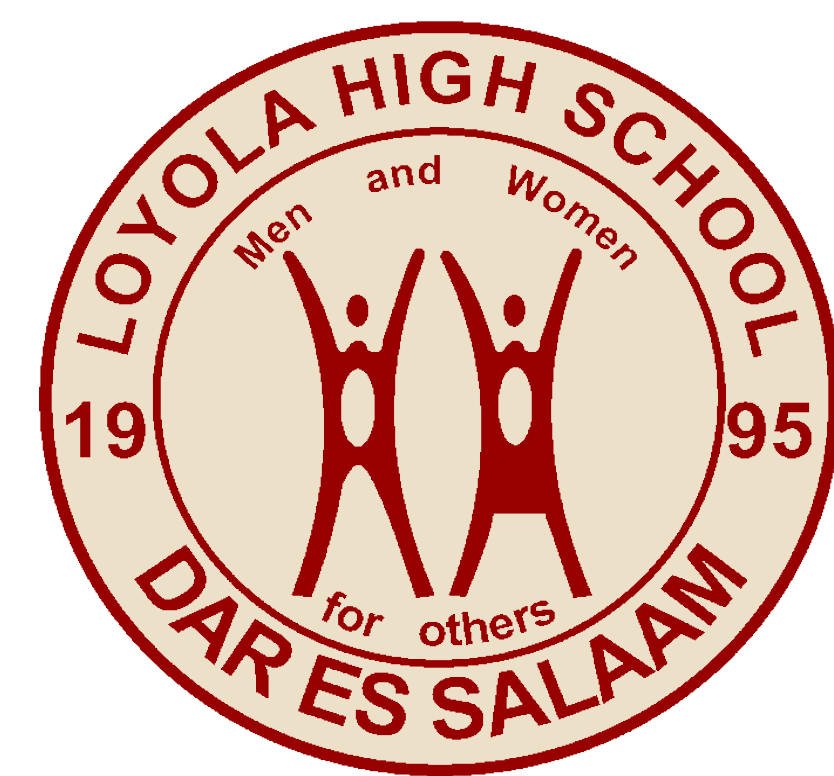


Did You Know a Mobile Phone Can Control Irrigation System!

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Abstract:

This is an electronic device which eases and facilitates proper management of a farm or garden. The device allows the remote control of some farming activities by software. The software is installed in a mobile phone and connected wirelessly to the device through Wi-Fi giving the farmer the ability to control his farm without being on the farm physically. With this device, a farmer is now able to control the water pump with a mobile device. The software has feature that allow the on/off button available in the app or set a timer for the pump to be off. There is also a calendar whereby a farmer can choose the days in a month and the specific time that the pump should be on. Using this software to control the water pump makes the farmer precise on the amount of water that will be used for irrigation hence avoiding unnecessary loss of water and energy (fuel or electricity) used by the water pump.

Method:

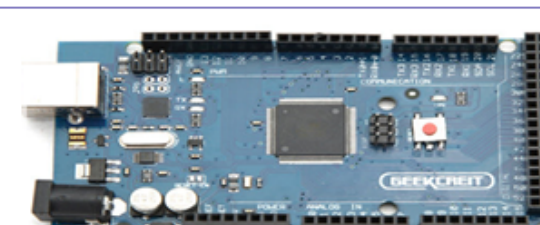
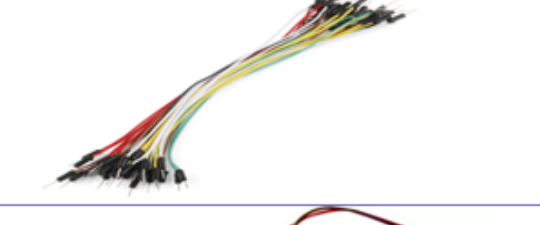
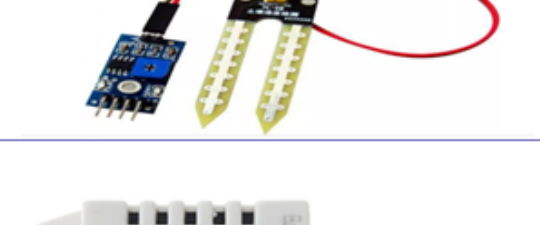

The device has two sensors, one of the sensors, one of the sensor records the temperature and humidity of the farm. The readings are displayed on the device LCD and on the mobile app allowing the farmer to get track of the daily temperature and get informed when there is a rapid temperature change. The moisture sensor measures the amount of water in the soil. The readings from the sensor are also displayed on the app that can allow can also be used to switch off the pump if the amount of water in the soil is sufficient.

Results:

When the switch button is pressed in the mobile application or triggered automatically by time, the signal is sent through Wi-Fi signals and received by the Wi-Fi module. The data is then sent to the Arduino mega and the Arduino sends the data to the relay module which acts as a switch.

The soil moisture sensor records the moisture content of the soil. If the soil is dry, the water pump is switched on, likewise when the soil is wet enough. While working with the project, we have been performing a research in the cost of crops at different places like TFDA at Ubungo external.

We have been working with the programming side of the project during free time at Loyola high school computer lab 3.

SN	ACCESSORIES	PICTURE
1	Arduino board	
2	Connecting wire	
3	Soil moisture sensor	
4	Temperature & Humidity sensor	



Conclusions:

From the results of the experimentation it is right to conclude that the use of the device perpetuates a smart irrigation system with a great control in the amount of water required for it. The device also ensures a smart and systematic consumption of electrical energy used for irrigation. It provides a better insight to "when", "why" and "by what amount" irrigation should be performed by the farmer.

The device's wireless connection redefines the old way of irrigation and reduces the burden and costs consumed by a farmer to reach his/her farm every time he/she irrigates it. The range of the wireless connection can be increased by upgrading the WiFi module.

Alternative sources of energy can be used to power the device making the device more locomotive and very applicable these sources of energy include the use of solar energy.

References:

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Acknowledgments:

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