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Implementation of System to Measure Received Mobile Signal Level at Any Location

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Abstract: This paper throws light on the recent technological innovations to illustrate capabilities and effectiveness in a domain, which attempts to enhance mobile communication successfully.
In this fast world where everything is so dependent on mobile phones and internet, it is very important to have constant mobile phone network. This application will help you to measure the received mobile signals on your mobile phone. People are usually frustrated with their current signal strength. When complaints are made to the telecom operators they usually turn down the complaint as replying that there is some kind of technical issues from customer end. So our main purpose is to give the user graphical representation of the network throughout the day and throughout the different region. Also the signal strength received by different users of the same telecom operators in the same region. So user can figure out whether that the issue is faced by him or different users as well. Though this field has been explored, this application proposes a system which can calculate the signal strength of the user device in an area and can suggest the user an appropriate network service on that basis. Thus, this application can have a meaningful impact on people's lives whose livelihood depends on network based requirements.
Keywords: Network service provider, Telecom regulatory of India, One time password, Mobile communication computing, Decision algorithms, Signal strength

I. INTRODUCTION

The number of mobile phone users in the world is expected to cross five billion mark in 2019.In 2016, an estimated 62.9% of the population worldwide owned a mobile device. The mobile phone usage is expected to grow to 67% by 2019.
In such an age where a huge amount of population depends on mobile phones, a large bracket of which is the young generation, mobile applications are very efficiently used. These applications need a good network to function effectively .Considering that everything in today's world is done online. And one time password being the key to all the online transactions. It is necessary to have the proper mobile signal strength all the time to receive the OTP. Also considering the business which is completely dependent on the online transactions it is necessary to have constant and good mobile signal strength. This application can also suggest the user which telecom operators are providing the best service in that particular region so if the complaints of the user are not responded well by telecom operators then user can consider the option of mobile number portability. Users face problems such as weak network coverage, fluctuating network ,etc. This application enables users to measure received mobile signal at a location. The motivation behind this application is the betterment of mobile users with which they can have a smooth experience.
Objective of our system is to give valuable data and updates identified with the versatile clients. Other objectives include making the framework more adaptable and easy to use, speaking to versatile flags in a graphical manner and giving the best arrangement rely upon the outcome. The application shows the strength of signals in a graphical manner as well to help the user understand the signal levels easily and decide on portability of network if needed

II. LITERATURE SURVEY

The detection India is one of the most complex mobile markets we have ever studied. Not only is the mobile market extremely large, but it's a highly distributed one. India is divided up into 22 telecom circles, with multiple operators licensed to operate in each. That makes it quite difficult to compare operators to one another on a national level because not every operator is operating in every region. That said, through consolidation and acquisition several operators have recently emerged as national or near-national providers, offering either voice or mobile broadband services in the large majority of India's circles. For our national comparison, we selected the operators that were able to meet that criteria for the different mobile technologies we measure. It has been noted that the bars on the top of your phone's screen do not give the tire indication if phone's signal, but this signal strength application gives you an exact picture by putting across information in numbers. The closer the number is to 0, the stronger is the mobile signal strength. To explain it better, the lower the number, the better the signal (the minus sign is not considered). For example, -55 is better than -75.The number is said to be in the range of - 40 to -130, where -40 means the best signal and -130 means no signal.

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III. PROPOSED WORK

With the help of the system, we can recognize the strength of the signal in different areas and suggest the best area for a particular mobile network to the user. This application intends to reach the mobile users of the country having an Android based operating system. We can analyze multiple networks efficiently and provide the best network service based on the result of analysis. Currently no open source is available in India. The similar sources are research oriented and so are not usable for regular users. These sources are not deployed in a live environment. This application will use different decision making algorithms to generate appropriate results.

