



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Issue 5, May 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

9940 572 462

6381 907 438

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IOT Based Baby Monitoring Smart Cradle System

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ABSTRACT: In this modern world, every parents are busy in his schedule. So parents are sustain to protect and take care of our new born babies. That's why I introduce this project to monitoring our babies for smart cradle system using arduino software. It is a brilliant, imaginative and defensive Cradle System to support a newborn child in a productive manner. All the information which is being taken from the sensors will be put away in information base & recognized at normal stretches. Using all those data and images, parents can be sure about the safety and well being of their babies at any time in any given place.

KEYWORDS: Cradle, Babies, arduino, Camera, Sensors.

I.INTRODUCTION

To design and development of an intelligent baby care, which has ability to monitor bed-wet condition, baby movement, and body temperature. To make baby cradle is safe and comfortable for baby with using sensor to detect the movement of the baby body as well as bed-wet condition to keep away body from hygienic environment. This baby monitoring smart cradle system is the finest solution for parents who cannot find sufficient time for their babies busy parents. This baby monitoring smart cradle system can detect the baby's body temperature, wetness and sound, especially baby's movements present position can be displayed on a mobile, this video can be seen mother, father or another person who can watch the baby away from him or her.. This baby monitoring system is capable of detecting motion and crying condition of the baby automatically. The arduino software to monitoring all activities of the baby. As we are very well familiar with the hurdles faced by Parents to nurture their infant and especially in case if both the Parents are working. To give 24 hours of time in such cases is next to impossible. So ,this system is useful for in this current world.

II.OBJECTIVES

The main aim of the system is to entertain and sooth the baby without human presence for some time period. Taking care of the child is considered as the responsibility of mother solely. Difficult for women to manage both work and home in this era of gender equality Reducing burden on women as a mother. Allow women to contribute more towards the society. Develop a system capable of soothing and monitoring the baby itself. Design a smart cradle, with distinctive features i.e. automatic swing (using cry detection), interactive toys and two way communication.

III.LITERATURE SURVEY

In system is for monitoring the baby in an incubator and records the relevant data into a computer. The data recorded by the system can be further referred by the neonatal intensive care unit (NICU) is used for research purposes. The study based on designing the system used to monitor that will have an incubator attached with humidity sensor. It is used to measure the humidity level, and a pulse sensor is attached. It is attached on an baby placed inside the incubator to monitor baby's heart pulse. The measured results such as the pulse rate and humidity level are sent to the PC with help of Arduino microcontroller. The main application of this system may be help in the future, it may also help doctors to monitor the baby condition using local area network(LAN) and internet. This is mostly aimed to be an application

that contributes towards remote baby monitoring system. The proposes the idea of automatic caretaker room for a baby. The main motive of this idea is to save time and energy of very busy parents. Working people are very busy these days. They have less time to take care of their babies. So, the whole room is set up as it can sense the activities of the baby and work according to requirement. Parents can save their time and energy as they don't have to go and check their baby again and again until they don't get any information about baby. Electric energy is also being saved because the devices will work only when they are needed. There will not be any wastage of electric energy. The idea of this scenario is accomplished by using sensors and a microcontroller. The sensors will sense the things happening and microcontroller will operate the devices under the conditions the parents set for these devices.

IV.METHODOLOGY

Normally, baby cradles are used in numerous hospitals and parenthood for parents and caretakers to get relieve and take rest. Basically in remote places the cradles are manually swung and require manpower and they also accept these ordinary cradles because of its low price and ease. These cradles are not automated and do not require electric power. Therefore, conventional cradles have to be automated to provide greater help, safety and security to the infants as well as the people monitoring them. Hence, research has been done on how to bring automation in this area while not compromising the safety and security of the infants as they are very soft and tender by nature. Few researches have investigated the possibilities of automatic child cradle in unique ways. A toddler integrated tracking has been proposed which decreases sound pollutants has been recommended. The primary function of the match built integrated is to lessen the noise that might disturb the toddler integrated by us built integrated built integrated relaxing songs. This built-in integrated can also regulate the room's mild depth integrated with the resource of a light sensor. However, our device has greater superior features, together with built-integrated real-time surveillance using IOT and visual monitoring integrated built-internet digital camera.

