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Tracking of Children using Zigbee Contraption Based on GPS and Android

Dr. Rajini Girinath[1]., Mrs. P. Nirmala[2], Kavitha. A[3], Kavipriya. A[4], Priyanka. S[5]
[1](M.E., Ph. D), [2]M.Tech, [3,4,5]Student, Department of Computer Science,
Sri Muthukumaran Institute of Technology Chennai, Tamil Nadu

Abstract: ***Zigbee procedure is connected with the android (Parent) and another is attached with the child. Parent can trail the child continuously; if child is out the Parent's range then notification is made to the parents mechanically. Parents can share the appliance's credentials to the community Networks. Once child is recognized right away location details are shared to the parents so that child is branded easily without mind dangling. Parents always worry about the possibility of kidnap of their children. This paper proposes an Android based solution to aid parents to track their children in real time. Mobile phones are equipped with location services capabilities allowing us to get the device location in real time. The solution takes the advantage of the location services provided by mobile phone since most of children carry mobile phones. The mobile application use the GPS and community Media services found in Android mobile phones. It allows the parent to get their child's place on a real time map.***

Index Terms: ***IoT, Bluetooth Low Energy, neighbour discovery, discovery latency, energy consumption.***

I. INTRODUCTION

Now days 80% of people in the world having well turned-out phones. The smart phone uses the people by different purposes. The major issue of child missing can be solved with the help of child track system android application. The android application uses GPS and SMS services and GPS help in locating the missing child's location by the survey of missing children in 2004. The parents are worried about their children. The project is developed for those parents that they have worried to miss their child. In Today's world lots of child's have smart phones. With the help of smart phones GPS and Zigbee based tracking application parents can watch on their child. GPS is combined to GSM based SIM card into mobile to watch on child's location. The GPS uses longitude and latitude to track the location of the child by using the Zigbee's ID is used to communicate intimator side and parent side application. Today most of the people uses Internet. Parent share the Zigbee's ID In Social Medias. The intimator get the ID and Search it on the web, if the child is near the range, it automatically goes to the maps and locate the child with latitude and longitude. So parents can easily find their child.

II. RELATED WORK

Newly, device discovery performance of classical Bluetooth protocols has been intensively examined through real time experiments, simulations, and formal modeling methods. The growth of related work section is divided into two parts namely, the first part is explaining the performance assessment of classical Bluetooth Networks, and the second part is explaining the device discovery process of BLE in detail.

A detailed concept on device discovery performance for classical Bluetooth versions 1.1 and 1.2 has been presented. The probabilistic model checking technique and the PRISM tool were used to calculate the performance bounds of device discovery in terms of mean time and the mean power consumption. Their study has proved that low level analysis can produce accurate results like those derived from simulation techniques, but if the analysis carried on high number of nodes it can produce insignificant results. Therefore this technique applied in congested environment.

An exhaustive experiment on real devices, exploring the parameter space to determine the relationship between parameter settings and power consumption. In an adaptive manner an algorithm is proposed to determine parameter settings, depending on mobility context in order to reduce mean power consumption for Bluetooth devices. The advantage between different parameters is not clearly explained. It appears like increasing the value of one parameter it can simultaneously affect another parameter. Thus the task proposed that the research cannot be applicable for next generation networks like IOT and BAN. Similarly classical Bluetooth inquiry procedure has been addressed. Different types of experiment can be performed to view that even though it required long duration for

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each node to become aware of its neighbours, The Bluetooth topologies can be obtained fast in 6s after the connection setup through discovered devices. This amount of time is very high for application where fast topology construction is necessary.

The end to end mobile service framework has been established. The framework relied on machine - readable visual tags and service selection rather than using standard Bluetooth device model to detect nearby mobile services. They demonstrated those tag establishments provide improvement over than standard Bluetooth device model. Although these intensive studies of classical Bluetooth model cannot be applied for BLE. Very little research work related to performance evaluation of BLE discovery process has been published.