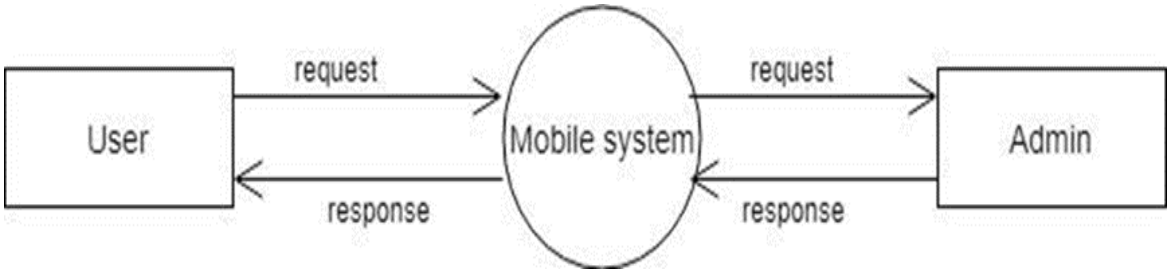


Fig 1: Data Flow Diagram (Level 0)

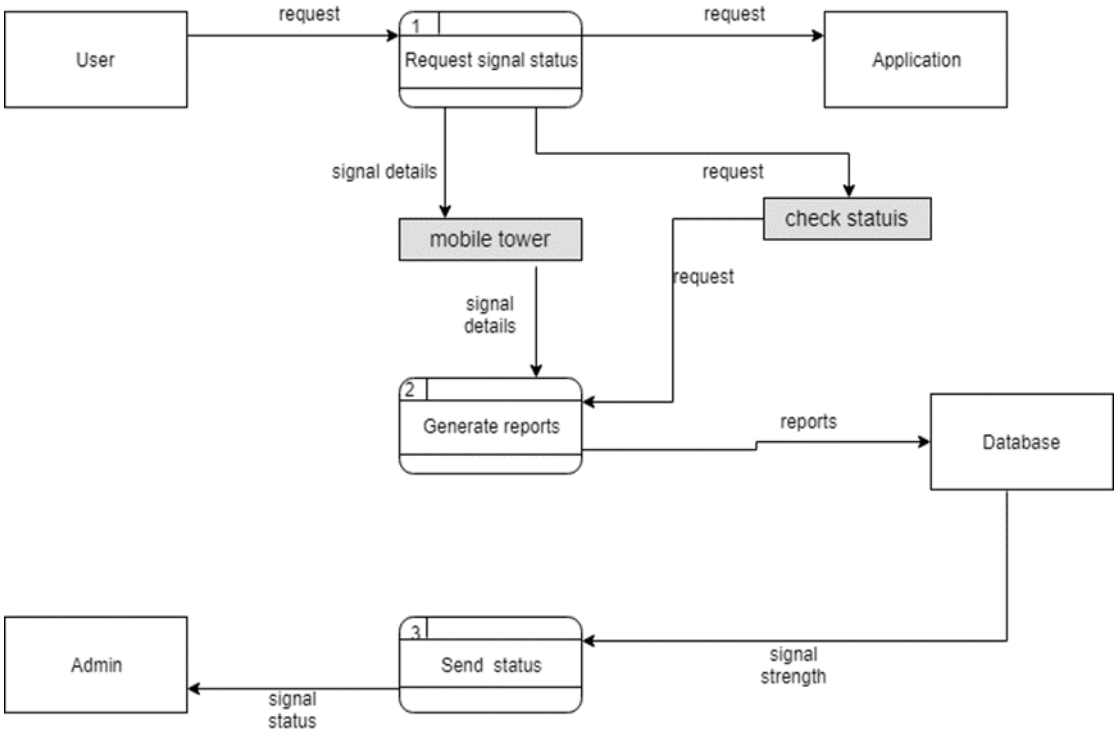


Fig 2: Data Flow Diagram (Level 1)

IV. SYSTEM OVERVIEW

A. Feasibility

1) Economical Feasibility

The EFS is composed of two required forms:

a) Business Case The Business Case provides an analysis of the business environment including Expected users: Civilians Nature of the business: Social Process of payment: Non Profit Cost Benefit Analysis The Cost Benefit Analysis summarizes the revenues and costs involved with the proposed project. As the proposed system will be used for the benefits of the locals of Mumbai, no additional cost will be paid by them. Hardware system includes computer or mobile phone so that would be one requirement. But almost all masses have any one from them. Hence, our system is Cost Efficient.

