Review Paper on –Baby Cradle Monitoring System

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ABSTRACT- In this 21st century, both men and women share equal rights, they both work hard equally to maintain the social status and run in this fast-growing world. 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. Our system deals with design and implementation of smart baby cradle system which is special gift to parents in this century. The objective of this system is to design a smart baby cradle with multiple features which helps in monitoring the babies and updates the baby's status to parents. This design encloses the different features like camera monitoring, automatic swinging of cradle when baby cries, sensing the wetness of baby's bed, monitoring presence of baby in the cradle, all these features encloses a SMS module where message about baby's cry, wetness in bed and absence of baby in the cradle are sent to parent's mobile number to intimate them about their baby.

Keywords- *Automatic swinging, Raspberry pi 3, Sensors, SMS module.*

INTRODUCTION-

The baby monitoring system is a kind of alarm system which can detect babies' movements and activities and can convey the message about the condition of babies to the concerned authority via a radio or mobile or even a display. Since the very beginning of humanity, families have had instincts to secure their babies from probable dangers and risk. However, the way by which parents look after their children has changed with the technological breakthroughs.

They are now thinking about adopting the technological and engineering inventions for getting advantages and benefits in terms of safety issues of their babies. In this era when parents are busy with their career, a modern baby monitoring system can be a solution for handling babies properly instead of keeping them in babies' day care centers or appointing a nanny for them.

Monitoring a baby continuously is really a tough job as well as it is not possible for the parents to carry out their babies all the time with them especially while working. Hiring a caregiver for the non-stop monitoring of babies is an option when parents are busy at home or in the working places or as an alternative solution is day care center. But these two methods may not be commodious for parents according to their demands. Most importantly parents do not get surety about their babies' safety in both of the cases. In this perspective, a baby monitoring device can be the best solution to remove the anxiety and stress of the parents

LITERATURE SURVEY-

Author had developed a system which is based on commercial GSM network. Vital parameters such as body temperature measurement using LM 35, Heart rate using IR Transmitter and Receiver, respiratory rate by using Piezo film sensor located on Patient's Chest and blood Pressure are sensed, amplified with variable gain, filtered and given to microcontroller. Remote subsystem with GSM module receives data which is then send to a server by a USB port. Data are stored on the server and remotely displayed in a web site. In SMS based telemedicine system, patients temperature measured by Infrared temperature sensor MLX 90614 and ECG signals acquired with electrodes interfaced with the microcontroller PIC16F877.A wearable hardware gadget is developed which captures the biological status of the baby such as motion, temperature and heart rate sensors (both optical and pressure) which are controlled by the microcontroller and connected to the Bluetooth module to provide wireless communication. In paper, the temperature and humidity parameters are monitored. A skin-temperature probe, the air temperature-probe was used to monitor the temperature around the baby and humidity of incubator was monitored using the humidity sensor from SYHS2XX series. This signals are interfaced to PIC microcontroller 18F4550 and GSM modem is used for communication.

EXISTING SYSTEM-

In this existing system sensor are used to know the condition of baby but that will restricted to particular area where if any problem parents have to be in that area and has to and check the condition of baby manually.

MATHEMATICAL MODEL-

System Description:

$S = (I,O,F)$

Where,

- **S: System.**

- **I = { PL,MV,TEMP,WL,BI,BV}** are set of Inputs

Where,

  I_1 : Parents Login

  I_2 : Moisture Value

  I_3 : Temparature in Cradle

  I_4 : Water Level in Cradle

  I_5 : Babys Image

  I_6 : Babys Voice (If He/She is Crying)

- **F = {MD,SMIP,WC,CT}** are set of Function

Where,

  F_1 : Moisture Details

  F_2 : Sending Sms and Images to Parent

  F_3 : Water Level calculation

  F_4 : Check Temparature

- **O = {GBIP,HM,TP}** are set of Output

Where,

  O_1 : Getting Babys Information to the Parent
  O_2 : Helth Monitoring of Baby
  O_3 : Auto Toy play if Baby is crying

- **Success Conditions :**

  Sensor embedding, Location details, proper database.

