



Design and Implementation of an SMS Controller

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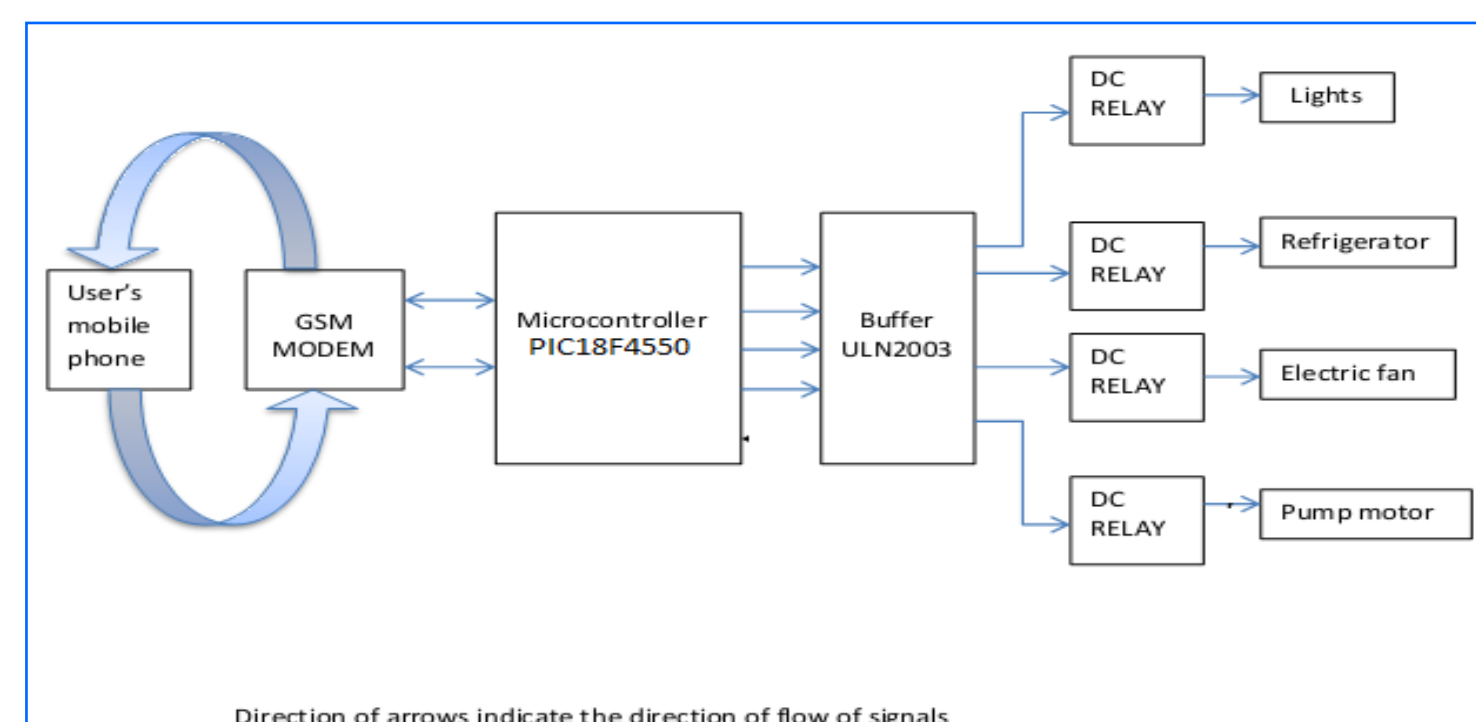


Introduction:

As technology growth aims towards simplicity there is always a need to control equipment remotely. There are several wireless means of conveying information or data, like Bluetooth and infrared, this project uses Short Message Service (SMS) as a one of the services offered by GSM technology (wireless communication technology for mobile phones) to remotely control electrical appliances. The project intends to build a system that will enable its users to turn on or off electrical appliances at the office or home by sending commands in the form of text messages from his or her mobile phone through GSM network. The fact that mobile phones are nearly everywhere proves that GSM technology of wireless communication is also everywhere, that means with the system developed in this project, we can practically be able to turn on or off electrical appliances at our offices or homes from wherever we are, provided that there is a network coverage.

