# Socket Programming

## Task1

Implement a standard UDP based DNS client. This DNS client should take the input (url) from the user and send the request to the IITH DNS server (192.168.35.52/192.168.35.53 for dns1.iith.ac.in or dns2.iith.ac.in respectively) and display the result returned by the server. You shall be connected to IITH VPN connection to test your results as to access the above DNS servers. The client should perform the following tasks:

1. Create a standard DNS packet by appending all the required headers and send the request to DNS server (on port#53).
2. Parse the result sent by the server and display the returned IP addresses for the respective input (host/url).

## Note: Please do not use any library APIs for DNS request/response. If used marks will be deducted completely for this task.

## Task2

In a non-blocking chat application, the client need not wait for the server to send a reply to the earlier message before sending another message.

1. Create a TCP “Chat Server” that accepts the connections from multiple clients and enables them to chat with each other. A Client sends the message to the server and the server forwards the message to other connected clients.
2. Create a respective TCP client program that connects to the “Chat Server” to chat with other clients, who are connected to the server. The client should be able to send and receive the messages to the server asynchronously (non-blocking). Also, the server should not be blocked by a message from one of the clients.
3. The chat server should accept a maximum of **N** clients to connect to the server which should be configured while starting the server program.

## Submission

Add appropriate comments to your code in the programs to make it readable. Prepare a single zip file with name format **<assignment2_roll no>.zip** including the sub folders for Task1 and Task2, containing their source files and respective readme of your programs. Submit it to google classroom in the posted assignment section.

## PLAGIARISM STATEMENT <Include it in your readme>

I certify that this assignment/report is my own work, based on my personal study and/or research and that I have acknowledged all material and sources used in its preparation, whether they be books, articles, reports, lecture notes, and any other kind of document, electronic or personal communication. I also certify that this assignment/report has not previously been submitted for assessment in any other course, except where specific permission has been granted from all course instructors involved, or at any other time in this course, and that I have not copied in part or whole or otherwise plagiarised the work of other students and/or persons. I pledge to uphold the principles of honesty and responsibility at CSE@IITH. In addition, I understand my responsibility to report honour violations by other students if I become aware of it.

**Name of the student**
**Roll No**