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Review on Internet of Things based Smart Baby Cradle

Amin Shaikh[1], Ankit Sharma[2], Naveen Yadav[3], Omkar Mane[4], Prof. Sneha Deshmukh[5]

[1-4]Student, Department of Computer Engineering, DPCOE - Dhole Patil College of Engineering, Pune, Maharashtra, India.
[5]Assistant Professor, Department of Computer Engineering, DPCOE - Dhole Patil College of Engineering, Pune, Maharashtra, India.

Abstract - *Today's lifestyle is fast-paced. Most of the working parents find it a touch difficult to manage work together with babysitting. They cannot keep a watch on their child all the time and is tough after long working hours. To assuage the baby by manually swinging the cradle may not be possible in such a case. If they need taken the assistance of a babysitter for it then also baby's safety-related thoughts keep getting into their minds. Hence there's a desire for a product that bridges this gap between parents and baby. This cradle system is proposed to assist these parents so they'll take excellent care of their baby from remote locations.*

Key Words*: *Smart cradle; DC motor; wet sensor; web camera; swing motion; U.V light; android device; Raspberry Pi.

1. INTRODUCTION

The Internet of Things (IoT), consists of all the web-enabled devices that collect and send information to the web. Today's lifestyle is fast-paced. Most of the working parents find it a touch difficult to manage work together with babysitting. This proposed system would give the parents a relaxing time, and allow them to take less stress about the well-being of the baby when they are away as they can get updates about the status of an infant inside the cradle. The other advantage is that alert messages will be issued on the occurrence of any activity that is abnormal and detected by the sensors. In this Smart Cradle, we have implemented a Multi sensor-based Baby Monitoring system using IoT. Cradle could be a device that's accustomed to placing babies to sleep. Cradle contains a servo motor that helps the cradle to swing when any Cry is detected or this feature can also be enabled 'On click on the web Portal or the Smartphone It takes a heap of efforts from parents to physically rock the cradle to come up with swinging motion. The smart baby cradle system is bundled with multiple features such as temperature sensing for detecting if anyone is present near the cradle or not. The camera monitoring system monitors the motion of the baby and detects whether the Baby is present in the cradle or not. Cry detection mechanism which detects a cry and gives an alert message to the web portal. The UV rays disinfection facility which would provide proper hygiene to the in infants as well as taking pictures of the baby would help to detect the time-to-time growth of the Baby. The projected plan during this image of a good cradle can permit the cradle to with efficiency integrate itself with a smartphone usually a smart device

2. MOTIVATION

Under fast-paced life conditions, everyone is busy in their professional life including parents. They leave the house early in the morning and come back before dinner time. Even the mothers are working. Thus, they do not have sufficient time to take care of their babies. Not all parents could afford a nanny to help them with their children. Then, after working for long hours, the mothers still have to manage the house and take care of their babies simultaneously. Due to less featured cradle systems and parents busy schedule we are implementing modern day cradle system.

3. LITERATURE SURVEY

In IOT Based Smart Cradle System by Madhuri P. Joshi she has proposed the Availability of high speed internet and wide use of mobile phones results in gain the recognition to IoT. One such important concept of an equivalent is that the use of mobile phones by working parents to observe the activities of baby while babysitting. This paper presents the planning of Smart Cradle which supports such video monitoring. This cradle swings automatically on detection of baby cry sound. Baby care is hard problem worldwide. It is very important duty as they are our future. Though mother's lap is best for baby, considering the need of present world and knowing the significance of baby care, this system is designed. This system is economical and straightforward to work which helps working parents

to manage their work. Video monitoring is made available through most commonly used android smart phones. The model has wet sensor to demonstrate baby's wetness situation, at the point newborn child wets, resistance value would change subsequently sending a signal.The cradle is comprised of an adaptable affecting device and distinctive sensor framework. Meanwhile, the cradle possibly starts to impact. They utilized 3 wet sensors arranged within the base of the cradle, one at the concentration and second at left and third at the right of the base. Proposal for a system of monitoring a baby on the basis of Global System for Mobile network was made by the researcher to convert it into electric signal, the electrical device operational amplifier is used for amplifying signal conditioning circuit. The signal conditioning is done by the operational amplifier.