In this proposed framework, three sensors namely Gas sensor (MQ-135), Temperature sensor (LM-35), Sound sensor (KY038) and anticipating cloud is utilized, so that subsequent information having high precision about the infant's condition can be obtained. Additionally, we are obtaining live images of the youngsters through camera module through a Wide Area Network (WAN). Motors are also present which enable the swinging mechanism. In this task MCP3008 is utilized, so as to associate 3.3v pin from raspberry pi to all sensors. Similarly, MCP3008 and all sensor's ground pins ought to be grounded. Now interface sensor's yield pins to each station of MCP3008 (ex: LM-35 to station 0, GAS to station 1 and SOUND sensor to station 2 of MCP3008). Connect USB camera with raspberry pi0. Also connect the motors using the motor driver to Raspberry pi. Connect power supply for Raspberry pi. Plug the HDMI link in Raspberry pi from the screen using VGA to HDMI converter link.

V.APPLICATION

A smart baby monitor camera allows you to track your child's sleep activity and patterns. This can be helpful way to see what hours children fall asleep, if they are waking up several times during the night and if they are leaving their bed to play or head back down the hall to your room. A baby monitor, also known as a baby alarm, is a radio system used to remotely listen to sounds made by an infant. An audio monitor consists of a transmitter unit, equipped with a microphone, placed near to the child.

VI.RESULTS

In this system, monitoring and checking of baby's heart beat sound,moisture conditions, and crying sounds and more.

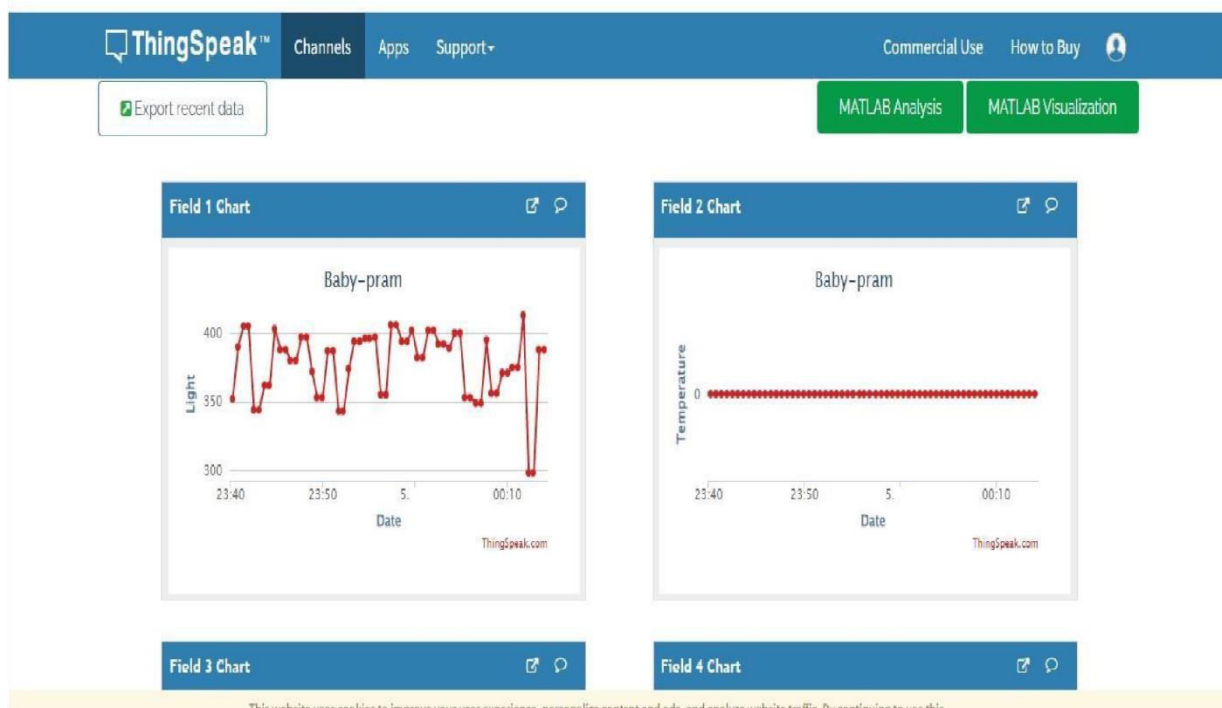


Figure 1: output of baby heart beat

VII.CONCLUSION

Our proposed framework targets observing the indispensable indications of the child, for example, pulses and internal heat level utilizing remote innovation and sound sensor used to quantify infant cry's. We additionally center on increment the extent of sending the data over the web to give far off access. The camera module consolidated empowers showing the visual feeds of the whereabouts of the child and keeping an eye over their developments in a limited territory. This framework defeats the disadvantage of the current frameworks which are awkward, less easy to use and costly.

