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MOVEMENT SENSOR FAUCET

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Abstract – The goal of this project was to decrease the amount of water waste inside the campus as students tends to forget to close the tap and cause water waste inside the campus. The design stabilizes soap, water, and energy costs and has a unit cost comparable to current public facilities components. Then, a prototype was created with an electrical control circuit and viable mechanical design to prove the validity of the idea. The prototype was meant to replicate a unit that washed a user's hands in a consistent manner. The prototype used simpler, less expensive components to dispense soap and wash the hands. Due to a lack of custom parts, the prototype required the user to rub their hands together to work the soap into their hands and allow the water to fully rinse the soap off. The prototype functioned without requiring the user to touch anything to operate the device. This touch free operation was accomplished with an ultrasonic sensor and coded Arduino UNO that began the process of washing hands once the beam was interrupted.

Keyword- ultrasonic sensor, Arduino Uno

INTRODUCTION

Hand hygiene is a major requirement for human health. Many infectious diseases can be emerged if proper hand hygiene procedures are not implemented. The infectious diseases which are caused by hand non-hygiene are viruses and parasites. Hand washing is the simplest, important and cost effective way to improve hand hygiene in health care and support the prevention of infectious diseases. By using faucet to wash our hand we can improve our hand hygiene level. Faucet is a device for controlling the flow of liquid from a pipe or the like by opening or closing a tap. These devices can be found easily in the kitchen or toilet at the sink. Faucet is widely use in our daily lives as to wash our hands, clean vegetables and other includes daily routines. Based on the task given to our group to create a smart campus, we have created a proposal for more efficient use of a faucet. For our faucet, we use movement sensor to improve efficiency and furthermore make the faucet more easy to use. Even though the faucet we use nowadays are good enough, but there are a few problems that can be stated. The objective of this project are to reduce the repairing cost as the tap of the faucet always been damaged ,decrease the amount of water waste because student tends to forget closing the tap, and also saving time and easy to use.

METHODOLOGY

To use the faucet or hand soap, firstly the user must put their hands under the spout or the pump head. There are two sensor placed at different angle. The first sensor is placed at the bottom side of the spout , and the other sensor is placed at the upper side of the spout. If the user want to wash their hand, the will need to move their hands in front of the first sensor, because the second sensor will eject soap when detects movement.

RESULT AND DISCUSSION

The result of this project is, ,when the sensor detects two movement at the same time it will not dispense any water or soap. It will only dispense either only soap or only water to make sure the user can choose either they want to use soap or water.

CONCLUSION

The problem of high water usage and cost of frequently repairing the faucet can be solved by using automatic faucet. This faucet will only stream the tap water when movement is detected. The cost for repairing the faucet will also drop because this faucet does not use handle to let the water flow which is always the reason

for the faucet to be damaged. If this project is implemented, the water usage will decrease, and it will be harder for the faucet to be damaged.

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