

AN IOT BASED BABY MONITORING AND SMART CRADLE SYSTEM

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Project Summary

- IoT Based
- Baby Monitoring and Smart Cradle system
- Purpose – to monitor an infant virtually by working parents

Objectives

- To help working parents to monitor their child via a mobile application
- To use an audio and video data to soothe/relax the crying baby when required

Problem Statement

- Difficult for working parents to babysit simultaneously
- Parents tend to leave their child with babysitters and yet not satisfied

Novelty

- Video and Audio monitoring
- Temperature Sensor
- Audio : Recorded Audio and/or Live talk with mother
- Video: cctv to monitor the child whenever required
- Alert Messages

METHODOLOGY

Node MCU (ESP8266): Node MCU controls the whole system

Motion Detection:

- PIR sensor is used
- Checks the presence of a baby in the cradle
- Used for security purposes

Audio Detection:

Phase 1: Infant Cradle Monitoring System

- Condenser microphone to detect the baby cry

Phase 2: Real-Time Infant Monitoring and Cry Detection

- Raspberry Pi 3 present near the child with a mic plugged with it
- Zebronica Mic to record the audio signals

METHODOLOGY

Speaker

- Frequency is checked and if the frequency is matched to the baby crying frequency then automatically a song is played

Wet Sensor

The wet sensor detects the wetness of the baby and alarms the parents to change the cloth of the baby.

Recorded Audio:

APR Module

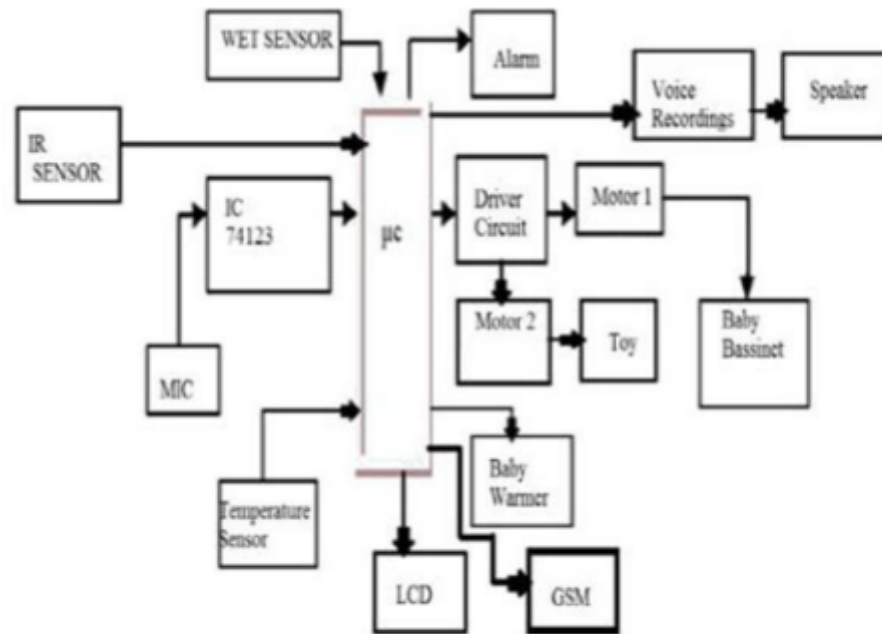
The APR is a voice Recording Module. This is used so that a melody recorded is played on loop when the cradle swings. Thus, it operates on the functioning of swinging.

Temperature sensor

DHT11 (Temperature and Humidity Sensor)

The temperature sensor measures the temperature around the cradle and if the temperature is more than 39°C with respect to the room temperature, it alerts the parent.

Block diagram:



Proposed Outcome

- To design an affordable toxic gas detection system for sewage.
- To detect the presence of toxic gases in sewage tunnels before manual entry.
- To monitor poisonous sewage gases.
- Alert system for sewage workers.

Work Plan

Project Duration: 18 Months

Schedule of Work:

- Study of sensor technology - 3 months
 - Study of Image processing - 1 month
- Data retrieval from cloud- 3 months
- Mobile Application Development & Testing - 4 months
- Integrating Mobile Application with sensor system - 2 months
 - Integration of Real-Time Infant Monitoring and Cry Detection with Infant Cradle Monitoring System - 2 months
- Document and report preparation - 1 month

Budget

S. No.	Component	Unit Price	Price in INR
1	Camera – 1 No.	3000	3,000
2	CCTV – 1 No.	2,500	2,500
3	Raspberry Pi – 2 Nos.	2,000	4,000
4	Zebronics Mic – 2 Nos.	2,000	4,000
5	Arduino Uno – 2 Nos.	1,000	2,000
6	APR Module – 2 Nos.	500	1,000
7	USB Sound Card – 2 Nos.	300	600
8	PIR Sensor – 2 Nos.	800	1,600
9	Node MCU – 2 Nos.	400	800
10	Microphone – 2 Nos.	1000	2,000
11	DHT11 - Temperature Sensor – 2 Nos.	500	1,000
Total			22,500

References

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Thank You