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Team ID	PNT2022TMID50843
Project Name	Safety Gadget for child safety monitoring and notification

project development delivery of Sprint-1

To design and implement a child safety wearable device using wireless technology which is a smart device.

- HYPOTHESIS OR ASSUMPTION
- This section discusses the architecture and the design methodologies chosen for the development of the
- Child Safety wearable device.



Fig: System Overview of Child Safety Wearable Device

- For monitoring the child, we use temperature sensor and heartbeat sensor.
For temperature measurement of
- the child dh11 sensor is used, and heartbeat sensor to track the heartbeat of the child. Ultrasonic sensor and
- IR detects the obstacles that are near the child. The GSM Module used is SIM800A. The primary reason for using the GSM shield as the mode.

communication over Wi-Fi and Bluetooth was that this device was aimed at being accessible to any cell

phone user and not necessarily an expensive Smartphone user . It is user friendly so there is no need for the

parent to learn about new technology.

METHODOLOGY AND TOOLS:



Fig: Arduino GSM Shield

ARDUINO IDE:

```
#include "DHT.h"

DHT dht;

void setup()
{
  Serial.begin(9600);
  Serial.println();
  Serial.println("Status\tHumidity\n(%)\tTemperature (C)\t(F)");

  dht.setup(2);
}

void loop()
{
  delay(dht.getMinimumSamplingPeriod());

  float humidity = dht.getHumidity();
  float temperature =
dht.getTemperature();

  Serial.print(dht.getStatusString());
  Serial.print("\t");
  Serial.print(humidity, 1);
  Serial.print("\t\t");
  Serial.print(temperature, 1);
  Serial.print("\t\t");

  Serial.println(dht.toFahrenheit(temperature), 1);
}
```

Hardware interfaces

- 1) AT mega 328p
- 2) Temperature Sensor
- 3) Heartbeat Sensor
- 4) IR sensor
- 5) Pulse Sensor
- 6) Ultrasonic Sensor
- 7) Accelerometer

Software interfaces

- 1) Programming Language: Embedded C
- 2) Tools to be used: Arduino. 3) Operating System: Windows

Advantages of GPS

Following are the advantages of GPS:

- The GPS signal is available worldwide. Therefore, users will not be deprived of it anywhere
- GPS can be used anywhere in the world, it is powered by world satellites, so it can be accessed anywhere, a solid tracking system and a GPS receiver are all you need.
- The GPS system gets calibrated by its own and hence it is easy to be used by anyone

Disadvantages of GPS

Following are the disadvantages of GPS:

- The GPS chip is hungry for power and that drains the battery in 8 to 12 hours. This requires replacement or recharge of the battery quite frequently.
- GPS does not penetrate solid walls or structures. It is also affected by large constructions or structures. This means that users can not use GPS indoors or underwater or in dense tree regions or in underground stores or places, etc.