Introduction:

1. *What is the problem?*

In today’s world almost everything is being controlled electronically and wirelessly. The Wi-Fi remote switching system is not as expensive as it used to be but it is still quite costly. Which might be why it has not been extensively implemented in a developing country like Bangladesh. Hence this project allows for wirelessly switching home appliances on and off and monitoring the respective power consumptions.

1. *Why is it interesting and important?*

It is has been built with affordability in mind and also makes sure that existing traditional systems such as switches and gang boxes does not need to be replaced. This device would be an add-on to existing switches, connected similarly to an Inverter Power Supply (IPS).

This remote switching system provides an increased quality of life for an elderly or disabled person who need caregivers. This also equips users with full control over their resource management.

1. *Why is it hard?* (E.g., why do naive approaches fail?)

Majority of the system that are available does not provide full control of the appliances such as controlling the speed of the fan or dimming lights.

Real time wireless communication between server and client using the python module “Django Channels” (Websockets) has not been implemented before in this field of work. This is important for superior user experience.

Energy monitoring using the True RMS method by processing both voltage and current signals to get power readings with high accuracy.

1. *Why hasn't it been solved before?* (Or, what's wrong with previous proposed solutions? How does mine differ?)

Home automation is still a relatively new topic. There were various approaches taken in the past and extensive research is still being carried out. This paper only contributes to this vast field with its new approach.

1. *What are the key components of my approach and results?* Also include any specific limitations.

In today’s world almost everything is being controlled electronically and wirelessly. The home automation system is not as expensive as it used to be but it is still quite costly. Which might be why it has not been extensively implemented in a developing country like Bangladesh. Hence this project allows for automation of homes at a reasonable price with parts that are available within the country. It also makes sure that existing traditional systems such as switches and gang boxes does not need to be replaced. This device would be an add-on to current system, connected similar to an Inverter Power Supply (IPS). Home automation can provide increased quality of life for the elderly or disabled persons who need caregivers and it also can offer the comfort and security for the private home’s residents.

This project solves

It is has been built with affordability in mind and also makes sure that existing traditional systems such as switches and gang boxes does not need to be replaced. This device would be an add-on to existing switches, connected similarly to an Inverter Power Supply (IPS).