Java thread

- In our project, we use multiple thread to handle the running process at both client and server.
- We set different kinds of thread to listen all the process. For example, when client connects to server, the program can create a new thread to listen this event.

Why use multiple thread

- It can avoid the limitation of single inheritance of java
- It can enhance the strength of program and the code which can be shared by multiple thread at the same time which can guarantee the code and date are independently cannot be influent by each other.
- It is suitable for multiple same code thread to handle identical resource

客户端socket建立步骤：

- Utilize construction function to establish a new socket
- Socket try to connect with server (After finishing construction function building, this socket can automatically connect to server).
- Once setup connection, this socket can do input stream and output stream operation which is a duplex connection.
- ScoketAddress class is mainly used to save temporary socket connection information which can save the connection information last time and can use directly. And its subclass InetSocketAddress is used to realize IP address and port matching.

ServerSocket 建立步骤

- Use ServerSocket() construction function to create a ServerSocket at a certain port.
- It use accept() to listen this all requests of port. If there is no request, this port will stay congestion which can make whole program stop and wait for next request until the client try to connect again. At the same time, it will return a socket object which can connect between clients and server.
- It can call input/output stream

Connection between server and clients

- Use TCP/IP protocol to build this connection process.
- For clients, use localIP function to set ip address which must be the same with server IP.
- For server, it must use same port number and serversocket number with clients.
- The TCP/IP protocol is composed of socket and SeverSocket

Establish socket for client and server

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Establish ServerSocket at server

- Use ServerSocket() construction function to create a ServerSocket at a certain port.
- Use accept() to listen this all requests of port.
- Call input/output streams which are used to convert the type of transformation message between client and server.