**AUTOMATIC WATER DISPENSER**

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# ABSTRACT

Nowadays, everything is automated, to cut costs and for convenience. Everyone likes convenience, for example: taking public transports so that there is no hassle of searching for parking or driving your own car and getting stuck in a jam, using the Internet to buy items and have it delivered to you instead of walking out to the store to purchase it.

Vending machines selling snacks, newspapers, drinks and other convenient items can be seen everywhere. An automatic water dispenser would also be a convenient for humans as each of us has to drink at least 2 litres of water a day to maintain our bodily functions. It is cheaper and more convenient to refill a bottle of water at an automatic water dispenser at the road side compared to purchasing a bottle of mineral water in a convenient store. With speed being in the mind of consumers nowadays, it is easy to get more consumers to use this machine.

This system is to be controlled by a PIC18F4431 microcontroller. It has 40 pins, which is suitable for this project since it requires a large amount of input and output pins due to there being many different parts in the project that are being interfaced.
Coins are separated according to size, the coins will drop through slots of their corresponding size into storage, and then the infrared sensors will detect the amount of coins that are being inserted into the machine. The coins are stored in a convenient storage which the coin return mechanism uses to dispense change of coins if any change is required. The coin return mechanism uses a servo motor which will rotate a disc to retrieve the coins from the storage, and then rotate again to drop the coin and return it to the user.

A solenoid valve is used to control the flow of water, while the PIC18F4431 is used to control the amount of time the solenoid valve is opened, so that the amount of water that is dispensed can be limited according to the selection made.
Liquid Crystal Display (LCD) is used to display the amount of water selected, amount of coins needed, and amount of coins inserted. This is to simplify usage of the machine so that users know how much more they have to pay to get what they want.

**Keywords**: Automatic Water Dispenser, microcontroller, infrared sensor, servo motor, solenoid valve, liquid crystal display