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Report on the architecture of the weather app

Application Programming Interface (API) is a simple way of connecting computer programs or computers only. But generally, the term API refers to Web API which allows connection and collaboration between computers that are connected to the internet. There are different API for different software, libraries and also many more. In this report we used a climate web API that provided us with the information about weather and climate about every city and country. There was a certain type of architecture built in the process of obtaining the data through API server, i.e., Client to Server architecture.

A client server architecture is the model in which server hosts, manages and delivers the resources to be used by the client. In this type of architecture many computers or systems are connected to one server and access the data easily. There are 4 tiers in this type of architecture such as 1 tier, 2 tier, 3 tier and N tier. In this architecture the client sends the request to the server through internet (HTTP Request) and gets the desired result from the server. In this case, we send the request for the weather of a certain city through our web browser(client) to the API (Server) and thus got the desired data. Every architecture has its own benefits and drawbacks. This architecture is advantageous but has some drawbacks too. Here are some of the benefits and limitations of the client server architecture listed below:

Advantages

- The network has centralized control and all the information can be accessed through a single location.
- Data is secured and well protected due to its centralized architecture.
- The architecture is highly scalable as the number of clients can be easily increased without any interruptions.
- The data can be easily accessed and managed as client is provided with their login credentials to access the data.

Disadvantages

- It goes under traffic congestion if the number of clients is very high and thus create problems in accessing the data.
- As the network is centralized, if anything happens to the server the whole architecture is interrupted.
- The setup cost of this architecture is very high as the network is very expensive to purchase.
- The server needs to be constantly monitored and maintained as it can be influenced by high number of clients.