The proposed system of Development of IoT Based by Prof. A.B. Tupkar provided live monitoring of the child and included a toy to sooth the child and provides rotatory motion using DC motor. It proposed the methodology for electronic healthcare or e-healthcare. The cornerstone of our paper was the ladies Empowerment; by providing them with an Automatic Baby Monitoring System, with a special specialise in developing countries. This project is that the personification of the Baby Cradle, caused by integrating distinctive features i.e. automatic cradle swing (using cry detection system), interactive toys and communication module (for monitoring purposes), during a single unit. The current era of digitization provides a large-scale availability of knowledge also as the computing capability which may be wont to bridge the gap between a toddler and a working mother.

Next paper by Waheb A. Jabbar proposes the utilization of "Smart Cradle" an E-Cradle which involves the utilization of Internet of Things. The proposed solution involves live monitoring of the kid through a mobile application remotely. The smart cradle incorporates the utilization of PIR sensor for monitoring the movement of the child; Noise sensor for the detection of the child's crying activity and automatically swings the cradle to soothe the child. The DHT sensor notifies the parent about the blood heat of the kid via text message, when the temperature goes above the set threshold.The proposed system uses the cloud service for remotely monitoring the kid . The system consists of a baby cradle that mechanically swings employing a motor once the baby cries in keeping with the sound device signal. Additionally, a mini fan mechanically opens to supply a cool temperature encompassing to the baby supported the temperature device. The oldsters will observe the traditional information recorded within the MQTT server cloud, like close temperature and remote switches, through the web victimization MQTT server, whereas the abnormal conditions are sent to the parents with triggering alarm to need acceptable actions. The oldsters also can monitor the baby's condition through Associate in The nursing external net camera and put on the lullaby toy settled on the baby's cradle remotely via the MQTT server to entertain the baby.

4. PROBLEM STATEMENT:

Most of the working parents find a bit difficult to manage work along with babysitting. We need to develop something unique that can help parents to have continues surveillance on their infants. Notify the parents via Web, Android Progressive App.

5. SYSTEM ARCHITECTURE:

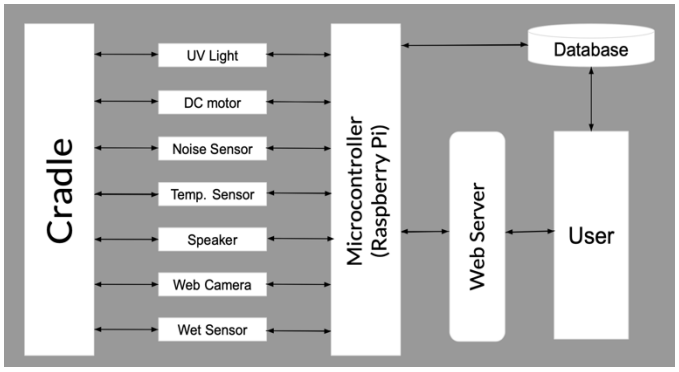

Fig: System Architecture

6. ADVANTAGES

1. Easy for parents to monitor their baby

2. Remote Access

3. Easily portable from one place to another

4. Easy User Interface

5. Easy to use

7. CONCLUSION

Baby care is hard problem worldwide. It is very important duty as they are our future. Though mother's lap is best for baby, considering the need of present world and knowing the significance of baby care, this system is designed. This system is economical and easy to operate which helps working parents to manage their work. Video monitoring is made available through most commonly used android smart phones. In future, more features like IR(Infrared) camera for night vision can be an extension of this system. Also other client applications i.e. applications for ios etc. can be designed for this system.

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