Monitoring Of Electricity Unit Consumption At Household Level

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ABSTRACT

An android application which will provide live tracking of energy consumption directly from the electricity meter and will automatically send the statistics to the distributer. With the help of IP address of Wi-Fi module we will send current unit to application. Which will help user to easily monitor daily unit consumption (bar graph)? Link will be use to implement the concept of power cut button with added security features to avoid misuse. We will use map to show historical availability of electricity by fetching from database. If user logged the complaint of power cut and if no action is taken then app provide option to report JE (after more than 4 hours). Current sensors will be use for auto detecting presence and absence of electricity at household level.

1. INTRODUCION

The implementation and the monitoring of large infrastructure projects is always a challenge. This challenge is even more pronounced, when the beneficiaries are located at the grassroots level. In the case of the Myanmar national electrification project (NEP), the challenge was the implementation and monitoring of around 145,000 households, community centers and schools, which did not have proper access to electricity and are being newly equipped with solar panels under the first contract. The basic information to be collected and monitored include who receives which type of solar PV systems, when, and by which supplier, and whether the users have been satisfactory with the quality of the equipment and installation, etc. The project is expected to eventually benefit 1.2 million households and more than 10,000 villages over 6 years with new electricity consumptionofservices. Preliminary work conducted with a small smart-meter like dataset from of energy demand reduction project showed some evidence of differences in load profiles for different types of households

2. System working

2.1 Hardware:

Our main goal is to creation of tool which enables large origination to gain insight into their electricity consumption. In other word we want that type of system which monitors electricity consumption on the appliance level with the minimum effort and low installation cost. Sonoff 4CH Pro & 4CH Pro R2 are 4 gang WiFi switches. They support switching among 3 working modes: interlock/self-locking/inching mode, and both supports to set 1-16s delay in inching mode. This feature allows you to let your switch turn on for a few seconds then goes off, which works like a pulse switch. They integrate with a 433.92MHz RF receiver module, making them possible to be controlled by RF Remote. The smart switches are DIN Rail mounted. Users can remotely turn on/off the connected lights/appliances by iOS/Android App We Link or 433MHz RF Remote. They can create 8 enabled single/repeat/countdown timers to automatically turn on/off at the specified time. The timers can run themselves even when the network is unavailable. To let the devices be controlled by others, users can simply share the devices to other accounts and allow specified timers permissions. Users can even create some scenes or smart scenes to trigger. ON/OFF the switch.

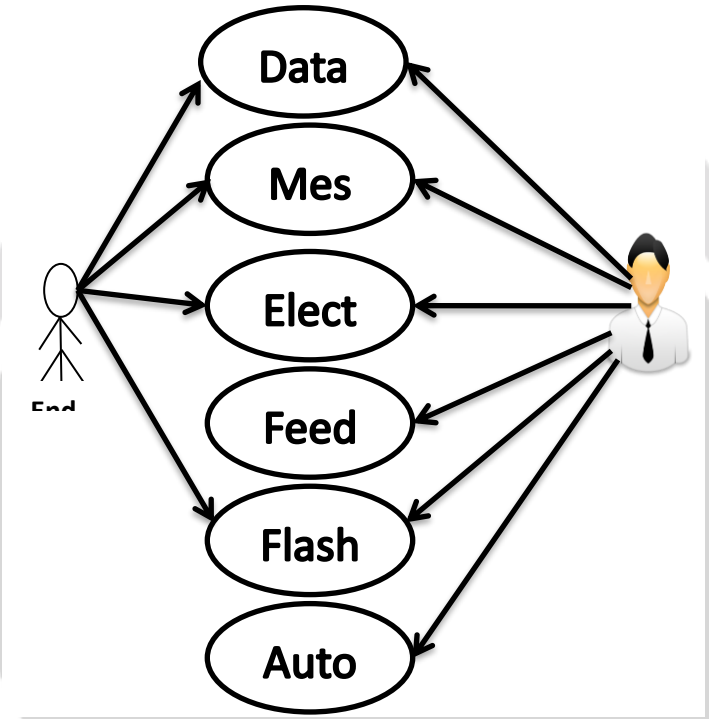
- In self-locking mode, users can turn on/off the 4 connected devices instantly and separately.
- In interlock mode, users can turn on one device every time, and turn off other devices at the same time. In inching mode, users can turn on the connected devices for 1-16s then auto-off.
- Users can set some devices in inching mode, while the others in self-locking mode

2.2 SOFTWARE:

One of the most important aspects of smart metering systems is to encourage users to use less electricity by being better informed about their consumption patterns. Forecasting usage provides customers with the possibility of linking current usage behaviors with future costs. Therefore, customers may benefit from forecasting solutions through greater understanding of their own energy consumption and their future projections, extensive load forecasting study using different forecasting algorithms enhanced by the household activity patterns was undertaken. Allowing them to better manage the costs of their usage.