An analytical model is predicted by developing a new BLE extension accounting for all protocols based on original Bluetooth and its validation through simulation in NS-2 has been proposed. After the comparison has been done the modelling results it provbeneficial guidance toward the required performance. During the course of discovering neighbours this model is used to determine performance metrics such as mean latency or mean energy consumption. The analytical model also discussed on classical ALOHA analysis to examined two types of metrics such as discovery delay and connection setup delay in WBAN applications. The modelling results as well as methodology may provide a potential guide to better enhance the performance of BLE advertising process. In addition they proposed an algorithm which achieves shorter latency is called connection report for BLE scanner. The main disadvantage of proposed scheme is very high and it requires high energy for scanning process. Energy consumption is highly important constraint in case of BLE implementation for short range of communication and hence it should be considered carefully. A general model for device discovery in multichannel scenarios was proposed primarily and simplified for BLE network with three broadcasting channels. The average discovery latency is derived through theoretical analysis. They revealed that improper parameter settings can significantly worse the device discovery latency and increase energy consumption. The wide range of parameters provides new features for BLE devices to customize the performance of specific applications. It is necessary to develop a new, accurate discovery model for existing BLE architectures. This encourages the discovery process of BLE and performing an intensive simulative evaluation.

Neighbour discovery and location maintenance in low power mobile networks has been widely studied in the academic journals. Involving every part the existing discovery and location schemes can be classified into two subdivisions one is explicitly and another is implicitly selected system based. Although BLE standard was introduced a few years ago, the technology got critical attention from academic community entirely.

The achievement of BLE technology and of the commercial hardware BLE transceivers were examined and compared with other state-of-the-art wireless communication technologies. The majority of applications are relatively to medicine and healthcare and boon from trivial connected between a sensor and smartphone. The new techniques for getting better accomplishment and capabilities of BLE communication were proposed. However, networking appearance of BLE technology has not received sufficient action over the recent years. Among the major reasons causing this were: a) the complicacy of BLE communication b) the absence of tools capable of replicating BLE networks. In statement the results of executing a network-level simulator for BLE.

III. DESIGN

This part provide immediate effect of the design of the Disco neighbour discover location protocol. Neighbour discovery grants two nodes with independent duty cycles and no prior application of intelligence information to reveal each other in bounded time when the nodes are within radio range of each other. Location allows nodes to declare messages to earlier discovered neighbours with predict and controlled delay. We initiate with a simplified version of the Disco algorithm that makes proving Disco's correctness straight course. We then relax the simplified assuming to flesh out a procedure that mechanism in practice.

Given the state of occurring of a plethora of discovery and location protocols, in Section 4 we choose to design EQS as a transparent augmenting middleware filter on the bottom of them. Given any timetable founded on these protocols, EQS transparently sort out the repetitive active slots according to indirect discovery and location. It furnish a single entity solution for highly separate, heterogeneous discovery and location protocols that may be prepared at individual mobile devices from miscellaneous mobile applications.

Based on this obvious and non-intrusive design principle, we do not observe synchronize devices by joining common active schedules. In fact, we consider how to inactive the schedule supposed to be active, not vice versa. Keep that the inactivation of certain active schedule may lead to the fact that a new neighbour cannot be founded by some schemes in the networks directly. But with location agreement services, the devices already founding each other function as a collection, and thus a

