Monitoring Of Electricity at Household Level by android application

Prof. Madhuri Pal, Reshma Satpute, Aniket Gosavi, Shubham Manuja, Sanket Waghmare, Darshan Masurkar, Ajinkya Kohle,

1 *Professor, CSE , JD College of Engineering and Management, Maharashtra, India*

2 Student, *CSE , JD College of Engineering and Management, Maharashtra, India*

3 Student, *CSE , JD College of Engineering and Management, Maharashtra, India*

4 Student, *CSE , JD College of Engineering and Management, Maharashtra, India*

5 Student, *CSE , JD College of Engineering and Management, Maharashtra, India*

6 Student, *CSE , JD College of Engineering and Management, Maharashtra, India*

7 Student, *CSE , JD College of Engineering and Management, Maharashtra, India*

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 distributor. 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.

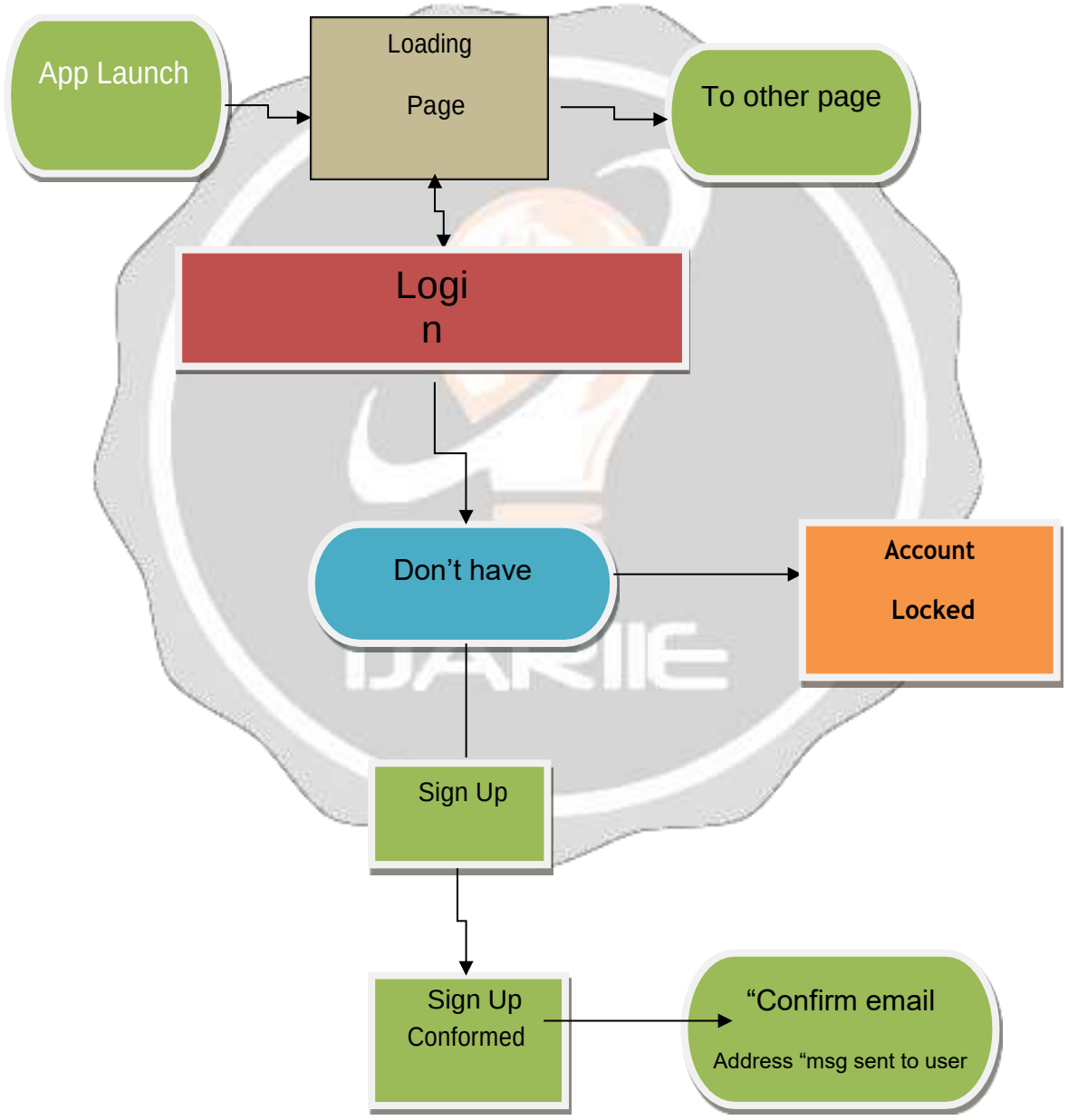
---

1. INTRODUCTION

The Government is currently planning to deliver 24*7 electricity to all the consumers in these regards development and generation, transmission and distribution needs to be monitor for effective implementation. Looking at current scenario no monitoring of electricity at individual level is available. Analyzing the electricity availability in real time at household/individual level can aid in bringing transparency and accountability and

help us to analysis reliability parameters. It can also be used by policy makers and even small scale businessmen who will want to know about the power situation in an area over time before setting up business. We create app to check presence and absence of electricity by live tracking.

