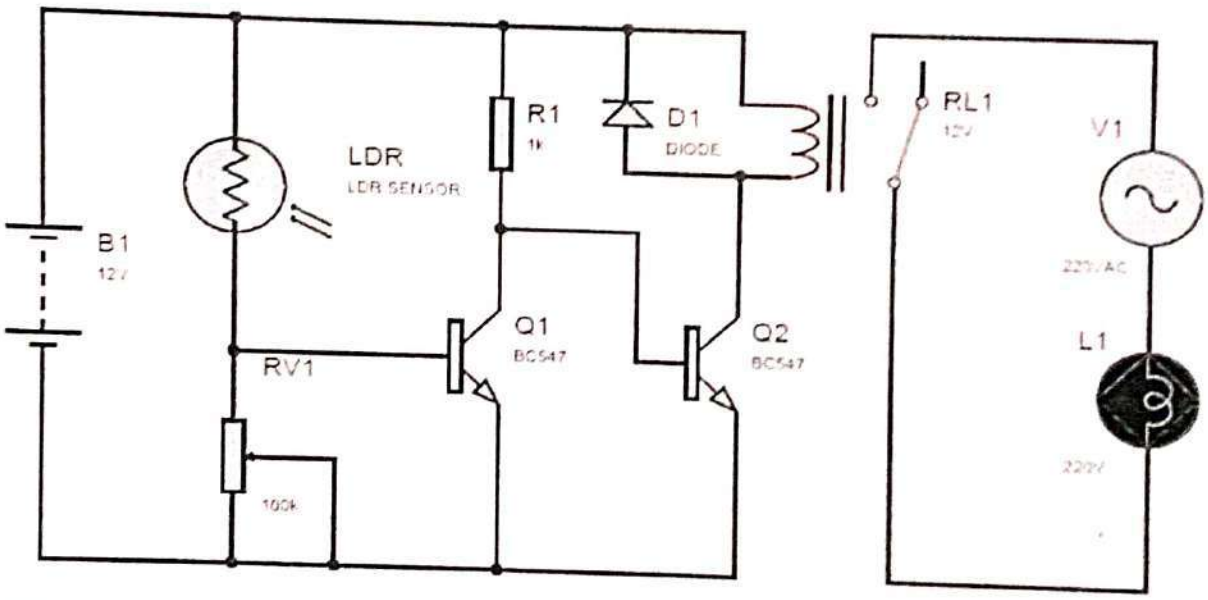
The project proposed section outlines the design and functionality of the automatic street light controller circuit using relays and LDRs, detailing its components, operation principles, and expected outcomes.

Aim and Objective:

This section articulates the primary aim of the project, which is to develop a cost-effective and efficient solution for street light control, along with specific objectives such as achieving energy savings, improving lighting efficiency, and enhancing reliability.

Circuit Diagram:

