

IoT Based Safety Gadget for Child Safety Monitoring and Notification

Team ID :PNT2022TMID26030

PREREQUISITES:

IBM Cloud Services:

- 1.IBM Watson IoT Platform
- 2.Node-RED Service
- 3.Cloudant DB

i) IBM Watson IoT platform:

IBM Watson IoT Platform is a managed, cloud-hosted service designed to make it simple to derive value from your Internet of Things devices.

STMicroelectronics is an IBM Partner and provides development platforms allowing users to develop applications with direct connection to the IBM Watson IoT platform.

By using Watson IoT Platform, you can collect connected device data and perform analytics on realtime data.

The IBM Watson IoT Platform is a fully managed, Cloud-hosted service that provides device management capabilities as well as data collection and management in a time series format.

The Lite service plan provides a free, lightweight development environment to get you started with the connectivity capabilities of Watson IoT Platform.

ii) NODE-RED SERVICE:

Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways.

It provides a browser-based editor that makes it easy to wire together flows using the wide range of nodes in the palette that can be deployed to its runtime in a single-click.

Node-RED is an open-source programming tool, for connecting hardware devices, APIs and online services creatively and easily.

Node.js is a cross platform, open source JavaScript runtime environment (JRE) which allows building JavaScript programs for the server-side.

Node.js is more than a decade old now and runs on V8 engine.

While many consider Node.js to be only a backend framework, this technology also can be wont to build front-end.

Most software engineers consider Node the most exciting single piece of software within the current JavaScript universe.

Basic commands one should know to start using Node-Red

- target - Set or view the target URL and port like `http://localhost:1880`
- login - Log user in to the target of the Node-RED admin API
- list - List all of the installed nodes
- info - Display more information about the module or node
- enable - Enable the specified module or node set
- disable - Disable the specified module or node set
- search - Search for Node-RED modules to install
- install - Install the module from NPM to Node-RED
- remove - Remove the NPM module from Node-RED
- hash-pw - Create a password hash that can be used with the `adminAuth` and `httpNodeAuth` settings

Key benefits of using Node.js:

1. Node.js is superb for calling other services. For the bulk of apps it's critical to form communication with the database and platform API seamless.
2. Node.js increases performance and handles tons of requests. For the client side it's very useful, practical and fast because it demands users to form fewer clicks and have everything loaded directly .
3. Node.js overcomes large processing challenges.
4. Node.js enables development teams to use JavaScript both for the server and therefore the browser.

5. Smooth, fast UI and customization is feasible with Node.js. And Netflix here may be a true winner with one among the foremost successful UI ever.
6. Node.js features a large and active community of engineers who constantly contribute and improve the technology.
7. Extensive NPM offers tons of ready-made solutions engineers can use.
8. Node.js is straightforward.
9. It's great for startups as they will enjoy faster development and faster entering the market with their products.

Use Node-Red services:

Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways.

It provides a browser-based editor that makes it easy to wire together flows using the wide range of nodes in the palette that can be deployed to its runtime in a single-click.

iii) Cloudant document database:

Cloudant is an IBM software product, which is primarily delivered as a cloud-based service. Cloudant is a non-relational, distributed database service of the same name.

Cloudant is based on the Apache-backed CouchDB project and the open source BigCouch project.

IBM Cloudant is a fully managed JSON document database that offers independent serverless scaling of throughput capacity and storage.

A fully managed, distributed database optimized for heavy workloads and fast-growing web and mobile apps, IBM Cloudant is available as an IBM Cloud® service with a 99.99% SLA.

Cloudant is accessed through an HTTP API. You can see the different parts that you use to connect to IBM Cloudant in the following list:

1.Endpoints

2.Service credentials

3.Authentication

4. Accessing the IBM Cloudant Dashboard

5. Programmatically accessing IBM Cloudant by using curl or client libraries