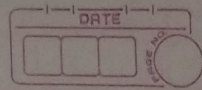


Experiment No: 10



Aim : Create a small dashboard application to be deployed on cloud. Different publisher devices can publish their information and interested application can subscribe.

Theory :

IOT Platforms:

The IOT platforms are suits of components that help to setup & manage the internet connected devices. A person can remotely collect data, Monitor & Manage all internet connected device from a single system. There are a bunch of IOT platform available online but building an IOT solution for a company is all depend on IOT platform host & support quality.

IOT cloud Platforms:

1. Kaa IOT platform;
2. Sate. where: open platform for the Internet of things.
3. Thingspeak: An open IOT platform with MATLAB analytics.
4. DeviceHive: IOT Made Easy.
5. Zetta: API-First Internet of Things platform.

Kaa- Features:

1. Manage an unlimited number of connected device.
2. Set up cross-device interoperability.
3. perform A/B service testing.

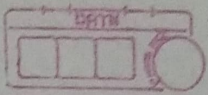
4. perform real-time device Monitoring.
5. perform remote device provisioning & configuration.
6. Collect & analyze sensor data.
7. Analyze user behaviour deliver targeted notification.
8. Create cloud services from smart products.

SiteWhere - Features:

1. Run any number of IIOT applications on a single Site where instance.
2. Spring delivers the core configuration framework.
3. Connect devices with MQTT, AMQP, STOMP & other protocols.
4. Add devices through self-registration, REST services or in batches.
5. Integrates with third-party integration frameworks such as Mule. Any point.
6. Default database storage in MongoDB.
7. Eclipse Californium for CoAP Messaging.
8. InfluxDB for event data storage.
9. Grafana to visualize SiteWhere data.
10. HBase for non-relational data store.

Thingspeak - Features:

1. Collect data in private channels.
2. Share data with public channels.
3. RESTful & MQTT APIs.
4. MATLAB analytics & visualization.
5. Alerts.
6. Event scheduling.

- 
1. App Integrations
 8. worldwide community.

Devilelive - Features:

1. Directly Integrate with Alexa.
2. Visualization dashboard of your choice.
3. Customize Devilelive behavior by running your custom JavaScript code.
4. It supports the big data solution such as Elasticsearch, Apache Spark, Cassandra & Kafka for real-time & batch processing.
5. Connect any device via REST API, websockets or MQTT.
6. It comes with Apache Spark & Spark Streaming support.
7. Supports libraries written in various programming languages, including Android & iOS libraries.
8. It allows running batch analytics and Machine Learning on top of your device data.

Zetta - features.

1. Built around Node.js, REST websockets, & a flow-based "reactive programming".
2. Supports wide range of hacker boards.
3. Zetta allows you to assemble smartphone apps, device apps, & cloud apps.

Analytics



MATLAB Analysis

Explore and transform data.



MATLAB Visualizations

Visualize data in MATLAB plots.



Plugins

Display data in gauges, charts, or custom plugins.

Actions



ThingTweet

Connect a device to Twitter™ and send alerts.



TweetControl

Listen to the Twitterverse and react in real time.



TimeControl

Automatically perform actions at predetermined times with ThingSpeak® apps.



React

React when channel data meets certain conditions.



TalkBack

Send up commands for your device.



ThingHTTP

Simplify device communication with web services and APIs.

Conclusion :

Thus, we have designed Smart
application using Thingspeak.