SMART CRADLE SYSTEM

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Abstract

In this technical world, many parents find a hard time to take care of their children as they are busy with their jobs and all their other work. Many people think that taking care of the baby is the duty of the mother only. But it will be a very burden for the mothers to do all the household work and their job and also take care of the baby on the other hand. So, for people who believe in technology, this is a smart cradle that will be connected to the mobile of the parents. This system will help the parents to take care of their babies even from a long distance. This system is built based on the 4 parameters. They are wetness, motion, temperature and humidity, and live streaming of the baby. Here DHT11 sensor is used to detect any temperature increase in the room and baby movement is detected by the IR sensor and live streaming will be provided by the esp32 camera. GSM module is also used to send alert messages and calls to the parents if any uncertainty is found with the baby and here will be automatic swinging also be added. This proposed system will decrease the burden on the parents and also helps to make the baby safe without any discomfort and give relief to the parents.

Keywords: Wetness Sensor, IR sensor, Temperature and humidity Sensor, Smart Cradle, GSM Module,ESP32 cam

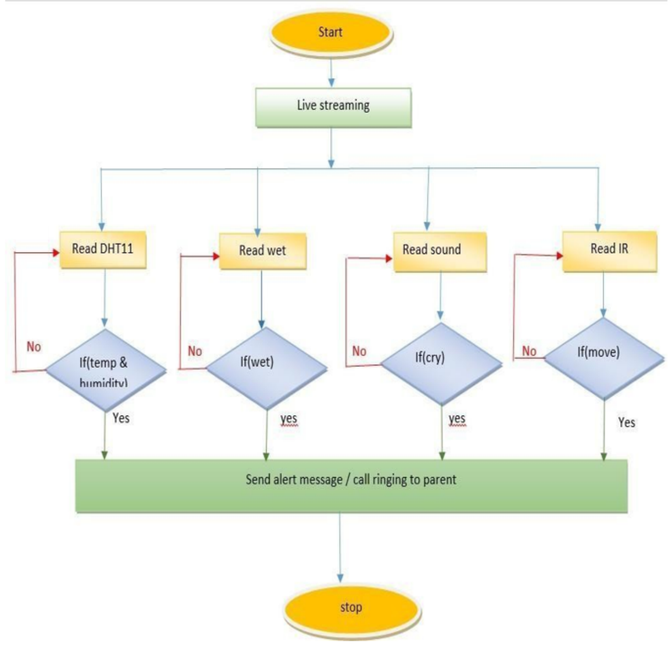
Introduction

Generally, a smart cradle is used to make the baby sleep safely. Most of the cradles these days are more costly but with fewer features. Some electronic cradles are used in cities but they are not safe because the signals from those electronic devices may harm babies. Babies feel more discomfort and cry even in the middle of the night which make both the baby and mother lose their sleep. It will be more burden for the parents to balance both personal and professional life. Sometimes this may show some effect on their professional work. This may lead to stress for the baby and even headaches and other health issues if they are left in the cradle. Another important thing to be considered is that nowadays most of babies are dying due to improper care and recklessness of their parents. Sudden infant death is the saddest thing to hear. As this cradle is designed in such a way to give real-time information about the baby. So that parents can check their baby's condition even if they are engaged in other work also. Internet of things is the most frequently used word these days.

Proposed system

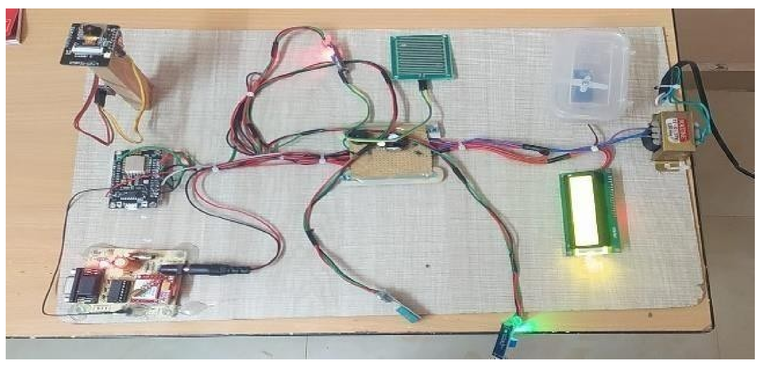
In this system at the initial stage as the system is started live streaming will be provided continuously until the system gets off using an ESP32 camera.Based on the other 4 parameters such as temperature, wetness, movement, and baby cry detection, the system responds either by sending the alert messages or calls if any output is from the sensors or just continues checking if no output from the sensors.If any issues,continuously restart the system until it responds in the correct way.

The proposed diagram is shown below.



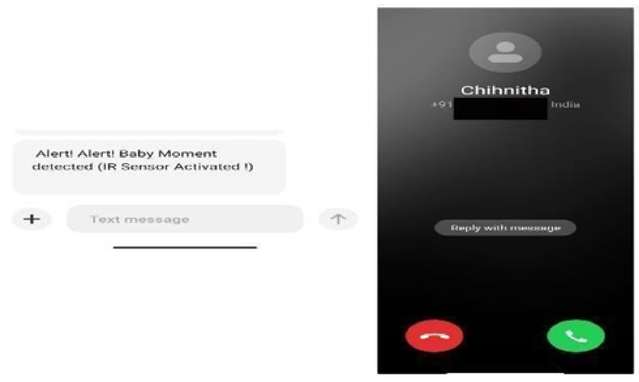
Results

The final system is shown below



The wetness sensor activation output is shown below.

The IR sensor activation output is shown below.



The DHT11 sensor activation is shown below.

The outcome of all the results is to send an sms alert or call to the parent.

Conclusions

As the technology is being increased, this smart cradle helps most employed women to give their babies a safe environment to sleep in when they are engaged in other work. This smart cradle provides continuous monitoring of the baby and if any uncertain conditions occur then it will notify the parentâs phone number and make calls if temperature and movement are detected. This cradle will be less costly and handy to use and also provides a comfortable place for the baby to sleep. The infantâs health is the major parameter that is to be always monitored This cradle will help the mothers to do their household work besides taking care of the baby at the same time using smart devices such as smart phones and laptops.

This system can be enhanced by developing an android application with the best interface, with which users can remotely operate the cradle and can be able to connect with the cloud.

References

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