- **Failure Conditions :**

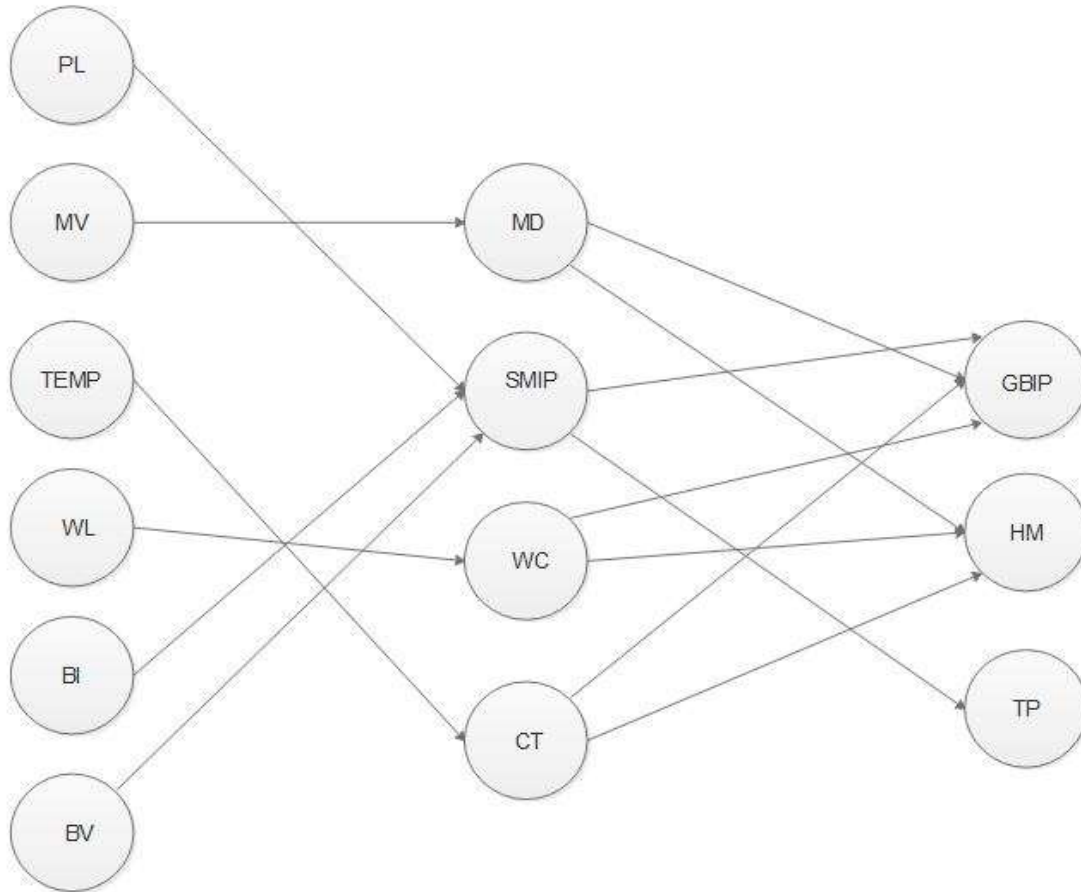 No database, internet connection

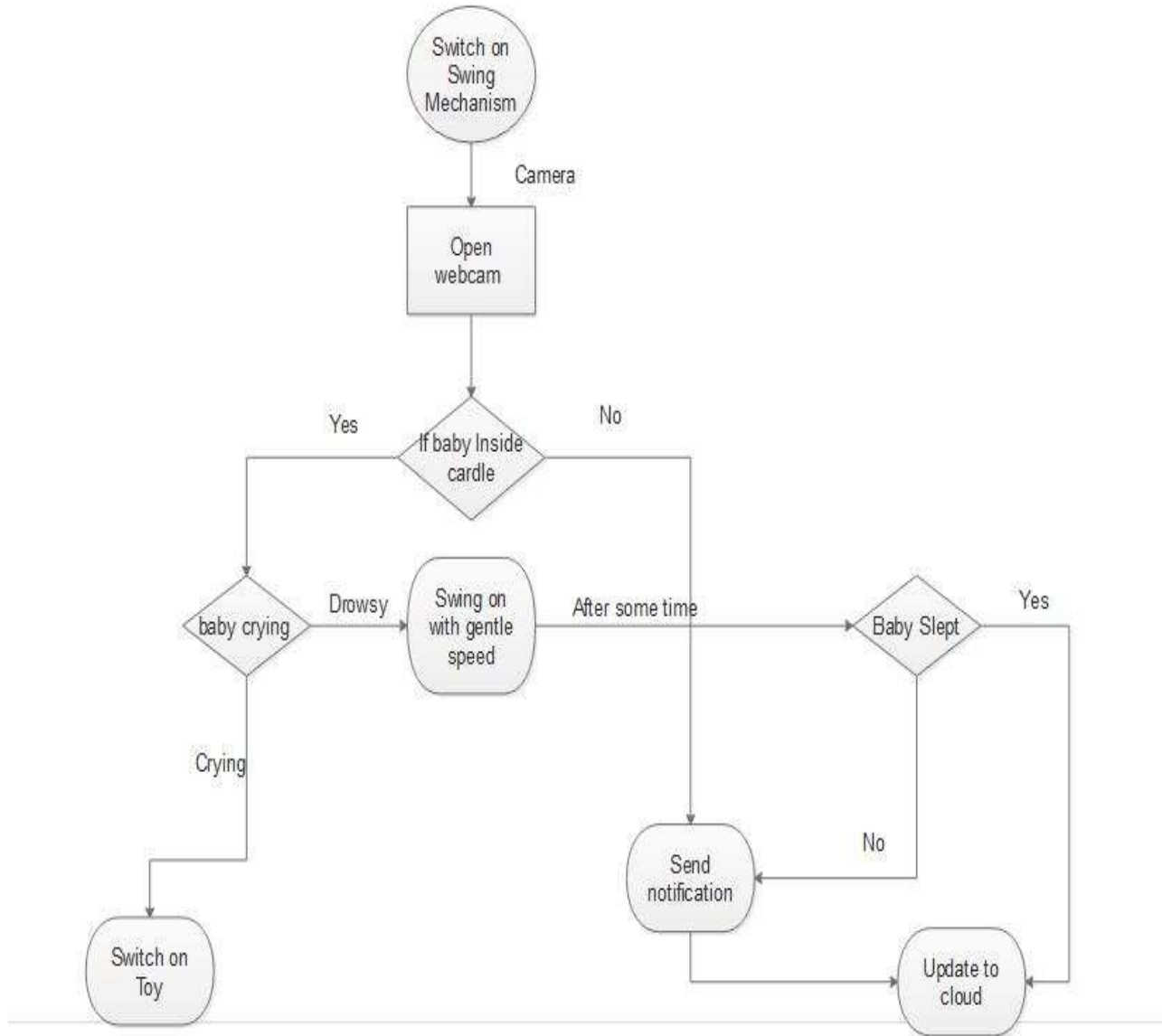- **Venn Diagram :**

Fig: Venn Diagram

DATAFLOW DIAGRAM-

Fig: Data Flow Diagram

