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Question 1:

1.a :

1.b :
First initialize the listening desciptor listenfd
The unconected socket will convert to passive socet
FD_SET(listenfd, &readfds);
Then it will accept the connection request to the socket and set the maximum size of the connection all
maxfd = add_client_sockets_to_readfds(&readfds);
if the file descriptor of the accepted conction more than max file set by system it will retun error.
if(-1 == ret) handle_select_error();

In the function if(FD_ISSET(listenfd, &readfds))
There are two system function that cause the blocking
Accept() and recv ()
The connection to to be accept cause blocking in the function.
Otherwise an error will occored or the connection.

The recv() cause blocking if there is no data in the buffer to be read and no blocking flag is set.
The call will close untill there is new avilabe request nedd to be listen and read.

If there is no data in the buffer to read and blocking flag is not set, the call will return an error and the error wil set to be accepted.

1.c.i : Mutex is causeing locking for some part of the code which make one processor to work on part of the code. MUTEX functionality to add diagnostice capability to API, it can work within the same threads process but not in theads shared by many process.

1.c.ii : Yes, we can use Time_wait that allow for old duplication to exipire from the network. We can set tim_watie for segment life time before close or end the conection or to consider it loost.

1.c.iii : No, because number of connected clint is bounded

1.c.iv : Yes, by locking up of the ending of the address like .chalmers.se