Team 16 - Kiran Bisarya, Jonelle Gamble, Amanda Nelson, Evelyn Thomas, Rikki Augustine Initial Project Description

Project Name

SIDS Monitor

Project Synopsis:

To prevent SIDS by means of keeping track of movement (rolling over), temperature, and breathing patterns, and through an application. The heart rate and sound modes could potentially be added later on.

Project Description

Sudden Infant Death Syndrome (SIDS) is the unexplained death of baby less than one year old. Thousands of babies die in the U.S. each year without any clear reason or warning signs. Although there is not a single cause of SIDS, there are many factors that can put a baby at risk for it. This project explores many major causes of SIDS, there are many factors that can put a baby at risk for it. The project explores three major causes of SIDS: suffocation from an infant rolling over onto its stomach, overheating, and respiratory infection. We will also be detecting external sound factors that can lead to SIDS, such as crying and sounds of discomfort. Programming for each of these modes will be done on the Arduino IDE software and uploaded to the Circuit Playground, a single board microcontroller containing features such as an accelerometer, a temperature sensor, and alarm, buttons. We will also be creating an app to alert parents if any of these causes are met. The app will also include a short quiz to determine any existing factors that could put the infant at risk of SIDS.

Project Milestones

First Semester:

- Project Proposal Report (October 25)
- Project Proposal Video (November 15)
- Finish 3 Modes (movement, breathing patterns, and temperature) (January 18)
- Research safety and health risks (December 31)
- Front end/user interface implementation of application (January 10)

Second Semester:

- Final Design Document (March 1)
- Back-end implementation of application (April 20)
- Implement notification functionality (April 27)
- Finish heart Rate and Sound mode (April 1)
- Final Project Video (May 1st)

Gantt Chart

	October					November				December		January		Februa	February		March					April					Ma
Lst Semester																											
Project Proposal Report	1-Nov	1-Nov	1-Nov	1-Nov	1-Nov																						
Project Proposal Video						21-Nov	21-Nov	21-Nov	21-Nov	21-Nov																	
Finish Movement Detection mode												10-Jan	10-Jan														
Finish Breathing Pattern Mode												10-Jan	10-Jan														
Finish Temperature Mode												10-Jan	10-Jan														
Research Health and Safety Risks											31-Dec																
Frontend/User Interface																											
implementation of app												10-Jan	10-Jan														
2nd Semester																											
Finish Heart Rate Mode														1-Feb	1-Feb	1-Feb											
Finish Sounds Mode														1-Feb	1-Feb	1-Feb											
Final Design Document																	1-Mar	1-Mar	1-Mar	1-Mar	1-Mar						
Backend implementation of app																						20-Apr	20-Apr				
mplement notification functionalit	:у																					27-Apr	27-Apr				
Final Project Video																						1-Apr	1-Apr	1-Apr	1-Apr	1-Apr	
		Kiran																									
		Amanda																									
		Jonelle																									
		Rikki																									
		Evelyn																									

Project Budget

Circuit Playground: ~\$25

Battery: ~\$2-3

Vendor: https://www.adafruit.com

Required by 11/1/2021.