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

Date	03 October 2022
Team ID	PNT2022TMID46834
Project Name	Project – IOT based safety gadget for child safety monitoring & notification system
Maximum Marks	4 Marks

Technical Architecture:

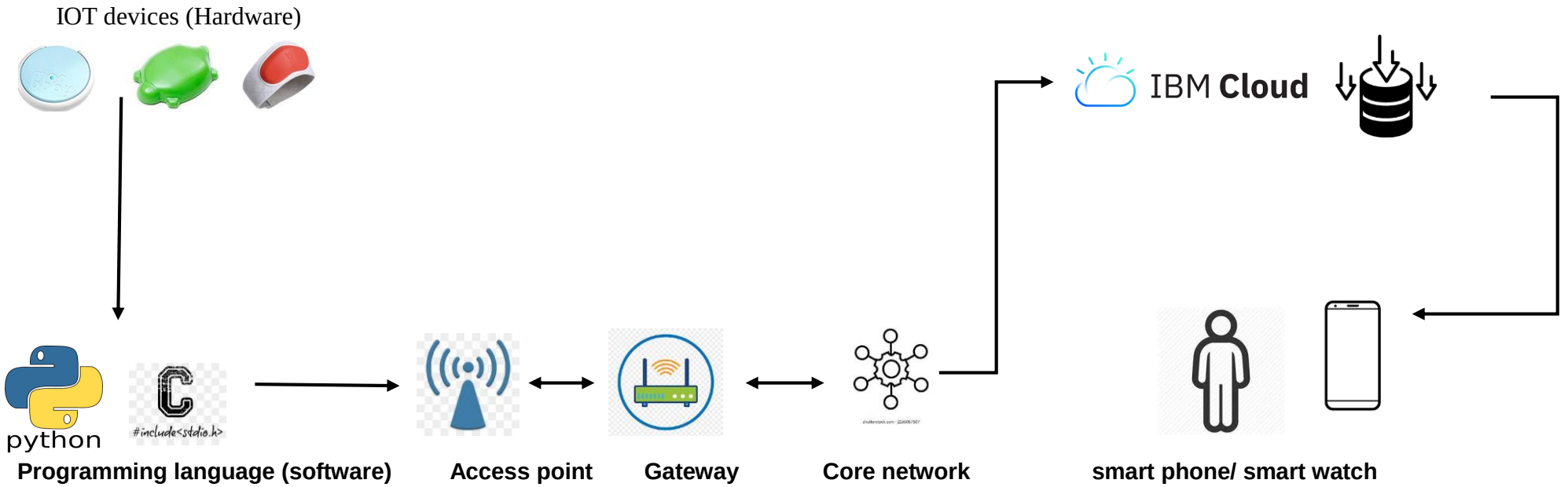

Table - 1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, MQTT App, Node – Red App etc.	Python, Raspberry PI ,c etc.
2.	Application Logic-1	Logic for a process in the application	Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Backend service	Azure IOT hub
6.	Cloud Database	Database Service on Cloud	IBM DBaas, IBM Cloudant etc.
7.	File Storage	File storage requirements	At the back-end, and at the device itself.
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Self-adapted feature	The device must have the feature to adapt in different environment.	**IPV6** auto – configuration is used
2.	Security Implementations	List all the security / access	Use **encrypted protocol**, **secondary network** and change the default password.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Technology used for scalable architecture is **Cloud Storage**.
4.	Availability	Justify the availability of application	It track the child in any environment condition with help of **IPV6 auto configuration** because it automatically adopt to a new condition to collect the information from the current location.
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	This device can **send SMS** with some keywords and the device reply back. The device can **detect the child's approximate location** with the help of Geo – fence, it can detect the body temperature and the surrounding temperature, humidity and also the heartbeat of the child.