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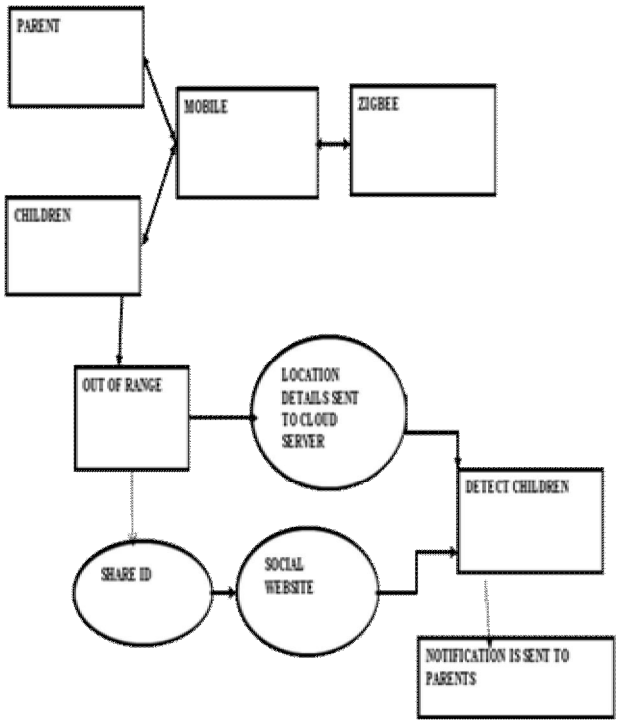
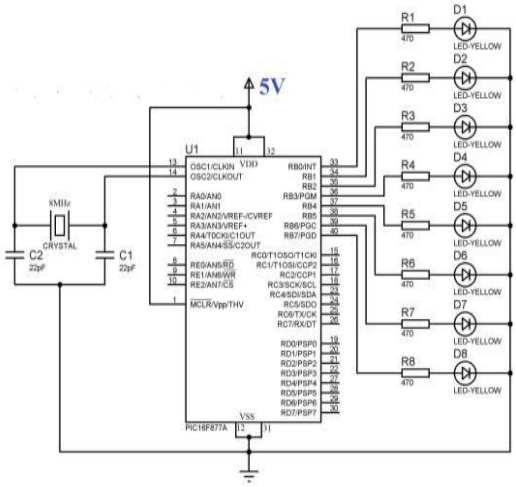
device discovering a new neighbour leads to a rapid propagation of neighbourhood information to another. According to the above composition philosophy, we face two design challenges: How to capture above indirect nature of neighbourhood information propagation, and how to advantage such a nature to adaptively filter out repetitive active schedule to save the energy.
To address these two challenges, we first propose a theoretical abstraction called extended quorum system to capture the indirect propagation and then we present our main design to sort out the repetitive active schedule to save the energy.

A. Block Diagram



B. Circuit Diagram



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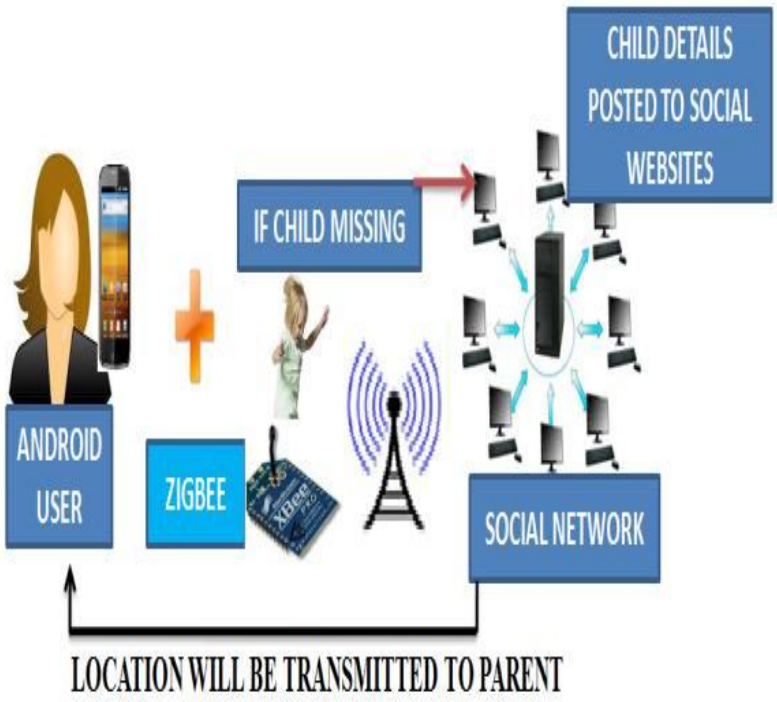
C. Architecture Diagram