The main motive of implementing smart and efficient metering is to make people aware of their energy consumption so that they can make less of use electricity. By providing relevant data of usage helps user to predict future cost according to their consumption. 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.Providing them with ability to efficiently manage their expenditure on their usage.



2. DESIGN AND IMPLEMENTATION:

Electricity is monitored into following ways they are 2.1. Android, 2.2 Java, 2.3 Firebase

2.1 ANDROID

Android is a mobile operating system (OS) first developed by a Silicon Valley company by the name of Android Inc. A collaboration spearheaded by Google in 2007 through the Open Handset Alliance (OHA) gave Android an edge in delivering a complete software set, which includes the main OS, middleware and specific mobile application, or app.

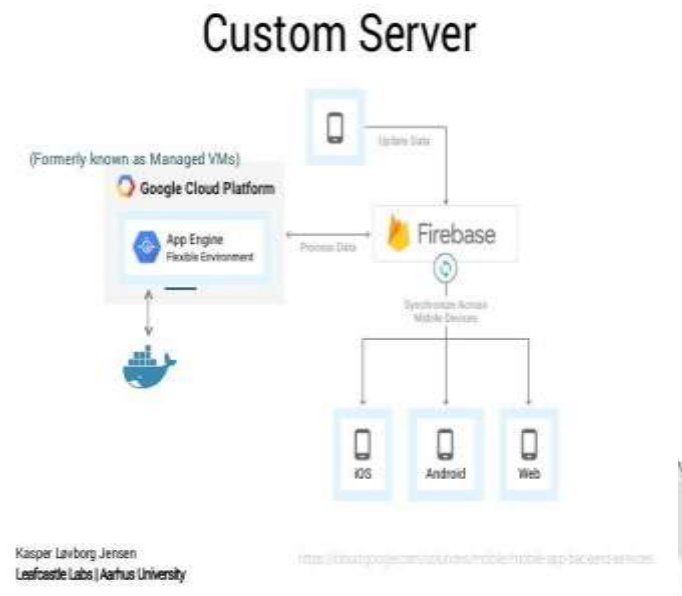
- Initially, Andy Rubin founded Android incorporation in Palo Alto.Califorinia, United States in October 2003.
- Basically the main motive of using android is to make the mobile application more user friendly.
- Originally Intended for camera but shifted to smart phones later because of low market of camera only.
- By making use of android enables us to reach to large numbers of people.
- As in india the numbers of android users are increasing rapidly.
- In 2008, HTC launched the first android mobile.

2.2 JAVA:

Java is a high-level programming language originally developed by Sun Microsystems and released in 1995. Java runs on a variety of platforms, which are available and mostly used in todays day to day world. Java is considered to be more dynamic than other lower layer language since it is designed to adapt to an evolving environment. Java programs can carry extensive amount of run-time information that can be used to verify and resolve accesses to objects on run-time.

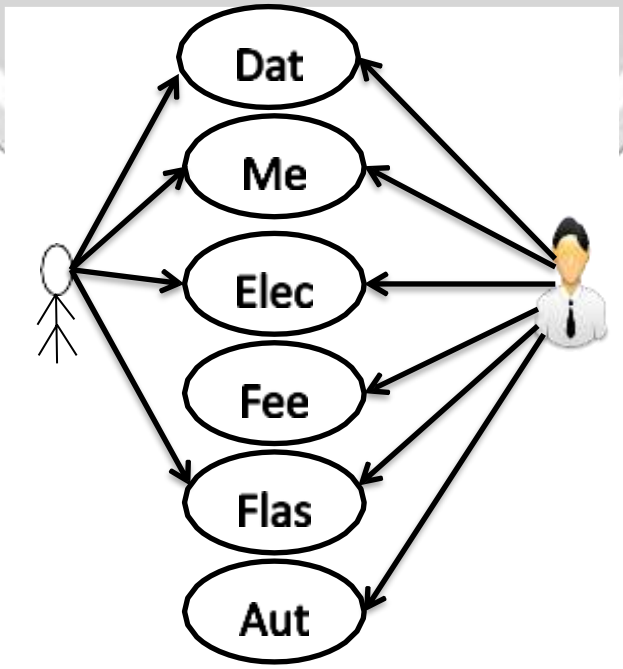
2.3 FIREBASE:

Firebase isgenrally database which is used to store data of modern application efficiently. Firebase is made up of complementary features that you can mix-and-match to fit your needs, with Google Analytics for Firebase at the core. It enables you explore and integrate Firebase services in your app directly from Android Studio.



