IBM CLOUD SERVICES

Team ID	PNT2022TMID16877
Project Name	Smartfarmer-IoT Based Smart Farming Application

IBM CLOUD:

IBM Cloud is the cloud for innovative businesses trusted by thousands of international Organizations. It helps us to Grasp how you can impart dependable and uninterrupted security for your cloud environment.

Types: Full Stack Cloud Platform, Hybrid Cloud, Data and AI Capabilities

IBM also builds cloud environments for customers that are futile on the SmartCloud Platform. For example, the attributes of the SmartCloud platform—such as Tivoli management software or IBM Systems Director virtualization—can be integrated individually as part of a non-IBM cloud forum. The SmartCloud platform consists exclusively of IBM hardware, software, services, and practices.

IBM IoT PLATFORM:

IBM Watson IoT forum is a wholly controlled, cloud-hosted assistance that makes it elemental to acquire value from the Internet of Things (IoT) devices.

Register and affix your device, be it a sensor, a gateway, or something else, to the Watson IoT Platform and start transmitting data steadily up to the cloud utilizing the open, lightweight MQTT messaging protocol.

You can establish and manage your devices employing your online dashboard or our secure APIs, so that your apps can ingress and use your live and archival data.

Device management:

Using the device management service, we can execute device exertion like restarting or refurbishing firmware, acquire device diagnostics and metadata, and carry out a vast device addition and removal.

Responsive and scalable connectivity:

It aids the industry standard MQTT protocol to link devices and requisition. MQTT is designed for the adequate exchange of data to and from devices in real-time.

Secure communication:

It helps to Securely receive data from and transmit commands to your devices. It is executed using MQTT with TLS to secure all intercommunication between the gadget and IBM cloud services.

Data lifecycle management:

Having access to real-time figures coming from our devices, you can opt to store data for a period of your choice, allowing you to have access to historical and real-time data for your devices.

NODE-RED SERVICE:

Node-RED is a flow-based programming tool for wiring together hardware devices, initially expanded by IBM's Emerging Technology Services team and currently a division of the OpenJS Foundation.

Node-RED consists of Node.js on the grounds of runtime. Within the browser, we can design the application by dragging nodes from the palette into the workspace and can begin to wire them together. With a single click, the software is ranged back to the runtime.

The range of nodes can be effortlessly enlarged by fixing new nodes fabricated by the community and the connections created can be easily shared as JSON files.

Browser-based flow editing:

Node-Red facilitates a browser-based flow editor that makes it uncomplicated to wire together. Javascript roles can be created within the editor with the help of a rich text editor. A built-in library permits to save useful function templates or flows for reuse.

Social development:

The flows created in Node-Red are stoked using JSON which can be easily imported and inspected for sharing with others. An online flow library grants to share the best flows with the world.

IBM CLOUDANT:

IBM cloudant is a fully managed, distributed directory enhanced for massive workloads. Growing web and mobile apps, IBM cloudant scales throughput and storage, and its API and duplicate protocols are adaptable with apache CouchDB for hybrid or multicloud architecture.

Serverless web app and API:

It will produce a serverless web application by having static website content on GitHub pages and executing the application back-end, with the assistance of IBM cloud applications mobile app. It uses IBM cloud functions along with cognitive and data services to construct a serverless back end for a mobile app.

Find Anomalier in IoT data:

It sets up IoT devices and musters data in the IBM Watson IoT platform. It will create visualizations and use advanced ML services to examine authentic data and disclose anomalier.

Open Hybrid Multicloud:

It displays how to match the API and powerful duplicate protocol of cloudant with Apache clouchDB in a hybrid cloud environment.