Statement:

There is always a need to be able to control something remotely, for example you may need to switch on or off the lights at your poultry farm which is located far from your premises. Wherever there is such kind of needs, this project presents a solution, which is, been able to remotely turning on or off electrical appliances by sending commands in the form of text messages from your mobile phone.



System Design:

The system to turn on or turn off electrical appliance using commands sent as text message from user's mobile phone will be comprised of the following components.

User's mobile phone from which text messages containing commands to turn on or to turn off the appliances will be sent by user

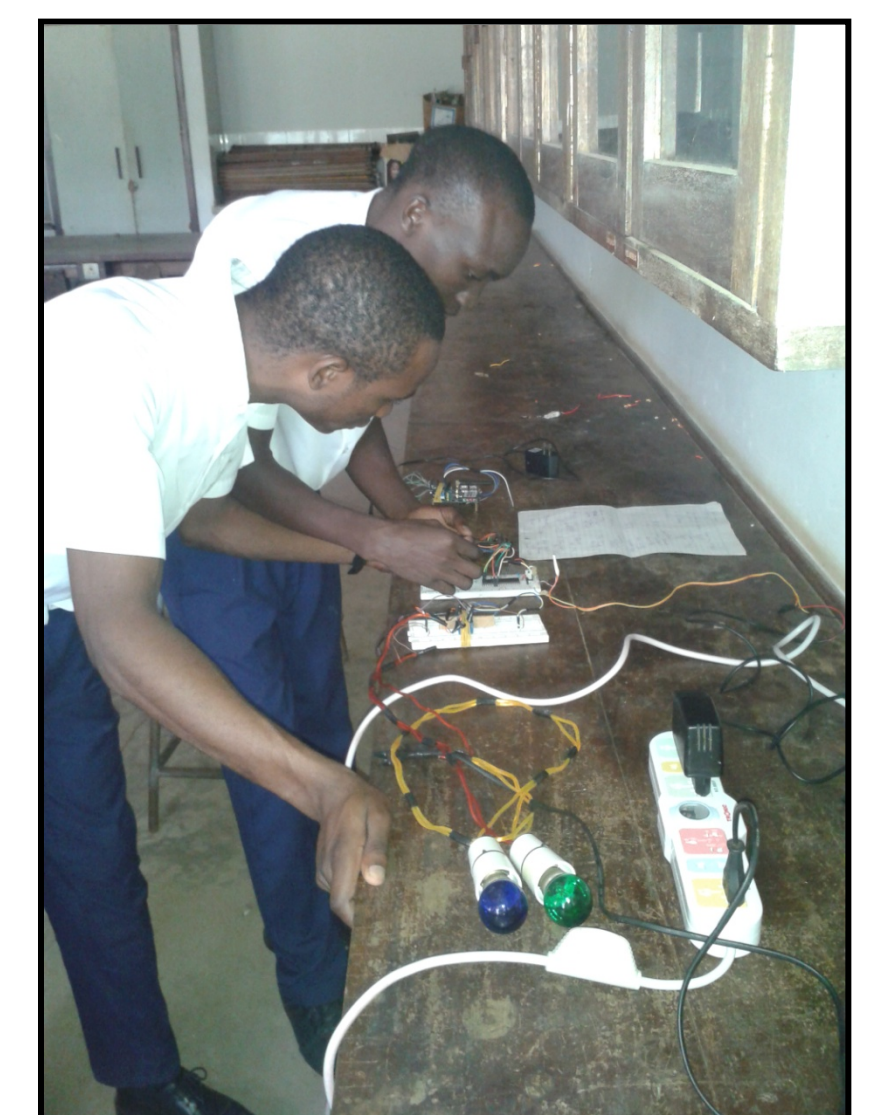
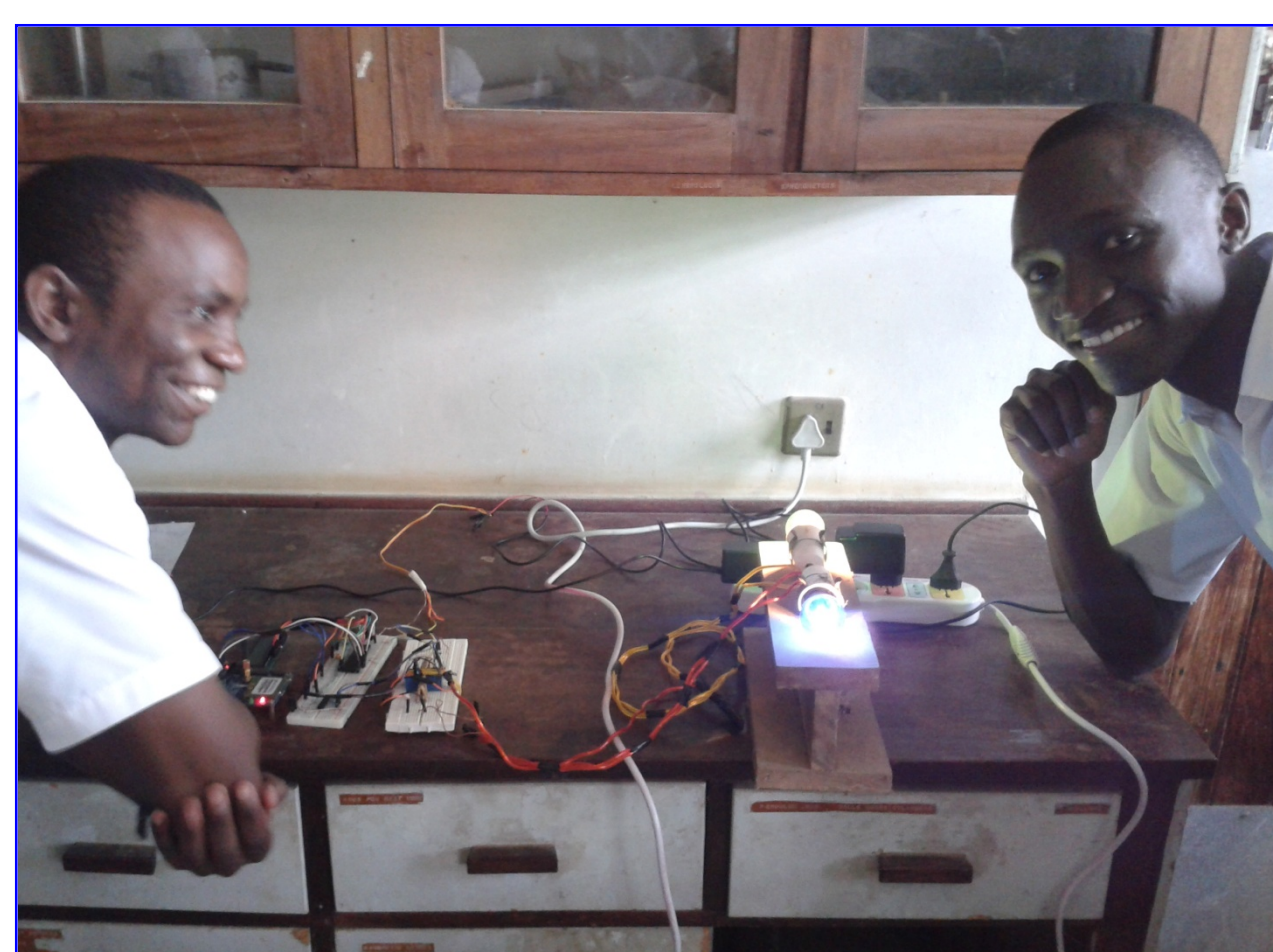
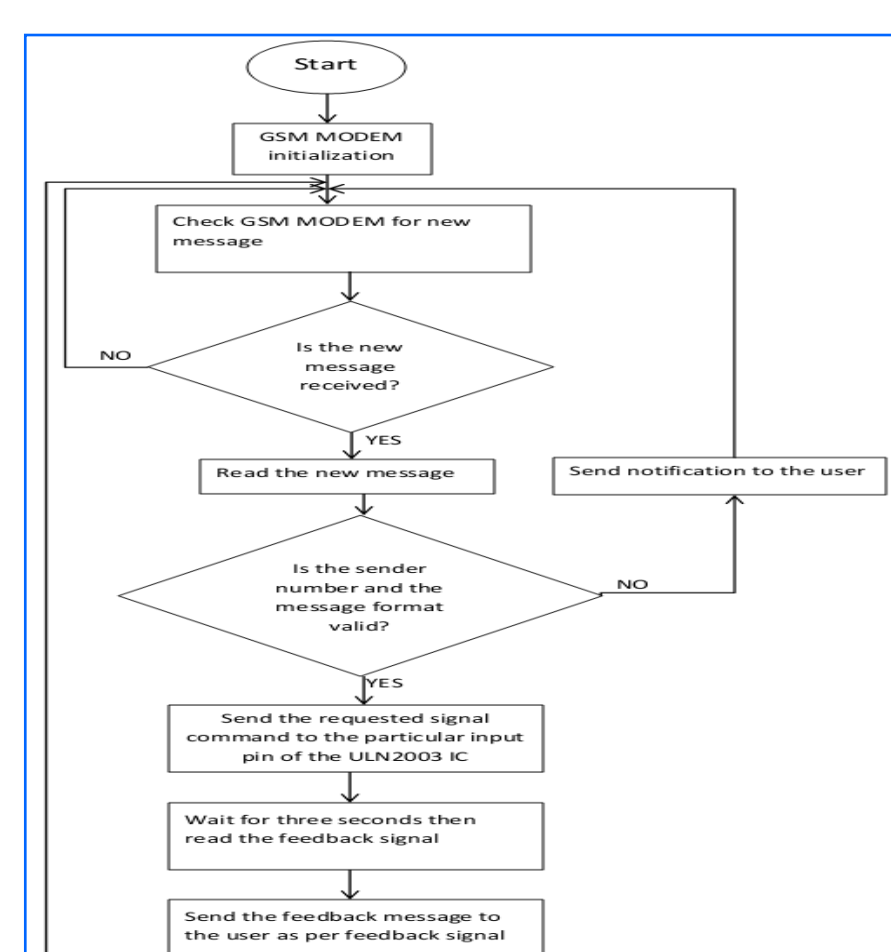
GSM modem which will be used to receive text messages sent by user and to send feedback to the user.

