
Preventing Sudden infant death syndrome

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I. Introduction

Sudden infant death syndrome (SIDS) has been a serious problem facing infants between two and four months, when their sleeping patterns are still developing. It is an unexplained death of a baby that occurs at night during sleeping time due to high temperatures, incorrect sleeping position or sleeping on a mattress that is not firm. The reason we have selected this problem is that up to now, scientists did not discover the treatments of this syndrome. However, our project will prevent its occurrence by prohibiting its risk factors with the help of motion and temperature sensors as well as a firm mattress.

By estimations, statistical researchers have found that there are approximately 2,500 infants who die of SIDS every year in the U.S. This rate has decreased in the recent years due to technological advances. We predict that our project will decrease the death rates in the society in the following years.

II. Abstract

Our project is called Preventing Sudden Infant Death Syndrome (PSIDS). It is a simple smart baby crib that is going to help in preventing (SIDS). The device helps control SIDS factors and prevents it by detecting the motion and the temperature of the baby which are the physical factors of SIDS. When the baby safe sensors detect a high temperature or abnormal motion, it releases a loud "bleep" sound which warns the parents. Our smart crib consists of 3 motion sensors and a temperature sensor along with a small fan, and all the sensors are connected to a buzzer through the Arduino Uno board. These motion sensors are attached to a firm mattress so the baby can sleep on it safely without any harm. These sensors and buzzers will help in controlling SIDS risk factors and allow the parents to identify the abnormalities with the infant easily.

III. Our Goal

We are aiming to tackle the third goal which seeks to ensure health and well-being for all, at every stage of life. We are aiming to reduce the deaths caused by SIDS and raise awareness and shed light on this syndrome.

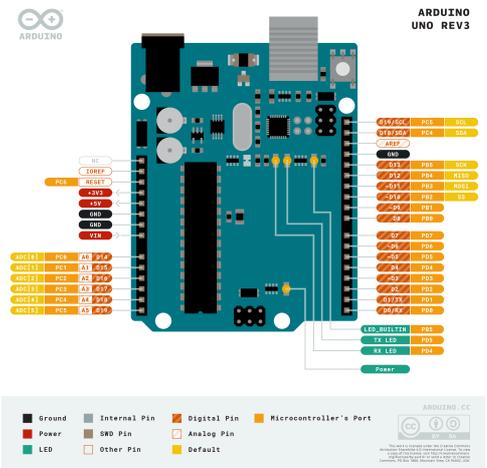


IV. Our Journey

Since all of us are health students, we have no background knowledge regarding computer science. Learning a new topic and a new coding language and balancing it with school was quite difficult. Often, we would find ourselves stuck at a block of code or our sensors would not be programmed correctly. Though after time, we got used to this

new language and saw the potential of integrating computer science into health fields.

By researching of this new disease, we learned new skills and knowledge along the way. Many of us learned how to program using arduino language online. We learnt about sensors and detectors and we knew how to link them with buzzers. Implementing the project and the programming went well, and all as should be. The sensors and crib match the factors that we want to prevent. We have shed light on this disease and many have supported us and learned what SIDS is. Since we are all students, we have been communicating well together and meeting up during school breaks to tackle the new challenges of the project. We learned that this disease is something we must keep an eye on, and we learnt its impact on our economy, community and on the healthcare.



After the COVID-19 outbreak, our school was shut down, and we started distant learning. However this did not stop us from continuing our journey.



We downloaded the Microsoft teams app and zoom where we would daily host meetings and talk about our next step in improving our project. This wasn't easy as many our plans such as meeting SEHA, the health authority in our country, was postponed, and we were unable to follow up on our project with them. However, we are still determined, and we will keep working until we get our crib to every home in the country, and eventually the world.

Fortunately, before our school ended, we were able to showcase our project in the TVET innovation week event, where we showcased our project to over 250 visitors and students. It was amazing getting to show everyone our project and educate them about the importance of our project and it's impact.

