##### SWITCH OFF DEVICES WHEN NOT IN USE

##### A MINI-PROJECT REPORT

###### ***Submitted by***

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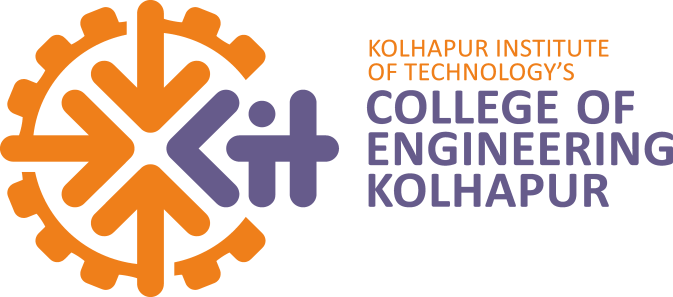
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***in partial fulfillment for the award of the degree of***

##### Bachelor of Technology

IN

CSE



# KOLHAPUR INSTITUTE OF TECHNOLOGY’S

# COLLEGE OF ENGINEERING (AUTONOMOUS), KOLHAPUR

**CERTIFICATE**

This is to certify that the Project report entitled, “**SWITCH OFF DEVICES WHEN NOT IN USE”** submitted by, in partial fulfillment for the award of the degree of **B.Tech** in **CSE** at KIT’s College of Engineering, Kolhapur, Maharashtra, INDIA, is a record of his / her own work carried out under my / our supervision and guidance.

**SIGNATURE SIGNATURE**

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**DECLARATION**

I hereby declare that the Project entitled, “**SWITCH OFF DEVICES WHEN NOT IN USE"**submitted to KIT’s College of Engineering, Kolhapur, Maharashtra, INDIA in the partial fulfillment of the award of the Degree of **B.Tech** in **CSE** is a bonafide work carried out by me. The material contained in this Project has not been submitted to any University or Institution for the award of any degree.

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**ACKNOWLEDGEMENT**

We would like to express our special thanks of gratitude to our project guide Mr.Mahesh Salunkhe sir as well as our HOD Dr.Lingraj Hadimani who gave us the golden opportunity to do this wonderful project on the topic “Swich off devices when not in use”, which also helped us in doing a lot of research and we came to know about so many new things we are really thankful to them.

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INTRODUCTION

The utilization of electrical devices, such as tubelight,fans in educational settings like classrooms and laboratories contributes significantly to energy consumption. However, these devices often remain powered on even when not in active use, leading to unnecessary energy wastage. The "Switch Off Devices When Not in Use" project aims to send message to power off idle devices in classrooms and labs.

Unlike traditional methods that rely on manual reminders and periodic checks, this project utilizes sensors and automated systems to detect instances of energy waste, such as devices left powered on unnecessarily. By sending targeted messages only when energy waste occurs, the system prompts users to switch off devices and actively participate in energy conservation efforts. This proactive approach not only addresses the challenge of energy wastage more effectively but also fosters a culture of sustainability and responsibility among students, faculty, and staff.

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**PROBLEM STATEMENT**

The problem with the current setup is that devices in classrooms are often left running when no one is using them, leading to unnecessary energy consumption. Despite efforts to remind people to switch off these devices, forgetfulness or negligence often leads to continued energy wastage. This not only results in higher electricity bills for schools but also has a negative impact on the environment due to increased carbon emissions. Additionally, the funds spent on wasted energy could be better utilized for educational resources. Thus, there is a need for a more effective solution to address this problem and promote responsible energy usage in classrooms.

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**PROJECT SCOPE**

The scope of the project involves implementing a system that detects and sends messages only when energy waste occurs in classrooms, targeting devices left on unnecessarily. By focusing on reducing energy wastage through targeted messaging, the project aims to promote responsible energy usage and ultimately achieve significant energy savings.

1. **Detect Energy Waste**: The project focuses on detecting instances when devices are left on unnecessarily in classrooms, leading to energy wastage.
2. **Send Targeted Messages**: It involves sending messages only when energy waste occurs, reminding users to switch off devices and conserve energy.
3. **Promote Responsible Energy Usage**: By targeting instances of energy waste and sending reminders, the project aims to promote responsible energy usage habits among students, faculty, and staff.
4. **Achieve Energy Savings**: Ultimately, the goal is to achieve significant energy savings by reducing instances of energy wastage in classrooms.
5. **Potential for Expansion**: There's potential to expand the project beyond classrooms to other areas of the school, maximizing its impact on energy conservation efforts campus-wide.