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2) Technical Feasibility: Hardware Requirement: Android OS Version 5.0+Ram 1Gb Space 100 MB Resources Required: Android Studio Internet connection Google Developer Account Technology Used : Java XML Google Cloud Platform Firebase

B. Methodology

This application is working on wireless communication module. We will be using Android development toolkit to develop the application that measures received mobile signal. Generation of network complaints and Better network selection methods are considered for measuring the levels of network services. Assuming the number of network provides, a total range is services is calculated using Mobile Communication Computing and Decision Making Algorithms

C. System Process

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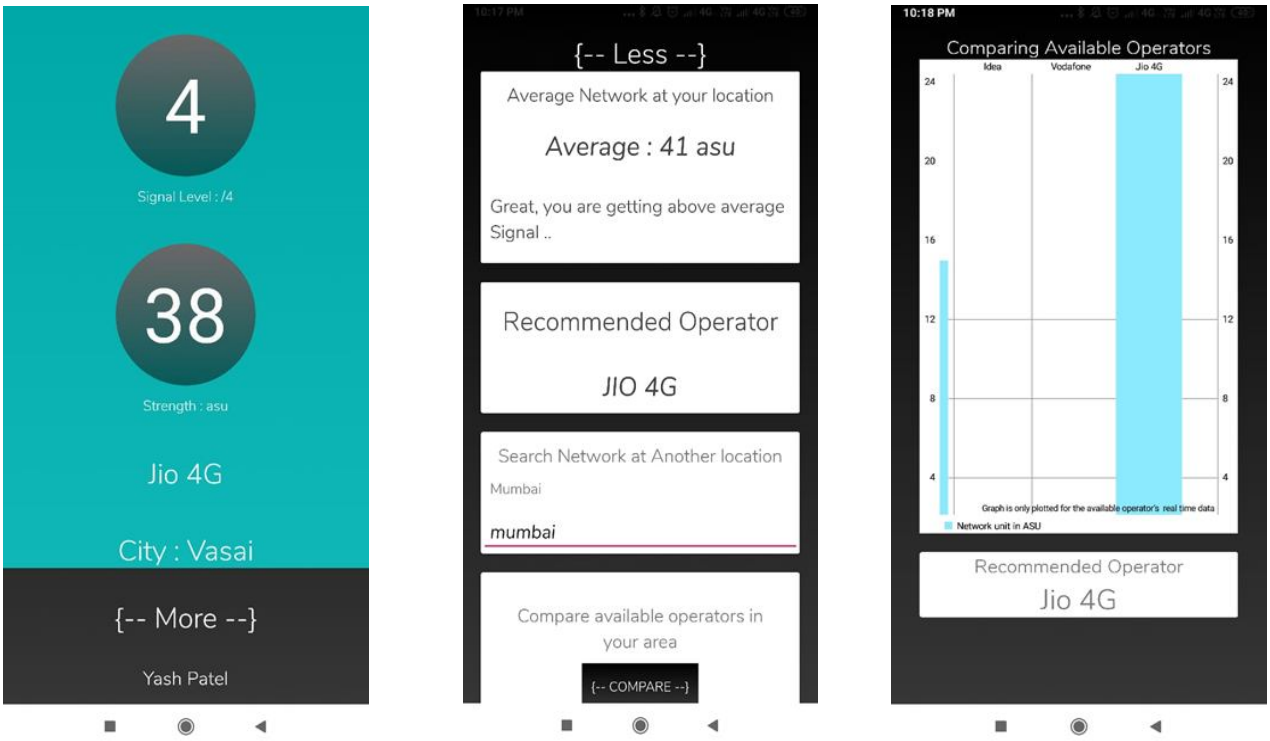


FIG :- Screenshots of the Application Showcasing The Results Obtained

V. CONCLUSION AND FUTURE SCOPE

A. Conclusion

Given the current versatility and variety of network providers, the key is to determine which providers are strong enough with a good service range. The application will enable mobile users to identify which network provides good service in any given location and thus choose a network for their convenience.

Licensor/ Regulator and finally the TSP's can take proactive measure for network quality improvement based on the feedback of common man.

