

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

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| Date | 18 October 2022 |
| Team ID | PNT2022TMID38406 |
| Project Name | Project – IoT Based Safety Gadget for Child Safety Monitoring and Notification |
| Maximum Marks | 4 Marks |

Technical Architecture:

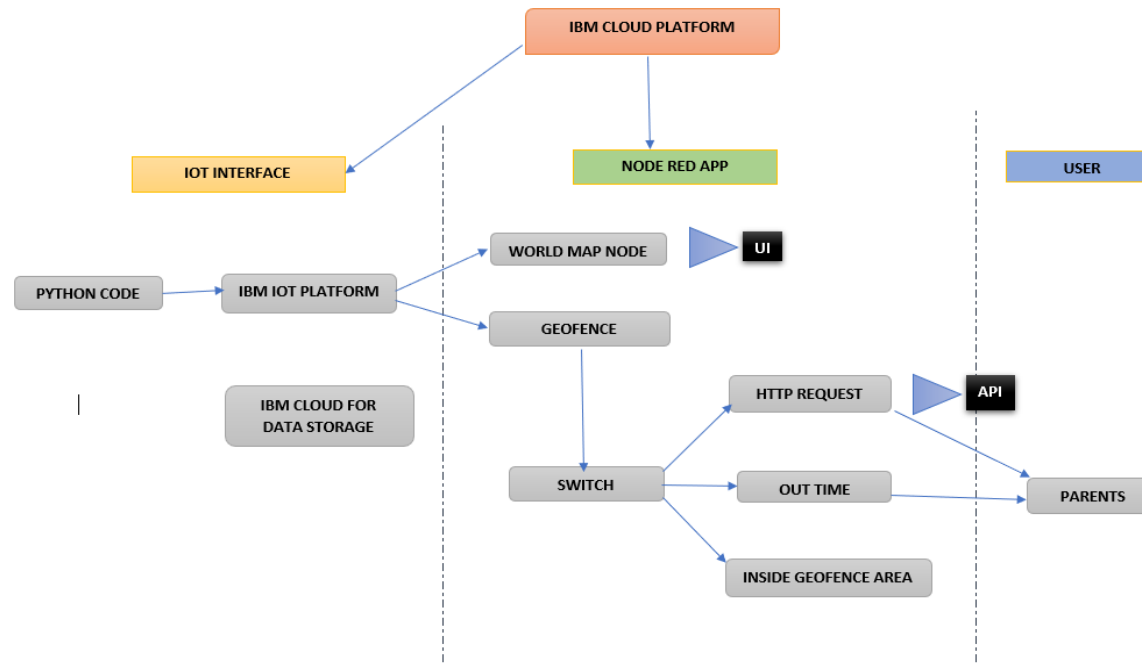


Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|-------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1. | User Interface | Coordinates mapped to location | World Map Node in NODE RED facility IBM Watson STT service (map) |
| 2. | Application Logic-1 | Updating geographical coordinates of the child's location to IBM IoT platform periodically (in this project we use static inputs) | Java / Python |
| 3. | Application Logic-2 | Checks if location in within safe zone radius or not Radius can be set as per requirements | Geofence Node in NODE RED facility IBM Watson STT service (map) |
| 4. | Cloud Database | Database Service on Cloud | IBM Cloudant |
| 5. | File Storage | File storage requirements | IBM Block Storage |

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|----|---------------------------------|--------------------------------------------------------------------|---------------|
| 6. | External API-1 | To send message to parents if child is out of safe zone radius set | fast2sms API |
| 7. | Infrastructure (Server / Cloud) | Deployment of NODE RED app and further usage | Cloud Foundry |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|-----------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| 1. | Scalable Architecture | We need to update the implemented application periodically | IOT (Internet Of Things) |
| 2. | Availability | To make it available 24/7 for uninterrupted services we have implemented in distributed servers (cloud) | IBM CLOUD |
| 3. | Performance | Network conditions should be stable even at worst conditions | High speed network plays a major role in efficiency |