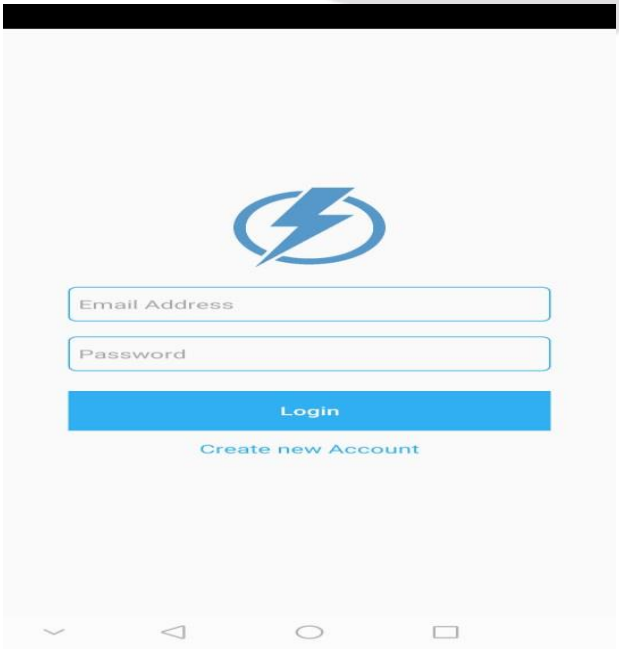
3. DESIGN

By using this use diagram flow of the program will be detected, first upon we are going to collect the data and will store into the database. Graphical representations are available to show the historical data to the user so user can see how much amount of data is used per month.

