WALL - MOUNTED SMART FAUCETS

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INTRODUCTION

We know the earth is rich in water, but only one percent is liquid fresh water.The demand is growing, and the future predicts shortage of fresh water will be imminent. Conservation and management of water emphasizes water quality protection , environmental concern and it also encompasses the policies, strategies and activities that are made to manage water as a sustainable resource, to protect the environment, and to meet current and future human demand.

Are you surprised that the largest use of water is in the form of household chores?

On a daily basis humans consume large amounts of water, whether consciously or unconsciously, resulting in water problems. In some cases, while filling the water bottles and buckets they may not remember to close the taps due to their negligence which causes overflow, which results in wastage of water. In day to day life we frequently fail to turn off the valve while filling the overhead tanks, resulting in water overflow and huge water losses.

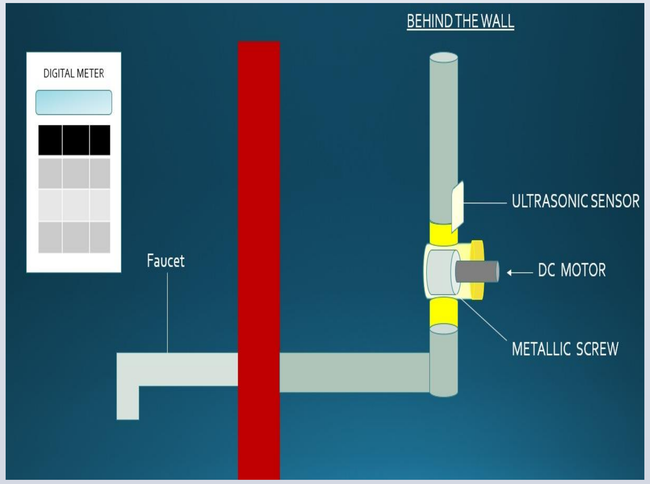
To limit the consumption of water and save it for the future generation, we have come up with a solution to control the amount of water being supplied and used. Wall-mounted smart faucet is equipped with a digital meter for providing a limited fixed amount of water through the tap. Here people can limit the volume of water required to be used as per their needs. After reaching its limit the metallic screw attached with the device automatically stops the further flow of water. Hence the water gets conserved and fulfills our motive.

METHOD

COMPONENTS

- 4x4 keypad
- ultrasonic Distance Sensor
- Arduino UNO R3
- Breadboard
- LCD 16x2
- Jumper wires
- DC motor
- Metallic Disk

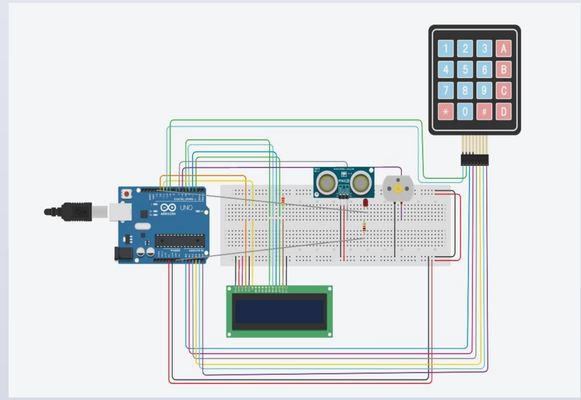
IDEA DESIGN



WORKING PRINCIPLE

If the digital meter is set to a certain volume of water, the device automatically calculates the time required to fill that volume. A signal is sent to the Arduino UNO R3 and that signal is further passed through the DC motor which generates electric current and moves the metallic screw.Hence the metallic screw rotates in anti-clockwise direction with the help of DC motor and releases the water through the pipe. When the estimated time is nearby the metallic screw rotates in clockwise direction by changing the polarity of the voltage and closes the pipe to avoid further flow of water. Therefore, we get necessary amount of water without any wastage. This device also provides with an indicator which indicates that there is no flow of water i.e. the tank is empty with the help of ultrasonic sensors attached right above the valve.

Conclusion



Conservation and management of water emphasizes water quality protection, environmental concern and it also encompasses the policies, strategies and activities that are made to manage water. This smart faucet incredibly helps in increase of conservation of water if every individual contributes their interest in this.