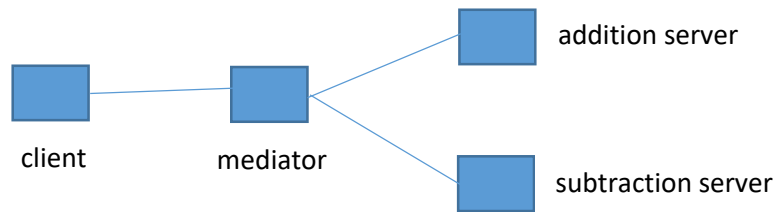


Lab 3 – Socket Programming – Revision

Consider the following network:



In the given network, each server is capable of handling one type of command. Addition server takes multiple inputs (first the number of inputs, followed by the actual inputs), adds all the inputs received and returns the result to the sender. Subtraction server receives 2 inputs, subtracts the second number from the first and returns the result.

The process followed in the network is as follows:

```
client sends a request with command and input to the mediator
mediator validates the input
if the input is invalid,
    mediator sends a message "invalid input" to client
else
    if the server corresponding to the command is NOT available
        mediator sends a message "sorry unable to process" to client
    else
        mediator sends inputs to the server (one at a time)
        server performs the operation and sends the result to mediator
        mediator forwards result to client
```

The request sent by the client can be of the following types:

```
ADD 1,-2,13,54          // addition server
SUB 3,4                  // subtraction server
ANS 6,8                  // addition server and subtraction server (result of addition is
                        // returned first followed by result of subtraction)
```

Exercise

1. Implement the above network using socket programming.
2. Modify the addition server in such a way that it is available only for a limited duration.
3. Modify the process in such a way that the client sends to the mediator words (number meaning), which would be validated and converted into arabic numerals by the mediator using a file. These numerals are then sent to the server.