Computation power of Server by Comparison of Sorting Algorithms using Transmission Control Protocol (TCP)

Introduction/Aim

Socket programming in C where the client checks the computation power of the server by giving it the task of sorting an array. The server sorts the array using different sorting algorithms and sends the processing time reports to the client.

Implementation with Resources

This project is implemented with the help of resources given below. Its implementation gives information about the execution time of an algo that the server resides in it. The client, which sends the array where the server has to sort the array using different sorting techniques and send back the execution time of each algo.
The main resources are Server, Client and a Custom Header File

The APIs involved in the implementation are

1. Server

(a) socket() An interface between an application process and transport layer.
Syntax-- socket (AF_INET, SOCK_STREAM, 0);
(b) bind() Used to associate a socket with a port on the local machine.
Syntax-- int bind(int sockfd, struct sockaddr *my_addr, int addrlen);
(c) listen() Waits for incoming connections. Syntax-- int listen(int sockfd, int backlog);
(d) accept() Gets the pending connection on the port you are listening on.
Syntax-- int accept(int sockfd, void *addr, int *addrlen);
(e) recv() For communicating over stream sockets or connected datagram sockets. Syntax-- int recv(int sockfd, void *buf, int len, int flags);
(f) send() For communicating over stream sockets or connected datagram sockets. Syntax-- send(int sockfd, const void *msg, int len, int flags);

2. Client

(a) socket() An interface between an application process and transport layer. Syntax-- socket (AF_INET, SOCK_STREAM, 0);
(b) connect() Connects to a remote host
Syntax-- int connect(int sockfd, struct sockaddr *serv_addr, int addrlen);
(c) send() For communicating over stream sockets or connected datagram sockets. Syntax-- send(int sockfd, const void *msg, int len, int flags);
(d) recv() For communicating over stream sockets or connected datagram sockets. Syntax-- int recv(int sockfd, void *buf, int len, int flags);

3.Custom Header File(myheadSorting.h):

Contains complete algorithmic functions of different types of sorting.

Conclusion

Hence, the Comparison of Computation power of Server by analysis of Sorting Algorithms is done and the reports are sent to the client.