D. Server Diagram Login Page

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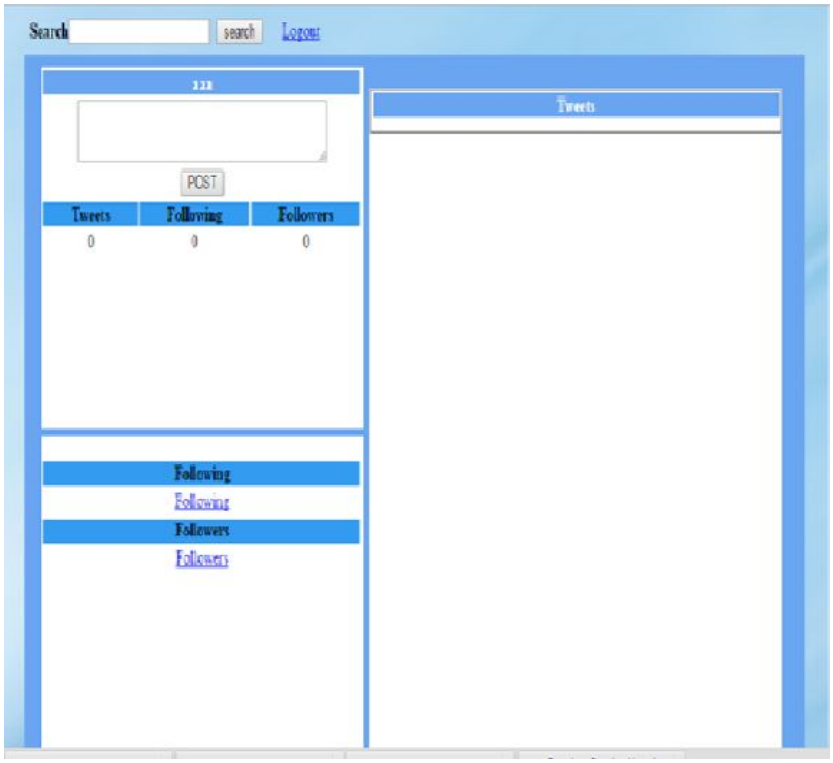
E. Registration Page

F. Online Web Page



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G. System Architecture

It plant premise we have various hardware set up along with the software tools. Some hardware tool

1) *Microcontroller:* A single-chip computer intended specifically for use in machine control, communication control, or process-control applications. It typically comprises a microprocessor, memory, and input/output ports. A archetypal microcontroller might have a comparatively short word length, a rich set of bit- manipulation instructions, and lack certain arithmetic and string operations set up on general- purpose microprocessors.
2) *Zigbee:* ZigBee is an IEEE 802.15.4-based specification for a suite of high-level statement protocols used to create personal area networks with small, low- power digital radios, such as for home computerization, medical device information collection, and other low-power low-bandwidth needs, designed for small level projects which need wireless connection.
3) *Buzzer:* To set up a circuit includes Microcontroller, Zigbee and buzzer. A buzzer or beeper is an audio signalling machine, which may be mechanical, electromechanical, or piezoelectric. Characteristic uses of buzzers and beepers include alarm devices, timers, in addition to verification of user input such as a mouse click or keystroke.

IV. CONCLUSION AND FUTURE WORKS

Finally this project was developed to able to locating missing or lost children. The solution planned in this paper takes advantage of the rich features offered in Androids smart phones. Developing this project would not have been possible without studying related and obtainable works. Some of these works relies on internet connectivity or a server that has to be up running. The proposed system relies only on two main services, telephony and location. Finally, like any software product or design, there is still span for Enhancement. Features can be added to enhance the system such as Geo-fencing, emergency alerts and many others. The proposed system will be implement, sustained, review and improved in a later work.