B. Future Scope

1) As of now the application is only for the android users , as a future scope we will try to develop an application for ios users.

2) This system will be more effective, efficient and user friendly by using better GUI, additional features and advanced new technology.

3) This system will be scalable, so we can scale up this system as per requirement.

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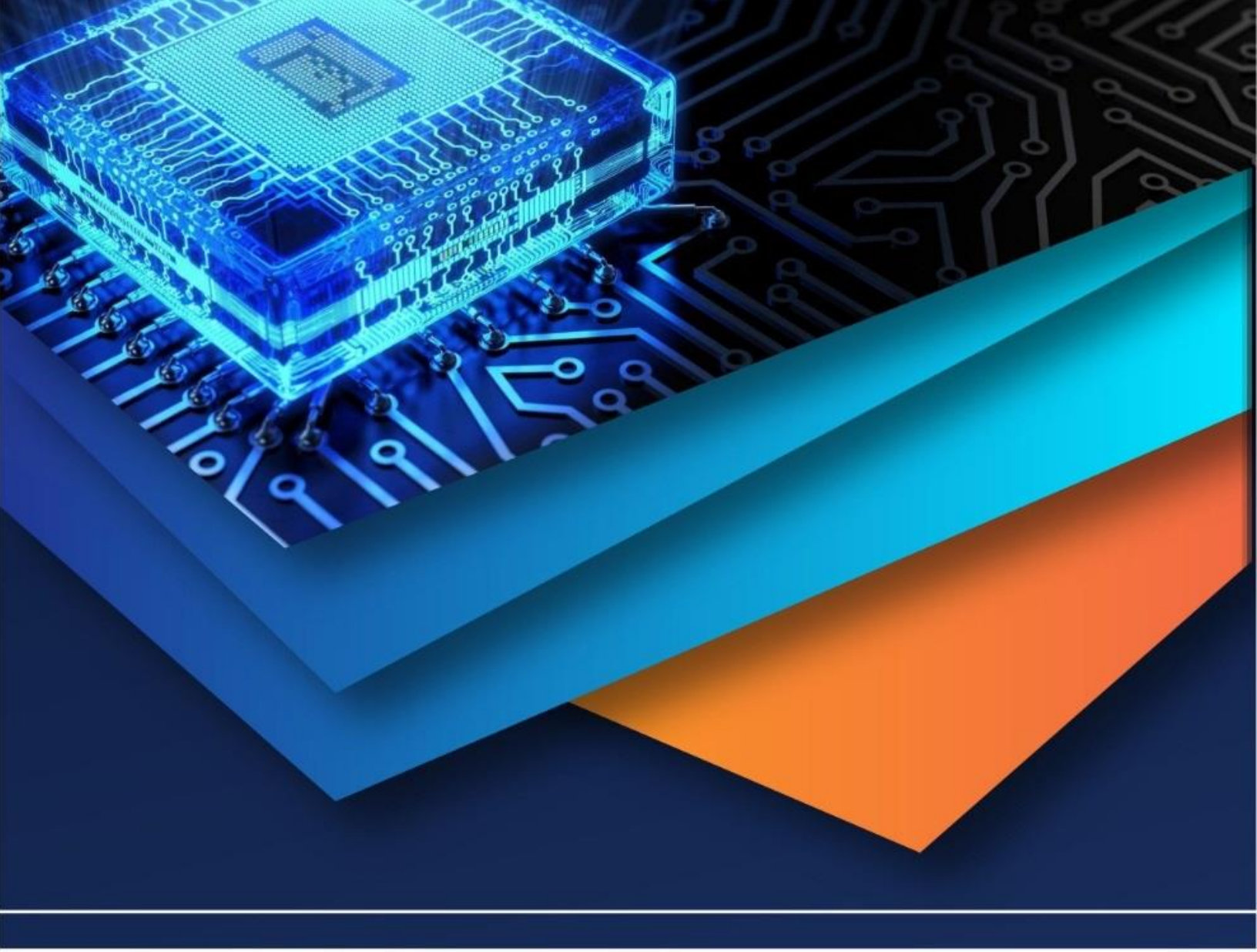
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