**Existing System**

The existing system for the "Switch Off Devices in Classroom When Not in Use" project primarily involves manual methods and reminders to encourage users to power off devices when they're not in use. These methods include:

**1.Educational Campaigns**: Educational campaigns are often conducted to raise awareness about energy conservation and encourage responsible behavior among students, faculty, and staff.

**2.Signage and Posters**: Signs and posters are displayed in classrooms and other areas to remind users to switch off devices when they're not in use.

**3.Manual Reminders:** Facility staff or designated individuals may manually remind users to power off devices during routine checks or walkthroughs.

**4.Incentive Programs:** Some institutions implement incentive programs to reward individuals or classrooms that consistently power off devices when not in use.

**Proposed System**

The proposed system works like a smart detective for energy waste in classrooms. It uses special image of classrooms or lab with the help of CCTV Camera.When it notices a device left on for no reason, it sends a friendly message to the user, like a reminder, asking them to turn it off. This way, the system helps people remember to save energy without bothering them when they're using the devices properly. It's like having a helpful friend watching out for unnecessary energy use to keep things eco-friendly and cost-effective.

**LITERATURE REVIEW**

The literature exploring strategies for reducing energy waste in classrooms by sending messages only when devices are left on unnecessarily highlights a targeted approach to promoting energy conservation. Studies investigate methods such as real-time energy monitoring, occupancy detection, and machine learning algorithms to identify instances of energy wastage and trigger personalized messages to users. Research findings suggest that sending targeted messages can effectively raise awareness and encourage behavior change, leading to reductions in energy consumption without relying on automated shutdown systems.

However, challenges such as ensuring accurate detection of energy wastage events, managing user privacy concerns, and maintaining user engagement over time are critical considerations.

Further research is needed to refine message delivery strategies and assess the long-term effectiveness of this approach in educational settings. Overall, the literature indicates that sending messages only when energy waste occurs presents a promising avenue for promoting energy efficiency and sustainability in classrooms, offering a flexible and user-centric approach to behavior change.**METHODOLOGY**

1) Analysing the problem.

2) Collecting images of electronic devices in both conditions, on and off.

3) Verifying that images.

4) Designing image classification code to detect device.

5) Testing codes properly.

6) Designing Software.

7) Project Testing.

**REFERENCES**

**Kaggle :**

Kaggle is a platform for data science and machine learning competitions, providing datasets, kernels (code notebooks), and a collaborative community for analysis and model development, primarily using Python.

**GitHub Work:**

GitHub is a platform where you can find open-source code repositories and projects related to python and machine learning. It's a valuable resource for studying real-world code examples.

**Youtube:**

Youtube online tutorials and guidance helped us build a good responsive software.

**HTML & CSS:**

Use HTML & CSS for creating webpages.

HTML is used for structuring the content of a webpage and CSS is used to improve its visual presentation and layout.

**FUTURE SCOPE**

The future scope of the "Switch Off Devices in Classroom When Not in Use" project involves exploring new ways to make energy conservation even easier and more effective.

the project could expand beyond classrooms to other areas of the school, like offices and common areas, to further reduce energy waste. By continuing to innovate and adapt to new technologies, the project can help schools become even more energy-efficient and environmentally friendly in the future.

**1.Mobile App Development**:

Create a mobile app that sends reminders directly to users' phones when devices are left on unnecessarily. This ensures that everyone gets the message quickly and can take action right away.

**2. Expansion to Other Areas**:

Extend the project beyond classrooms to other parts of the school, like offices, libraries, and common areas. This helps to further reduce energy waste and promote sustainability across the entire campus.

**3.Education and Awareness Programs**: Develop educational programs and initiatives to raise awareness about the importance of energy conservation and encourage responsible behavior among students, faculty, and staff. This ensures long-term sustainability and continued energy savings.

**CONCLUSION**

In conclusion, by implementing a system that sends messages only when energy waste occurs, the project offers a practical solution to the problem of unnecessary energy consumption in classrooms. This approach effectively addresses the issue of forgetfulness or negligence in switching off devices, ultimately leading to significant energy savings and cost reduction for schools. Moreover, by promoting responsible energy usage and environmental stewardship, the project fosters a culture of sustainability within educational environments.

Through its innovative and proactive approach, the project demonstrates the potential for technology to drive positive change and contribute to a more efficient and eco-friendly future.

**Our Project Work Link Is Here:**

link=<https://colab.research.google.com/drive/1M_eUKoQJ_PhFSWwZjLBnlIZ8I34d83j2#scrollTo=LvM78hIbzdMt>