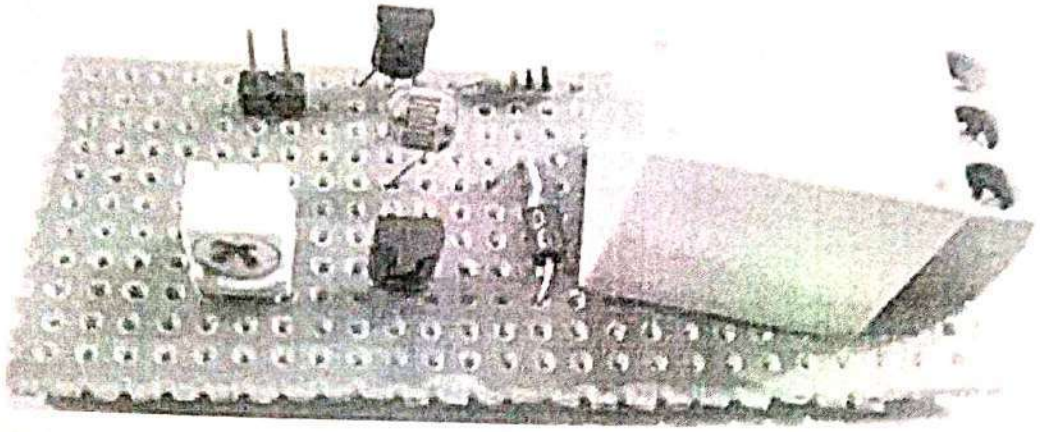


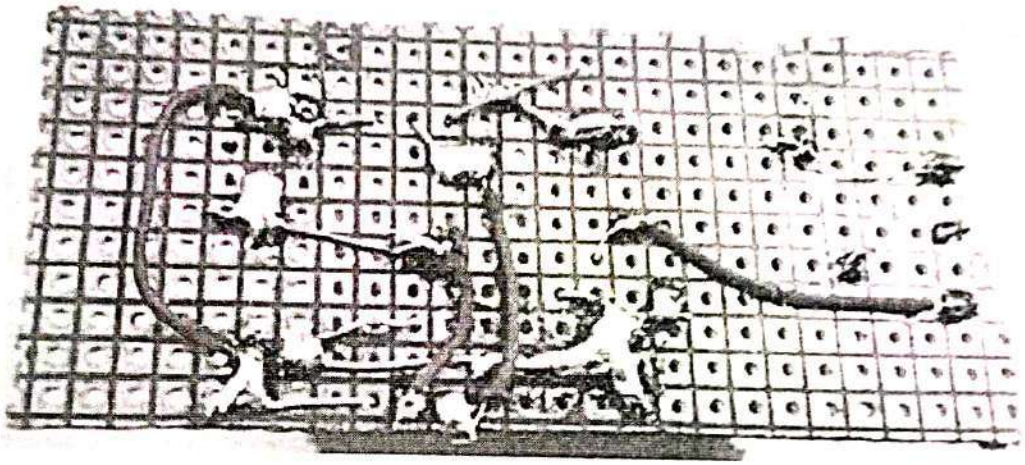
What is LDR?

LDRs are made from semiconductor materials to enable them to have their light sensitive properties. There are many types but one material is popular and it is cadmium sulphide (CdS). These LDRs or PHOTO REISTORS works on the principle of "Photo Conductivity". Now what this principle says is, whenever light falls on the surface of the LDR (in this case) the conductance of

the element increases or in other words the resistance of the LDR falls when the light falls on the surface of the LDR. This property of the decrease in resistance for the LDR is achieved because it is a property of semiconductor material used on the surface.

In this project, we have used an **LDR (Light Dependent Resistor)** which is responsible for detecting light and darkness. The resistance of LDR increases in darkness and reduces in presence of light. This circuit is same as a Dark Detector or Light Detector Circuit. only here we have replaced simple LED with a AC load, using a Relay. Two BC547 NPN transistors are used to drive the relay.





Whenever light falls over LDR its resistance get decreased and transistor Q1 turns ON and collector of this transistor goes LOW, and this makes the second transistor turns OFF due to getting a LOW signal at its base, so relay also remain turned OFF due to second transistor.

Now **whenever LDR senses Darkness,** mean no light, then transistor Q1 turned ON due to increase in the resistance of LDR which is responsible for voltage drop at the base of Q1. Due to a LOW signal at the Q1 base, Q2 transistor gets a HIGH signal from the collector of Q1 and turns ON the relay.

Relay turned ON the AC load that is connected to relay. A 10K pot is also used for setting up the sensitivity of the circuit.

