LAB-2 Socket Programming

The socket is a programming interface for users to develop network programs. A socket creates an identifier that can be used as a file identifier, meaning you can read and write into the identifier as you would a file. Operations like closing and opening are also similar.

A socket is characterized by:

domain: the protocols used for transport (AF_INET) (INET stands for Internet)

type: reliable (SOCK_STREAM) unreliable (SOCK_DGRAM) (Transport layer protocol)

protocol: the version number of the protocol in the domain (IPv4 or IPv6)

hostname: a way to identify hosts, a hostname, IP address

port: OS-level identifier to send and receive data (similar to process ID). A server process "listens" on this port number and a client can receive/send data through this port.

Tasks to be done

Task 1: to make the client respond back to the server with an acknowledgment of the server's message. Something like, "It was nice talking to you".

Task 2 Specifications: Client-Server Set Deduplication

The client generates a set of N random numbers (N is chosen at random between 25 and 100) and sends this list to the server. The numbers are in the range of (1-100). The server examines this list and removes duplicates and sends back the deduplicated set back to the client. The client should display:

a. The final list of numbers

b. The list of numbers that were identified as duplicates