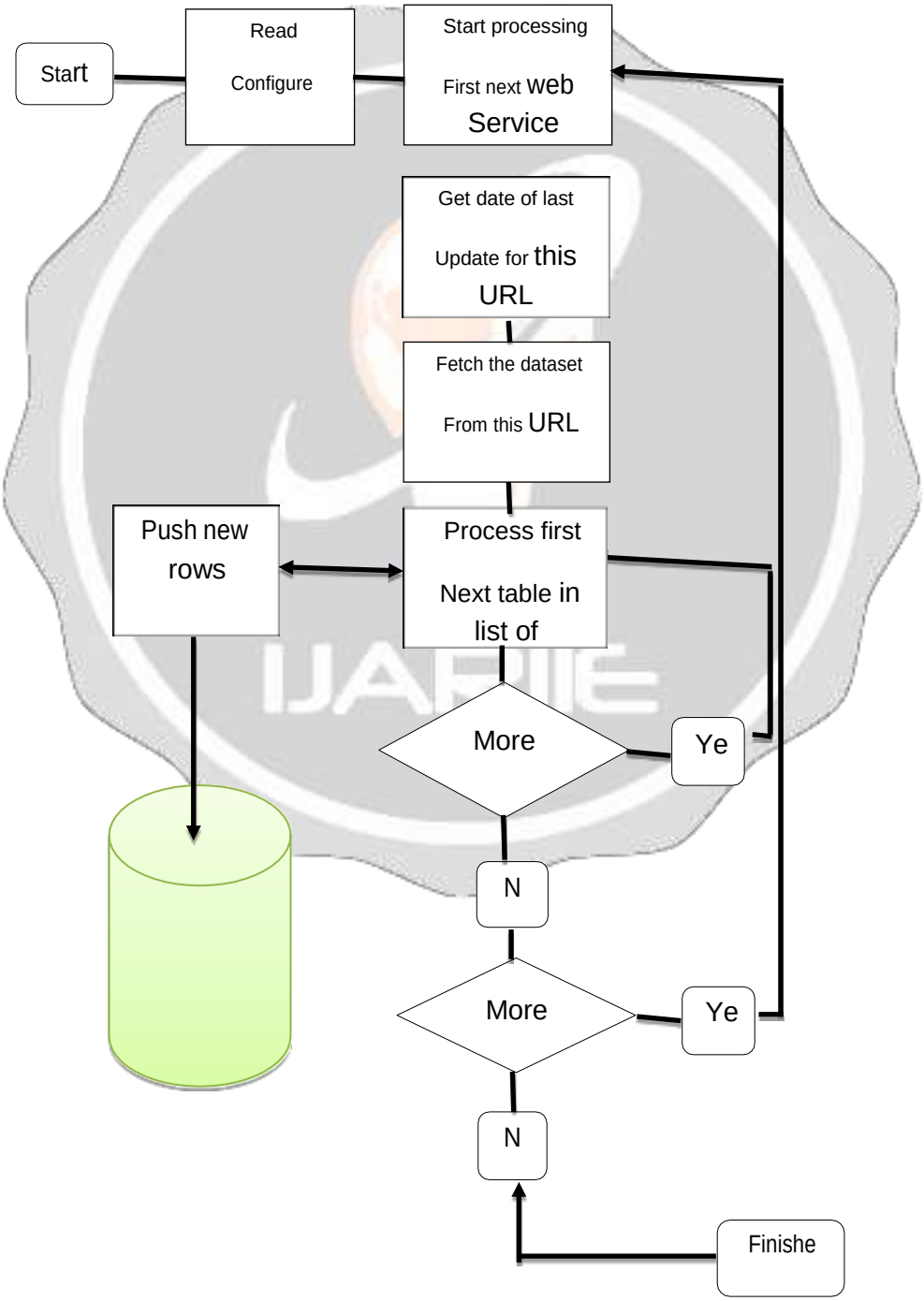
Android is a mobile operating system (OS) first developed by a Silicon Valley company by the name of Android Inc. A collaboration spearheaded by Google in 2007 through the Open Handset Alliance (OHA) gave Android an edge in delivering a complete software set, which includes the main OS, middleware and specific mobile application, or app.