Microcontroller to process the received text message so as to get the required "switch on" or "switch off" signal and generate feedback message to be sent to the user

Switching module to connect or disconnect the electrical appliance from the power supply.

In this project, a microcontroller is performing all computer related tasks that a system requires in order to produce required functionality of being able to switch on/off electrical appliance by using command sent as text messages from user's mobile phone.

In order to perform these computer related tasks of switching on/off electrical appliance by using commands sent as text message, a microcontroller is programmed to follow the algorithm shown in the flowchart below.



Conclusions:

There are two very specific formats of text messages that the system will be able to interpret or else nothing will be interpreted. The correct formats are;

"* S1 A1 1 Y ##"G

"* S2 A1 ##" (WITHOUT QUOTES)

Each letter used in these formats has the following meaning; * The star indicates the starting point of the text.

There are two services offered by the system. The first enables the user to turn on or off the appliances and is indicated by S1. The second service which is indicated by S2, enables the user to check the status of the appliance, that is whether the appliance is ON or OFF.

There are two appliances which can be controlled by the system. A1 stands for appliance number one and A2 for appliance number two.

When using service number one (S1), after writing the appliance number which can be either A1 or A2,

You write the action which you want to take on that appliance. 1 means "SWITCH ON" and 0 means "SWITCH OFF"

When using service number one, which enables the user to turn on or off the appliance, by writing Y you are telling the system that to send you a feedback message. Appliance number one (A1) for example, the feedback message can be

"A1 IS 1" which means appliance number one is ON, or it can be "A1 IS 0" which means appliance number one is OFF.

This symbol marks the end of txt message written by user.

Acknowledgments:

Thanks to the almighty God that the project was successful. We were able to design an electronic device that can switch on or off electrical appliances by receiving commands sent as text message thus adding up new knowledge to the world of science and technology.

We convey our special gratitude to all who have helped in anyhow in the whole course of this project.

We also like to convey our special gratitude to Young Scientist Tanzania for giving us this chance to participate in this marvelous competition.