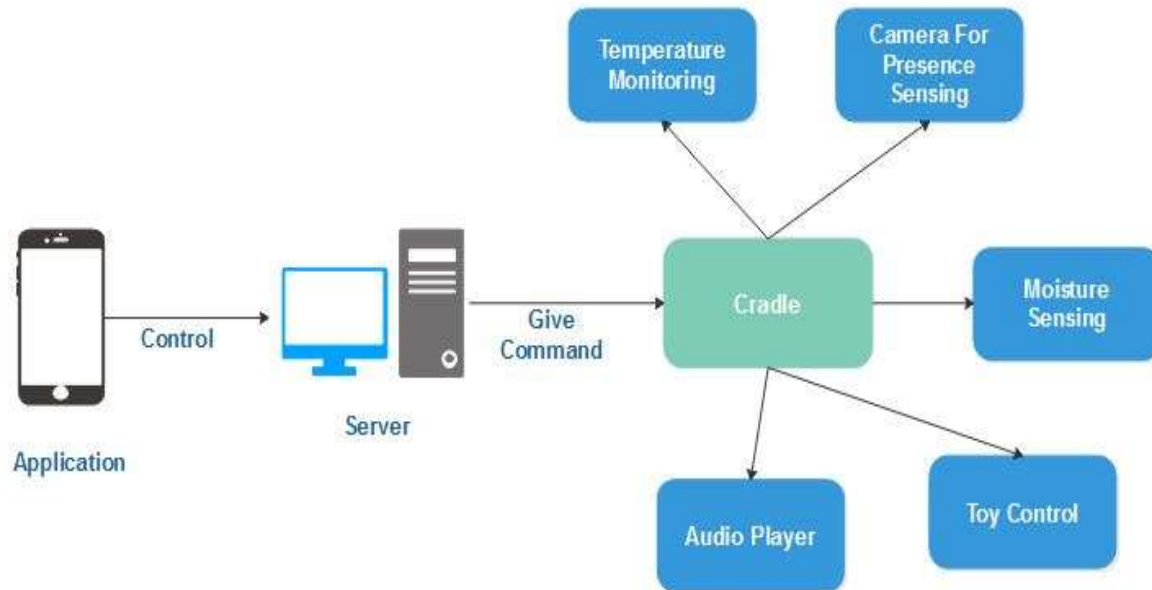## 4 .PROPOSED SYSTEM- SYSTEM ARCHITECTURE

Fig: Architecture Diagram

WORKING –

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

CONCLUSIONS-

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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