Emergency Medical Aid Using Android Programming

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Abstract—Creating an application which uses smart phones and utilize their capacity to reach out in all corners of the world .To implement remote medicine in android so as to make it available to the masses.To maintain data which would be vital in saving lives in case of any Emergency. To simply the process of blood banks Design hardware for ECG to take ECG on the go and calculate ECG over extended periods of time.Using ZigBee or Bluetooth to transmit Calculated ECG Data onto Mobile .To help people stranded in any kind of emergency by giving them easy access to Emergency Services and alerting their friends and family about it .To create an electronic medical file which can be stored on the device.

Keywords—Remote Medicine, Online Blood Bank, Digital Medical File, Emergency Medical Aid

1. INTRODUCTION

Now days, smart-phones are owned by most of the public but the proficiency of a smart-phone has not been brought into use much in the medical field. Our application targets mainly android users to utilize this capability to be used in the field of remote medicine. Though tele-presence and other miscellaneous methods are being used there is not much developed especially for health-care. Health-care is a field that is advancing and the populace concerned with health-care are growing day by day. Gone are the days when people used to take health-care for granted, people now are concerned and also spend a lot in health-care products

Fig 1.1 Block Diagram

We aim to extend the utility of smart phone to include the emerging field of Remote Medicine. We wish to keep lifesaving information at one's fingertips. Such data when by ones side can save a thousand lives by enabling the doctor to treat a patient without absolute need of his medical files in an extreme case of emergency.
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2. BACKGROUND AND MOTIVATION

The most important part of our project is to collect medical history and to make it available in the time of need. The size of data will be very small but it would be potentially lifesaving data. If emergency circumstances do arise then the application should be put into emergency mode by the press of a button and a message will be sent to the kin with GPS location. Blood bank details will be maintained and sent to the device whenever required. Multiple profiles can be maintained on a single device.

3. PROBLEM STATEMENT

Many people die unnecessarily even on busy streets .So many die because bystanders refuse to help. Some are just in a remote location that they themselves need to place a call for help. Even in large cities and after such advancement of technology we have to roam from hospital to hospital to check for necessary blood group that also in the time of dire need. We aim to aid all such people in their time of difficulty by using available technology and the fast growing field of remote medicine.Important medical details which include the persons medical as well as personal data will be always present on the person at all times. We all have mobiles with us at all times and in times of emergency it can be an invaluable tool to help us.
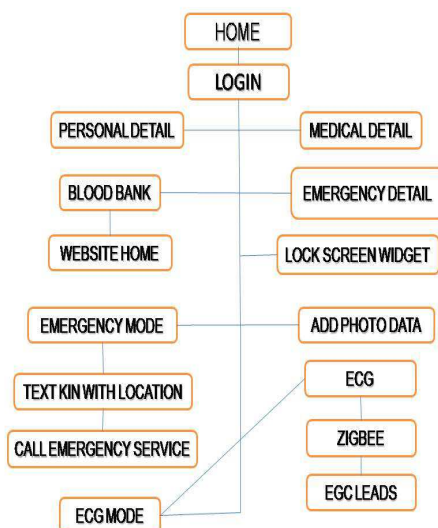
4. REVIEW OF LITERATURE

The existing technology is not being completely utilized in the health care business. The existing application offers very little and under utilizes resources. It does this all while being a paid application. The In Case of Emergency Application does not make use of any of the camera or scanning methods to maintain user's medical history and though such technology is available in hardware it is not being utilized in the software.

Now a day's technology is being adopted in various fields at a rapid pace due to it being so reliable and efficient even in adverse circumstances but yet it is to reach many a different fields one such field is remote medicine.

Though large machines have been developed to make an operation remotely from half way around the world, its use is limited to the public which is rich enough to use it. There is much more scope for research and growth in the field of remote medicine. Remote medicine is being adopted at some places in the United States and the United Kingdom.

Currently remote medicine only taps in into the rich patients who are willing to spend on this. But the expansion of remote medicine is imminent. And the current procedures include remote operations which are done through expensive machines. These facilities are not used even by all the rich people and remote medicine not utilized to its full potential. To advance Remote medicine and to reach out to all corners by enabling a single android phone to cover the medical files of an entire family. Enabling regular checking of ECG from anywhere using the portable ECG functionality. Smart phone manufacturers like Samsung are slowly starting to see this market and are making slow yet steady moves towards it [5].

Even after such modernization and the medical field being so cash strapped, there are no easy methods of obtaining blood in a time of need, doctors leave it up to the kin to obtain blood if the hospital doesn't have an affiliated blood bank. The kin may have to go from hospital to hospital to obtain the blood if it is of a rare kind for example an O- or AB- blood.

Our application intends to help such users as well by hosting a website and enabling blood banks to register as well as update frequently the amount of blood they currently have on hand [2] [4]. This will then be made available to the users as well as website visitors to obtain these essential details which make the process much more simple and easy to follow.

Medical data may also be backed up onto the cloud for easy access and security and also to serve as a backup [3] [4].

We plan on combining services provided separately into a well packaged free application with supporting additional hardware to enhance its features.

The existing software are paid and are limited in functionality as they only store personal data and display it and come at a considerable price even on the play store.

There are various applications which do different useful things but not any application which does them all. Thus we plan to expand on this current software and also make them free of cost on the play store.

We will pull data from the server in real time and display onto the cell phone of the user whereas the data on the server will be updated depending upon the blood bank and its policies [1].

We will use ECG leads and Analog to Digital Converter with a high pass filter and amplifier to an 8-bit microprocessor which will process this digital signal and send it to the phone through ZigBee [5].

5. CONCLUSION

The field of remote medicine needs to be expanded to grassroots applications such as ordinary Smartphone. This field of medicine has its growth stunted as only expensive machines utilise this technology. Thus we plan on utilising this technology so as to benefit the common man for a meagre cost.

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