Project Design Phase-II
Technology Stack (Architecture & Stack)

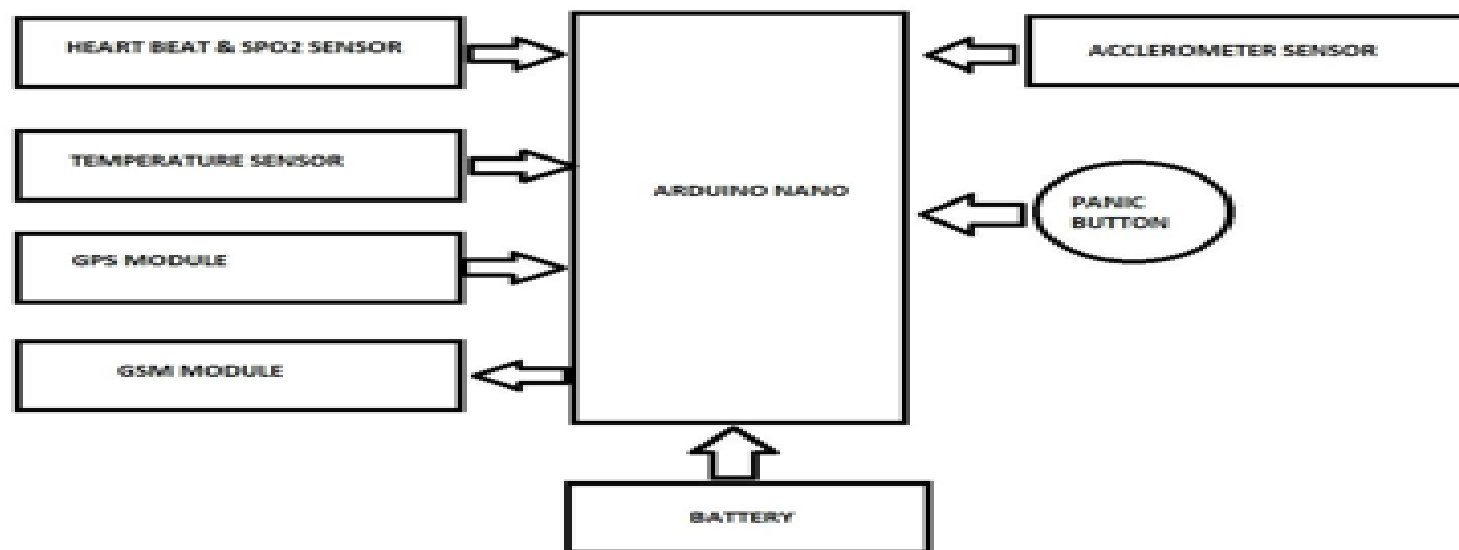| Date	03October 2022
Team ID	PNT2022TMID29745
Project Name	Project – IOT Based Safety Gadget For Child Safety Monitoring and Notification
Maximum Marks	4 Marks

Reference: https://www.ijraset.com/research-paper/wearable-safety-device-for-children

Fig. Block Diagram

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	Arduino nano	The Arduino Nano is a small, complete, and breadboard-friendly board based on the ATmega328 (Arduino Nano 3. x).	Java
2.	Battery	A battery is a device that stores chemical energy and converts it to electrical energy.	_
3.	Heart beat & SPO2 Sensor	Heart beat sensors are designed to give digital output heart beat when a finger is placed on it.	photoplethysmography
4.	Temperature sensor	The LM35 is temperature-calibrated directly in degrees Celsius (Centigrade). It can be directly connected to an Arduino	Java
5.	GPS module	This smart IoT device provides parents with the real-time location, Temperature near to the prototype, humidity and GPS location along with Distress alarm buzzer for the child.	GPS
6.	GSM module	The GSM module constantly scans the received text messages for the specific keywords like Location, Temperature, SOS and Buzz	_
7.	Database	Data Type	Nodered.
8.	Cloud Database	IBM cloud	IIBM cloud, IBM watson
9.	File Storage	File storage requirements	IBM Block Storage
10.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
11.	External API-2	Purpose of External API used in the application	Aadhar API, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Technology used
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Technology used
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Technology used

References:

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