Water and Energy Saving System using Motion Sensors

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Abstract— A common thing we all often forget is to switch off the room lights and tap water. It's one of common human tendencies to forget things at times. This usually leads to water as well as electricity wastage. To avoid this unnecessary wastage we present an innovative system. The Auto light and tap switcher automatically switches on lights as it detects a human presence in a room. The system is fitted with sensors and counters to keep count of persons in a room. The system switches off the lights if the person counter equals zero value. The same concept is applied to a wash basin; it switches off the water supply as soon as the system counter shows zero persons present and switches on when it counts presence. Thus the system saves a lot of energy as well as automates the lighting and washes basin process.

Key words: Electricity, Lights, Fans, Water Tap Switcher, Human Presence

I. INTRODUCTION

In daily use of electricity by people, sometimes they act irresponsible and left lights and fans ON though there is no one in room, which result in energy wastage which should not be occur. On the other hand, Water taps on basins or at other places left open by people, and lots of water wastage occurs. Hence, we have proposed project which will automatically turn off fans and lights in room and turn off water taps when human count is zero around them.

II. LITERATURE SURVEY

In time of nowadays the students in colleges are used to do such things like while they are in class room they forgot to turn off the lights while leaving the class, so it causes to an electricity wastage means unnecessary bills are there.

The Same case with washrooms the lights and wash basin are kept on, It causes to wastage of water and electricity Survey was conducted at three colleges:
1) JSPM's Bhivrabai Savant Polytechnic, Wagholi.
2) Bharatiya Jain Sanghatana, Wagholi.
3) Parvatibai Genba Moze College of Engineering, Wagholi.

III. PROPOSED SYSTEM

In the proposed system we are implementing a motion sensors in a room to detect humans so as they are enter in room immediately sensor detects human presence and turn off the lights.

The same with a wash basin we are using a sensor called IR Hand Sensor. It automatically detects the human hands under the sensor and releases water from a water tap

IV. MOTIVATION

1) To save the electricity.
2) To save the water this is our basic need.
3) To make things easier for the people.
4) It has great scope in future.

5) By saving water and electricity we are helping the future generations.

V. WORKING

In our project we are using an motion sensor for the rooms and IR Hand sensor for the wash basin so as we enter in room the motion sensor detects a human in a room it immediately turn off lights and fans so the humans are not needed for turning on the lights. And when they leave the room after a particular time span sensors will detect that the no humans are here so sensors turn off the lights and fans again.
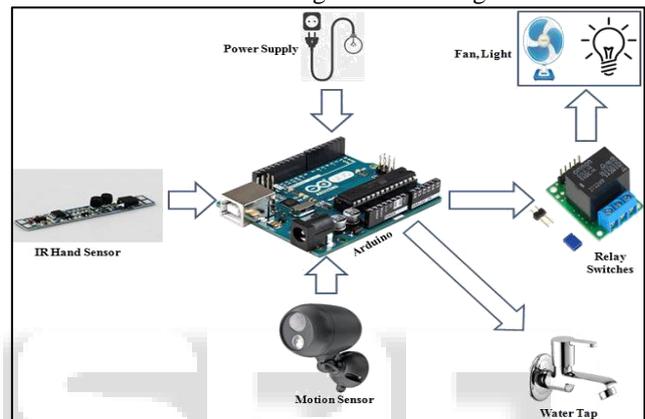

Fig. 1: System Architecture

In the case of wash basin we are using a new Tap Switches which are conduct a sensor called IR Hand sensor which detects the hands down the Tap. So when the hand comes under the tap the tap will detect the hands and releases the water and as we remove our hand from the tap it stops the supply of water.

VI. ADVANTAGES

1) Saves water.
2) Saves Electricity
3) Cost is less as compare to existing system
4) Reduce in electricity bill

CONCLUSION

The water and energy saving system using motion Sensors system proves to be a useful system as it automates and regulates the water Taps reducing water wastage. It atomizes home light and fans according to human motion present in it.

REFERENCES

[1] Adewale et al., "design and development of a microcontroller based automation switch for home appliances", International journal of engineering science intervention, pp. 24-31, 2013.
[2] S. Prasanna et al., "Automated Intelligent Power Saving System and Security System", Research India Publications, pp. 1167-1176, 2013.

[3] K. Sravani et al., "Human Motion Detection Using Passive Infrared Sensor", International journal of research in computer appliances and technology, pp. 28-32, 2014.

[4] Online Available: http://nevonprojects.com.