SNS COLLEGE OF ENGINEERING

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING-IOT Including CS&BCT

COURSE NAME : 19SB602 FULL STACK DEVELOPMENT FOR NEXT GENERATION IOT

III YEAR / VI SEMESTER

Unit IV- **INTEGRATION OF NG IoT WITH WEB DEVELOPMENT**

Topic :API Integration

Application Programming Interface or an API is a **set of definitions and protocols** through which applications communicate with each other.

With API your application or service can use the functions provided by another application without needing to know how that other application is being implemented.

APIs can also serve as an intermediary layer for data transfers between system applications, allowing businesses to open their application data and functionality to third-party developers, business partners, as well as internal departments within their organizations.

API integration

The process of connecting **two or more software applications** or **processes using APIs is referred to as API integration.**

This allows the systems to **exchange data and functionality.**

APIs are a **collection of protocols, routines, and tools used to create software and applications.**

APIs allow for communication between different applications specifying how the software components should interact with each other.

API integration is required for businesses to connect their systems and services to other external applications, allowing them to exchange data and functionality in real time.

This improves efficiency, scalability, and user experience while potentially saving money.

Businesses can use API integration to automate tasks and integrate new systems and services, creating new opportunities for innovation and growth.

Without API integration, businesses would have to rely on manual processes and custom development, which can be costly, time-consuming, and less efficient.

Achieve API integration

API integration can be achieved in quite different ways, but it majorly revolves around the following,

1. Custom Integration

2. Connector Applications

3. Integration Platforms

1. Custom Integration

It is the process of connecting one application or service to another via a custom-built API.

Custom integration can be created when an existing API is not available or does not meet the specific needs of the integration.

2. Connector Applications

It is the process of utilizing third-party software to connect various systems and services via APIs.

These connector applications, also known as middleware, frequently come with preconfigured tools for popular systems and services and act as a bridge between the systems and services, allowing data and functionality to be exchanged.

3. Integration Platforms

Integration platforms also referred to as iPaaS (integration platform as a service), offer a centralized environment for developing, deploying, and managing integrations.

They usually include pre-built connectors for popular systems and services, as well as tools for developing custom connectors and workflows.

Benefits of API integration

1. Efficiency

2. Scalability

3. Cost Savings

4. Reduced Errors

Examples of API integration

1. Social Media: A social media platform can use API integration to connect to a sentiment analysis tool, allowing for the automatic analysis of social media posts to determine customer sentiment.

2. Healthcare: API integration could be used by hospital management systems to connect to an EHR or electronic health record system, allowing for the sharing of patient health information.

3. Chatbot: A chatbot application can use API integration to connect to a customer service platform, allowing for the automatic routing of customer inquiries to the appropriate service agent.

4. IoT: IoT devices can connect to a data analytics platform via API integration, allowing for the automatic collection and analysis of sensor data.

API could be used to remotely control a thermostat or to activate a security camera.

5. E-commerce: An e-commerce platform can connect to an inventory management system via API integration, allowing for automatic inventory level updates and order processing.

6. Accounting: An accounting system can connect to a payroll system via API integration, allowing for the automatic processing of employee payroll.

It can also be used with invoicing systems like Zoho Invoice to create and send invoices automatically, as well as track payment status.

7. Location tracking: API integration in location can provide accurate location data, enable real-time tracking,

Improve the user experience by providing location-based services such as geocoding to convert street addresses into geographical coordinates, reverse geocoding, routing, and navigation by providing turn-by-turn directions or estimated time of arrival.

Examples of such APIs include Google Maps API, OpenRouteService API, etc.

Any Query????

Thank you……

API Integration/ 19SB602/FSD FOR NEXT GENERATION IOT /Mr.R.Kamalakkannan/CSE-IOT/SNSCE