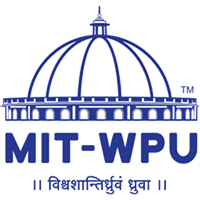
**A**

**PROJECT REPORT ON**

**BABY SWING CRADLE FOR SMART PARENTS**

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**Submitted to:**

**School of Computer Engineering and Technology**

**MIT World Peace University, Kothrud,**

**Pune 411 038, India**

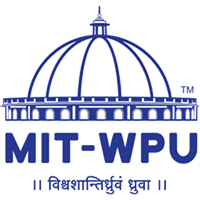
**By**

1. RAJ DHAMDHERE (PG19)
2. AAKASH SUKRE (PG25)

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**PROJECT REPORT ON**

**BABY SWING CRADLE FOR SMART PARENTS**

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**UNDER THE GUIDANCE OF**

**PROF. MS. BHALEKAR M. A.**

**SUBMITTED BY:**

1. RAJ DHAMDHERE (PG19)
2. AAKASH SUKRE (PG25)



**CERTIFICATE**

This is to certify that the below mentioned third year Diploma students have carried out the necessary project work on “**Baby Swing cradle for smart parents**” in the department of Computer Science and Engineering, MIT-WPU. They have completed this project work under my guidance in satisfactory manner in May 2019-20 of third year of Engineering.

Computer Science and Engineering students have successfully completed project on “**Baby Swing cradle for smart parents**” towards the fulfillment of their Engineering in Computer Science and Engineering in academic year 2019-2020.

**Prof. M. A. Bhalekar Dr. M. V. Bedekar**

**(Mini Project Guide) (Program Head)**

**Place:** School of Computer Engineering and Technology, MIT-WPU, Pune

**DATE :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**ABSTRACT**

In this 21st century, both men and women share equal rights, day by day the technology also grows very fast and the human makes it. So, it is very important to take care of the next generation, a special care should be shown to them especially babies. This system deals with design and implementation of smart baby cradle system which is special gift to parents in this century. The objective of this paper is to design a smart baby cradle with multiple features which helps in monitoring the babies and updates the baby’s status to parents so that they can ensure the proper care and safety of their babies. This design encloses the different features like camera monitoring, automatic swinging of cradle when baby crying and video output of baby’s present position can be displayed on a display monitor so that the mother or another responsible person can watch the baby while away from him or her. This system was designed using raspberry pi 3, PIR sensor, sound sensor, Servo motor, Web module and camera. Camera is used for monitoring babies which could be seen by parents at any time and also this is to watch baby when parents was engaged with work.

Implementation of this system was done using raspberry pi 3 which helps in enclosing many features in a single system. This system helps parents in taking care of their babies in a special way. This proposed system can provide an easier and convenient way for busy parents in terms of taking care of their babies.

**INTRODUCTION**

Embedded system is the combination of bath hardware and software which is used in today’s technology to implement desired function. The technology using embedded system is seen everywhere now a days. Today’s parents could not spend much of their time in monitoring their babies because of their busy work and lack of time. They always need a care taker as a safe guard for their babies but now technology helps them by providing a smart baby cradle with which they can monitor their babies anytime.

This system of baby cradle with applications clearly bears a note that 24 hours security is the most important concern in this design by providing camera. It is a purpose-built design with the aspect of providing wellbeing for babies.

Our design is based on embedded system which encompass monitoring in the ways like when the baby starts to cry then the cradle starts to swing automatically, if the cry lasts for more than 2 minutes then message will be sent to parent’s (number which has been added in program during design) mobile number.

**WORKING PRINCIPLE**

The working of smart baby cradle is designed like there are different modules which features corresponding work in the design like PIR sensor, sound sensor are about to be described with features and the method of working. Camera will be in ON condition always. The SMS generation method is done using the web server, way to SMS server has been used and the way that SMS is sent is explained using the block diagram.

**Automatic Swinging of Cradle**

The cradle is designed like it starts to swing automatically when the baby starts crying. Here we have used sound sensor which senses crying sound of the baby and give information to raspberry pi, then the servo motor starts to rotate thus the cradle swings. When the baby cries the sound is absorbed by the sound sensor and it makes the motor to swing. This system emphasizes the importance of child care.

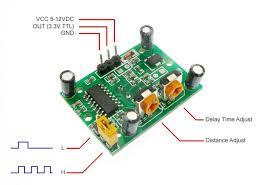
**Sound Sensor**

A sound sensor detects the audio intensity. The main component of the module is sound sensor, which isLM386. It takes analog input. Here it takes the crying sound of the baby. The sound intensity level is measured in decibel(dB).



**PIR Sensor**

The PIR sensor is used for motion detection. It is used to detect a moving object particularly people. In this system the PIR sensor is used to detect the baby in the cradle. Motion detection is very important, especially in protecting infants. It is mainly used for security purpose.



**Camera**

Camera is placed in the cradle so that parents will get to know about the baby’s movement and the happenings instantly. This will help them to know when their baby needs their care. The camera placed in cradle will records all the movements of the baby and transmits it to the parent’s mobile. When the parent’s wants to know about their baby then can watch it in their smartphones.

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**Connection**

TCP/IP enables the smart baby cradle to connect to Wi-Fi networks for communication, allowing remote monitoring via real-time video streams to smartphones or computers. It ensures secure data transmission, utilizing encryption and authentication protocols. Integration with web services via TCP/IP enhances functionality, facilitating interactions with cloud-based services for storage, analytics, and personalized alerts.

**CONCLUSION**

Technology has been developed in a great way that it makes human work simpler. So, in that aspect to convenient the baby care smart baby cradle has been designed. The automatic electronic baby cradle is the finest solution for today’s parents who cannot find the sufficient time for their babies. This automatic baby cradle would let the working mother to do household works besides taking care of baby at the same time. It is economical and user friendly. The automatic baby cradle can be used in hospitals and home. It is very useful for working parents and hospitals to take care of babies.

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