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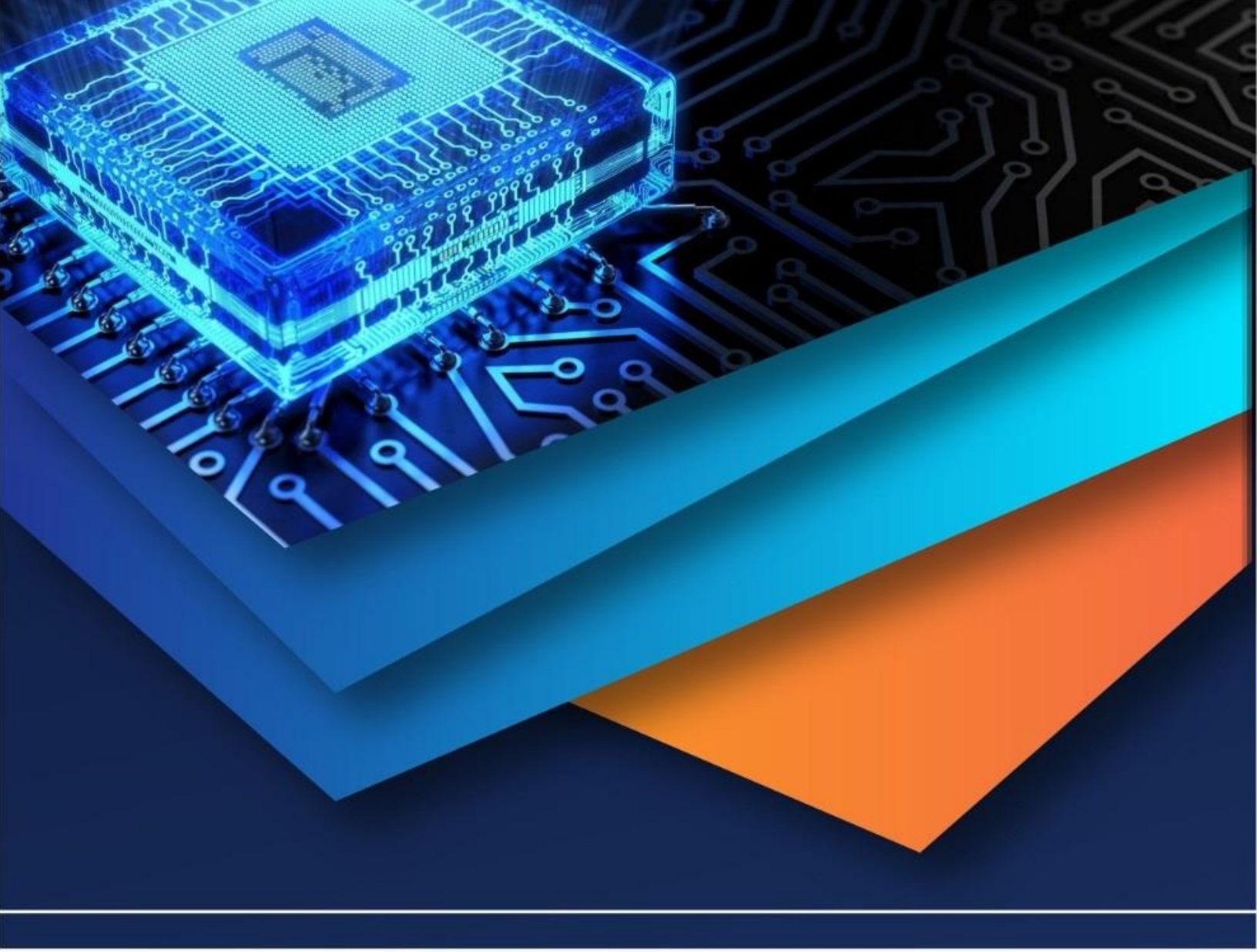

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