SIDS Early Detection System
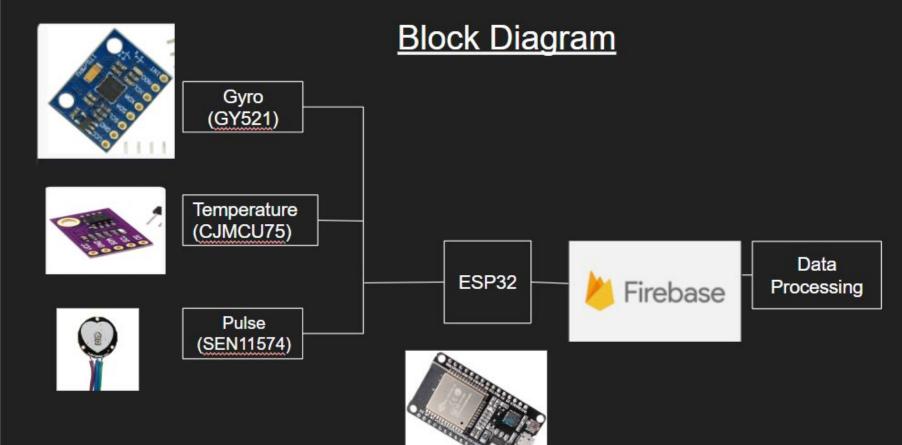
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Block Diagram

Gyro (GY521)

Temperature (CJMCU75)

Pulse (SEN11574)

ESP32

Firebase

Data Processing

Algorithm

Following are the parameters considered for SIDs prediction:

- Angle
    - placing an infant to sleep while lying on the belly or side rather than on the back increase the risk of SIDs. There is an increased chances at two to three months of age.
- Child age
    - Children below the age of 1 are at higher risk of SIDs.
    - the risk is greatest in the first three months when sharing a bed with parents or siblings.
    - The American Academy of Pediatrics thus recommends "room sharing without bed sharing", stating that such an arrangement can decrease the risk of SIDs by upto 50%.
- Race
    - In 2009, the rates of death range from 20.3 per 100,000 live births for Asian/Pacific Islander to 119.2 per 100,000 live births for Native Americans/Alaska Native. African American infants have a 24% greater risk of having a SIDS-related death, compared to the U.S. population as a whole, and experience a 2.5 greater incidence of SIDS than in Caucasian infants.

Algorithm

- Gender
  - There is a consistent 50% male excess in SIDS per 1000 live births of each sex.
- Parental behaviour
  - Drinking of alcohol by parents is linked to SIDS, one study found a positive correlation between the two.
  - SIDs is higher in the case where their mother's have history of smoking during pregnancy.
  - Risk doubles between no smoking and smoking 1 cigarette a day. Nicotine derivatives cause alterations in neurodevelopment.
- Room temperature
  - abnormal room temperature also increases the risk.
- Baby condition
  - Low birth weight is a significant risk factor.