3. DESIGN:

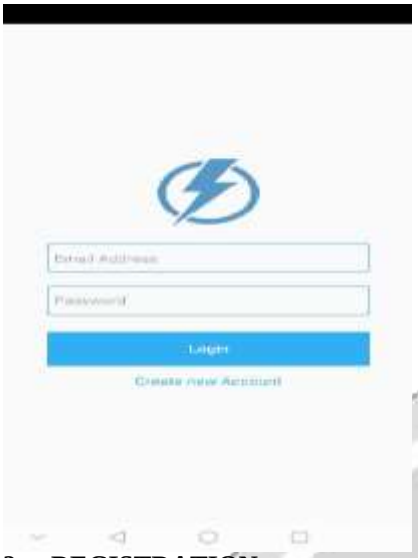


4. WORKING :

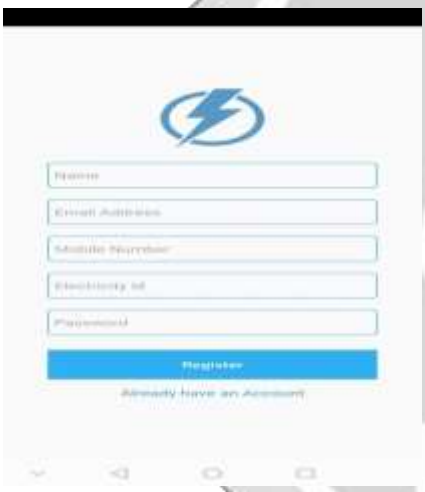
Working of the application are illustrate into the following figure



1. LOGIN PAGE

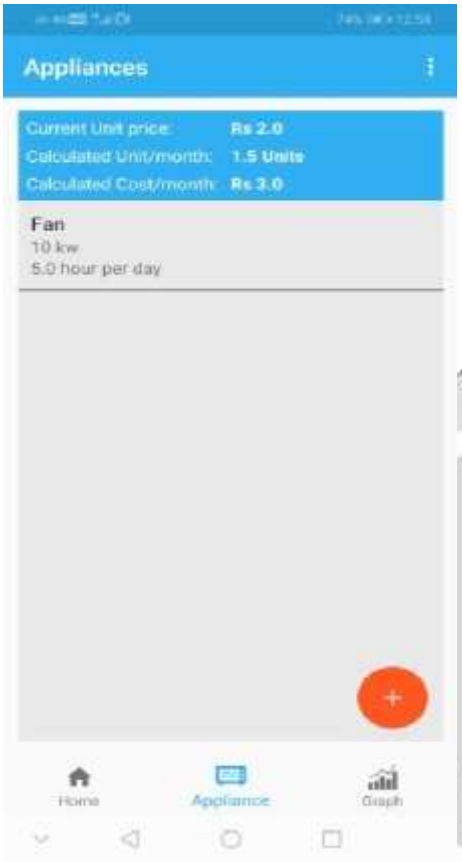


2. REGISTRATION

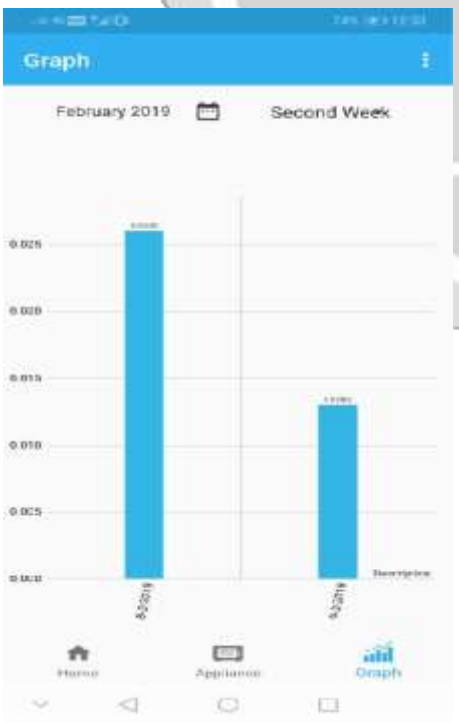


3. VIRTUAL METER

4. APPLIANCES



5. GRAPH TO SHOW HISTORICAL DATA



5. CONCLUSIONS

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

1:Number of electric meters deployed in the U.S form 2008 to 2016, https://www.statista.com/statistics/499201/number-of-meters-in-the jully 31,2017

2:Shahzadeh, A.; Khosravi, A.; Nahavandi, S. Improving load forecast accuracy by clustering consumers using IEEE smart meter data. In Proceedings of the 2015 International Joint Conference on Neural Networks (IJCNN),IEEE Killarney, Ireland, 12–17 July 2015; pp. 1–7.

3:Marco Casini , "Internet of things for Energy efficiency of buildings," International Scientific Journal Architecture and Engineering. – 2013 (IEEE) .