REFERENCES

[1] . Oliveira-Jr, K. Cardoso, F. Sousa, and W. Moreira, "A Lightweight Slice-Based Quality of Service Manager for IoT," IoT, vol. 1, no. 1, pp. 49-75, Aug. 2020.

[2]. H. Chegini, R. K. Naha, A. Mahanti, and P. Thulasiraman, "Process Automation in an IoT-Fog-Cloud Ecosystem: A Survey and Taxonomy," IoT, vol. 2, no. 1, pp. 92-118, Feb 2021.

[3]. H and U. K, "Cooperative Spectrum Handovers in Cognitive Radio Networks," EAI/Springer Innovations in Communication and Computing, pp. 47-63, Jul. 2018. doi:10.1007/978-3-319-91002-4_3

[4] . Aziz, O. Schelen, and U. Bodin, "A Study on Industrial IoT for the Mining Industry: Synthesized Architecture and Open Research Directions," IoT, vol. 1, no. 2, pp. 529-550, Dec. 2020.

[5]. S. Fattah, N.-M. Sung, I.-Y. Ahn, M. Ryu, and J. Yun, "Building IoT Services for Aging in Place Using Standard-Based IoT Platforms and Heterogeneous IoT Products," Sensors, vol. 17, no. 10, p. 2311, Oct. 2017.

[6]. H. Anandakumar and K. Umamaheswari, "A bio-inspired swarm intelligence technique for social aware cognitive radio handovers," Computers & Electrical Engineering, vol. 71, pp. 925-937, Oct. 2018. doi:10.1016/j.compeleceng.2017.09.016

[7]W. A. Jabbar, W. K. Saad, and M. Ismail, "MEQSA-OLSRv2: A multicriteria-based hybrid multipath protocol for energy-efficient and QoS-aware data routing in MANETWSN convergence scenarios of IoT," IEEE Access, vol. 6, pp. 76546– 76572, 2018.

[8]R. Romansky, "A survey of digital world opportunities and challenges for user's privacy," Int. J. Inf. Technol. Secur., vol. 9, no. 4, pp. 97–112, 2017.



- [9]M. Sharma, G. Singh, and R. Singh, “An advanced conceptual diagnostic healthcare framework for diabetes and cardiovascular disorders,” 2019, arXiv:1901.10530. [Online]. Available: <https://arxiv.org/abs/1901.10530>
- [10]S.B.B.Priyadarshini, A.Bhusan Bagjadab,andB.K.Mishra,“TheroleofIoT and big data in modern technological arena: A comprehensive study,” in Internet of Things and Big Data Analytics for Smart Generation.Cham, Switzerland: Springer, 2019, pp. 13–25.
- [11]R.KrishnamurthyandJ.Cecil, “A next-generation IoT-based collaborative frame work for electronics assembly,”Int.J.Adv.Manuf.Technol.,vol.96, nos. 1–4, pp. 39– 52, 2018.
- [12]M. P. Joshi and D. C. Mehetre, “IoT based smart cradle system with an Android app for baby monitoring, ”in Proc. Int. Conf. Comput., Commun., Control Autom. (ICCUBEA), 2017, pp. 1–4.
- [13]K. Lohekar, S. Deshmukh, S. Ambekar, N. Gole, and L. Vina, “Smart baby cradle,” Int. J. Res. Eng., Sci. Manage., vol. 2, no. 3, Mar. 2019. [Online]. Available: https://www.ijresm.com/Vol.2_2019/Vol2_Iss3_March19/IJRESM_V2_I3_155.pdf
- [14]M. S. Rachana, S. M. Nadig, R. Naveen, N. K. Pooja, and M. T. G. Krishna, “S- MOM: Smart mom on the move,” in Proc. 2nd Int. Conf. Trends Electron. Informat. (ICOEI), 2018, pp. 1341–1344.
- [15]M. Levy, D. Bhiwapurkar, G. Viswanathan, S. Kavyashree, and P. K. Yadav, “Smart cradle for baby using FN-M16P module,” Perspect. Commun., Embedded-Syst. SignalProcess., vol. 2, no. 10, pp. 252–254, 2019.
- [16]S. Brangui, M. El Kihal, and Y. Salih-Alj, “An enhanced noise cancelling system for a comprehensive monitoring and control of baby environments,”inProc.Int.Conf.Elect.Inf.Technol.(ICEIT),2015,pp.404–409.
- [17]M. Goyal and D. Kumar, “Automatic E-baby cradle swing based on baby cry,” Int. J. Comput. Appl., vol. 975, p. 8887, Jan. 2013.



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Impact Factor: 8.423



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