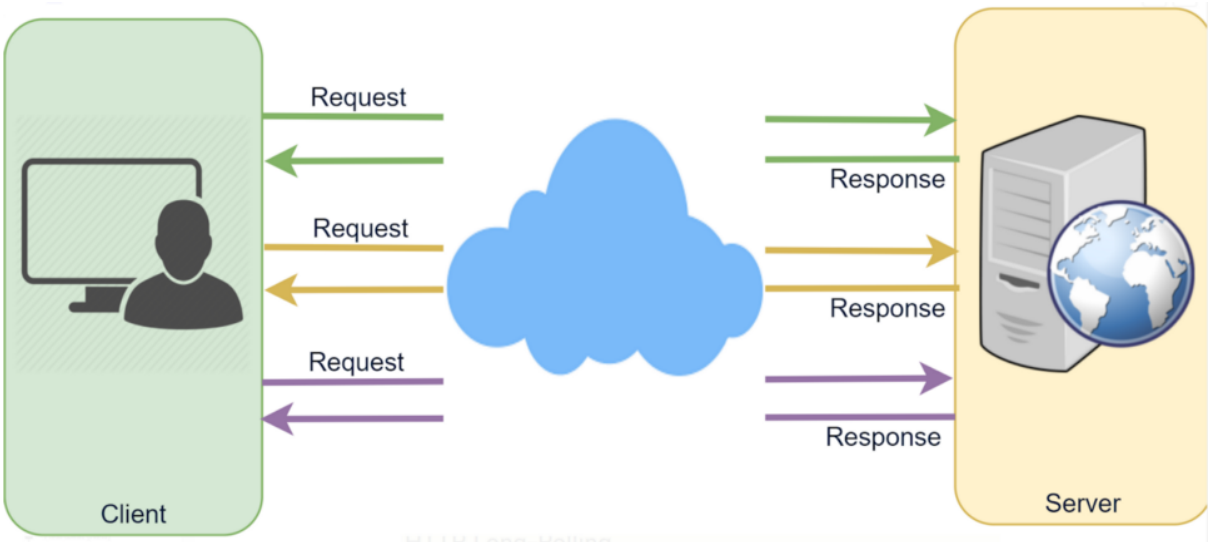
Polling simply means checking for new data over a fixed interval of time by making API calls at regular intervals to the server. It is used to get real-time updates in applications. There are many applications that need real-time data and polling is a life savior for those applications.

Different types of Polling:

Short Polling: In a short polling client requests data from the server and the server will return the response if it is available and if it is not available then it returns an empty response. This process will be repeated at regular intervals.



Although, there are a few problems with short polling,i.e the frequency of polling can cause an unacceptable burden on the network, the server, or both, when the acceptable latency is low, in general.

Long Polling: In Short polling, there was a problem that if the response is not available then the server returns an empty response.

So, In long polling, this problem got solved. Here, in long polling, the client sends a request to the server and if the response is not available then the server will hold the request till the response gets available,That's why this

technique is sometimes referred to as a “Hanging GET.” after the availability of the response, the server will send the response back. After getting a response, again the request will be made either immediately or after some period of time and this process will repeat again and again. In simple words, the client will always be in the live connection to the server.

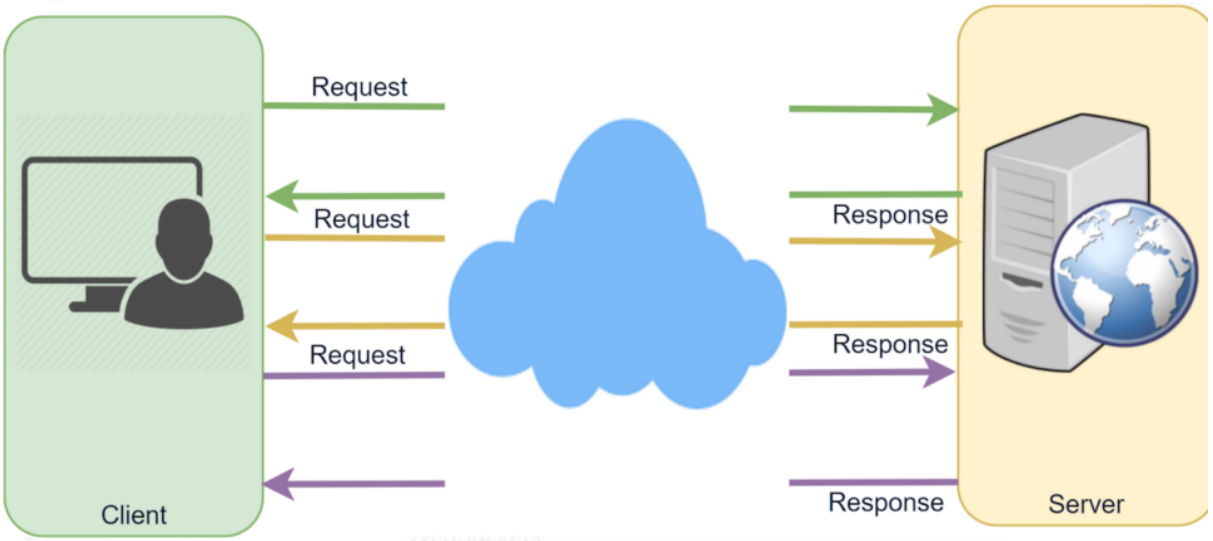
If the server does not have any data available for the client, instead of sending an empty response, the server holds the request and waits until some data becomes available.

Once the data becomes available, a complete response is sent to the client. The client then immediately re-requests information from the server so that the server will almost always have an available waiting request that it can use to deliver data in response to an event.

The basic life cycle of an application using HTTP Long-Polling is as follows:

1. The client makes an initial request using regular HTTP and then waits for a response.
2. The server delays its response until an update is available or a timeout has occurred.
3. When an update is available, the server sends a complete response to the client.

4. The client typically sends a new long-poll request, either immediately upon receiving a response or after a pause to allow an acceptable latency period.
5. Each Long-Poll request has a timeout. Therefore, the client has to reconnect periodically after the connection is closed due to timeouts.



Real-World Polling Applications: Polling has different Real-world Applications. Some of them are described below:

- **Taxi Service Provider:** When any user books a taxi from the taxi service provider's application then, in that case, he/she needs to check the location of the driver every second to get an idea that how far the driver is from its pickup point.

In that case, data on the location change rapidly so we need polling to get the correct location every time.

- **Train Tracking** When any user wants the current location of any train then he/she uses the Train tracking application. Since the location of the train changes every moment. So, in this case, also there is a need for polling to get the updated location of the train at any time whenever a user searches.

Difference between Short Polling and Long Polling:

Short Polling	Long Polling
It is based on Timer. So, it is used for those applications that need to update data at a fixed interval of time	It is based on getting the response. So, It is used for those applications that don't want empty responses.
Here, an empty response can be sent if a response is not available.	Here empty response can never be sent.

It is less preferred.	It is more preferred, in comparison to Short Polling.
It creates lots of traffic.	It also creates traffic but less than short polling.