Component List:

5V Relay

9V Battery

BC547 Transistor

Light Dependent Resistor (LDR)

1k Resistor

220 ohm Resistor

100k Potentiometer

Bulb Wire Holder (2-pin)

Zero PCB (Printed Circuit Board)

Components specification:

5V Relay:

- Voltage Rating: 5V DC
- Contact Rating: Typically 10A @ 250V AC
- Coil Resistance: Varies depending on the specific relay model
- Contact Configuration: Single pole, single throw (SPST) or single pole, double throw (SPDT)

- Dimensions: Varies depending on the relay model

9V Battery:

- Voltage Rating: 9V DC
- Chemistry: Typically alkaline or lithium
- Capacity: Varies depending on the specific battery model
- Dimensions: Standard 9V battery size (e.g., 48.5mm x 26.5mm x 17.5mm)

BC547 Transistor:

- Type: NPN Bipolar Junction Transistor (BJT)
- Maximum Collector-Base Voltage: 45V
- Maximum Collector Current: 100mA
- Power Dissipation: 500mW
- Package: TO-92 or similar
- Gain (hFE): Typically around 200–450

Light Dependent Resistor (LDR):

- Resistance Range: Typically in the range of several hundred ohms to several megaohms (varies based on light intensity)
- Dark Resistance: Higher resistance in darkness
- Light Resistance: Lower resistance in light
- Response Time: Typically in the range of milliseconds to seconds
- Spectral Response: Varies depending on the material composition
- Dimensions: Varies depending on the specific LDR model

1k Resistor:

- Resistance: 1 kilohm (±5% tolerance)
- Power Rating: Typically 1/4 Watt
- Type: Carbon Film or Metal Film
- Dimensions: Standard resistor size (e.g., 6.3mm x 2.5mm)

220 ohm Resistor:

- Resistance: 220 ohms (±5% tolerance)
- Power Rating: Typically 1/4 Watt
- Type: Carbon Film or Metal Film
- Dimensions: Standard resistor size (e.g., 6.3mm x 2.5mm)

100k Potentiometer:

- Resistance: 100 kilohms (±10% tolerance)
- Power Rating: Typically 0.1 Watt
- Type: Linear taper
- Dimensions: Standard potentiometer size (e.g., 16mm or 24mm diameter)

Bulb Wire Holder (2-pin):

- Material: Typically made of insulating plastic or ceramic
- Connector Type: 2-pin screw terminal or similar
- Dimensions: Varies depending on the specific holder model

Zero PCB (Printed Circuit Board):

- Material: Typically made of fiberglass-reinforced epoxy laminate (FR-4)
- Thickness: Standard PCB thickness (e.g., 1.6mm)

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- Copper Thickness: Typically 1oz (35µm) or 2oz (70µm) copper weight
- Layers: Single-sided or double-sided (with plated through-holes if applicable)
- Dimensions: Varies depending on the specific PCB design and application

Methodology:

The methodology section describes the step-by-step process involved in designing, assembling, and testing the automatic street light controller circuit. It includes circuit diagrams, component specifications, and experimental procedures.

Advantages:

Enumerates the advantages of the proposed automatic street light controller circuit, such as energy efficiency, reduced maintenance requirements, enhanced safety, and environmental friendliness.

Disadvantages:

Acknowledges any potential drawbacks or limitations associated with the automatic street light controller circuit, such as initial installation costs, susceptibility to environmental factors, and technical complexities.

Applications:

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Explores the various applications of the automatic street light controller circuit beyond street lighting, including parking lots, garden illumination, pathway lighting, and public spaces.

Future Scope:

Discusses potential enhancements and extensions to the current project, such as integrating advanced sensors for improved light detection, incorporating wireless communication for remote monitoring and control, and adapting the circuit for smart city initiatives.

Results:

Presents the results of experimental testing and validation of the automatic street light controller circuit, including energy savings achieved, lighting performance comparisons, and operational reliability.

Conclusion:

Summarizes the key findings and insights gained from the project, reiterating its significance in the context of energy conservation, sustainability, and urban infrastructure management.

References:

"Design and Implementation of Automatic Street Light Control System using LDR Sensor." International Journal of Advanced Research in Computer Engineering & Technology (IJARCET), Volume 4 Issue 4, April 2015.

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