Synchronization in Distributed System

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For synchronization in distributed system we are using NTP protocol to make synchronization. Here the NTP implementation which is just imitating how the actual NTP is working.

In this we are using thread with the help of thread and the current time of the system we will be calculating the time between the server time and the client time and after analysing both the time, it will provide an offset with the help of NTP algorithm.

To get the time

- Set the IP address in **Util.java** according to the system IP address you are using.
- Then set the PORT NO in **Util.java** which is not in use.

How to RUN the code:

- First run the server **TimeServer.java** which will start the server and wait for the client request.
- Now run the client **TimeClient.java** which will start the connection between the server and the client and start giving the offset and the delay (by default 10 request is made from client you can change the value).

Functionalities:

Util.java: It's just holding all the connection port and the IP address and also the random time delay made in the thread.

NTPRequest.java: It's holding all the values and the calculation.

TimeServer.java: It's establishing the connection and waiting for the client request. Once it gets the client request it's sending the calculated server time through the IO Stream.

TimeClient.java: Here client is recording its current time and the requesting the server for the time. Client will collect the time through the IO Stream and then again record the current time and send the all the collected value for the calculation. Basically this NTP is working in the client side.