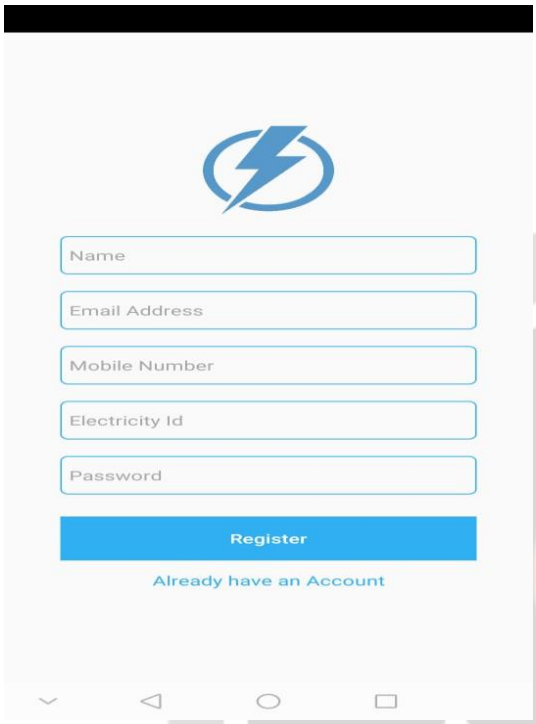


4. IMPLEMENTATION

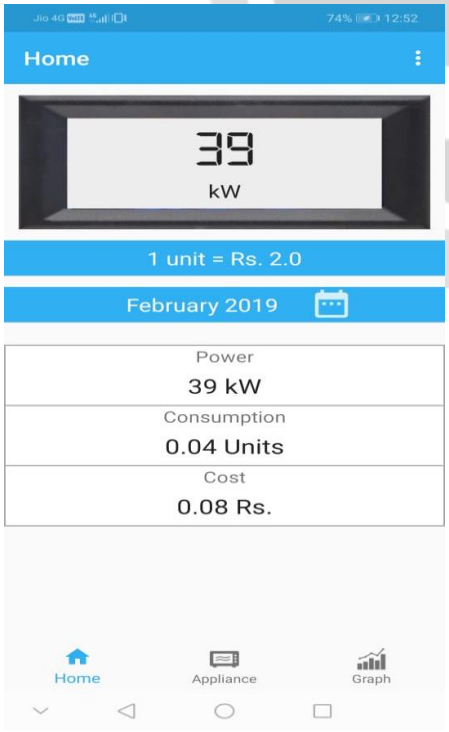
a. Login system and home screen



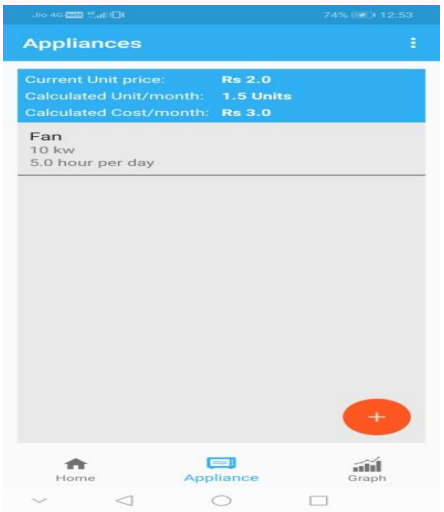
b. Registration System:



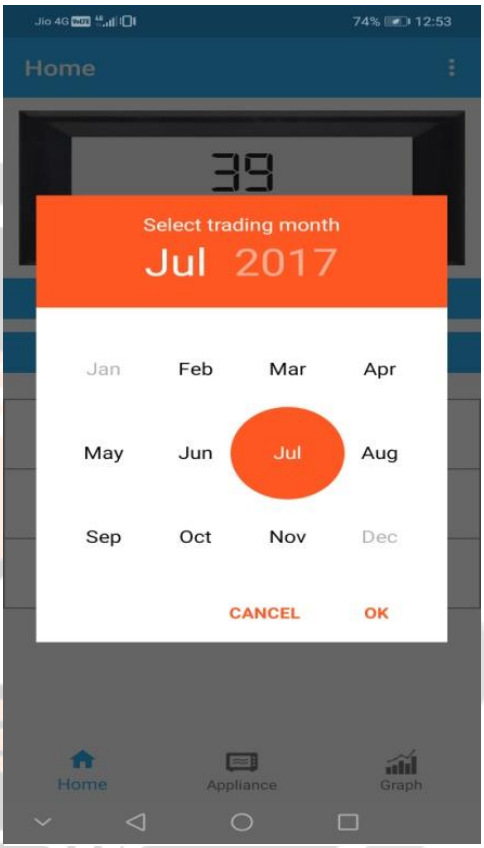
c. virtual meter and reading:



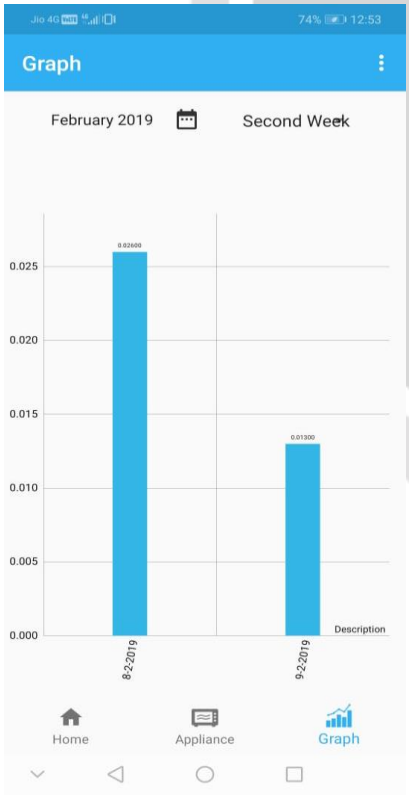
d. Appliances



e. Trading date system



d. Graph to show historical data



5.CONCLUSION

The high number of household monitored and analyzed gives a precise overview of the electrical consumption, and important information regarding calculation of energy saving. Future work consists of taking electricity meter and will automatically send the statistics to the distributer. With the help of IP address of Wi-Fi module we will send current unit to application. This will help user to easily monitor daily unit consumption. design and prototyping of a home electric energy monitoring system,which has been successfully completed.

6.REFERENCES

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