Nguyen Phan Yen Ngan - 14597

Chapter 1: Introduction – TCP/IP SOCKETS IN JAVA

* 1. Networks, Packets, Protocols
* A computer network consists of machines interconnected by communication channels called hosts and routers.
* Hosts are computers that run applications. The application programs running on hosts are the real “users” of the network.
* Routers are machines whose job is to relay, or forward information from one communication channel to another.
* Routers are important because it is not practical to connect every host directly to every other host. Instead, a few hosts connect to a router, which connects to other routers, and so on to form the network.
* Packets: Sequences of bytes that represent information.
* Protocols: Agreement to exchange packets by communicating programs. It tells how packets are structured and designed to solve a specific problem.
* Protocol suite: a set of protocols designed to solve different problems.
* Protocols are organized into layers: Application layer, Transport layer, Network layer.
  1. About Addresses
* In TCP/IP, 2 pieces of information are taken for identification: Internet addresses and port number.
* Internet addresses: binary numbers. There are 2 types: Ipv4 and Ipv6. It refers to connection between host and underlying communication channel, other words, network interfaces.
* Port number: interpreted relative to an Internet address.
  1. About Names
* The name-resolution service can access information from a wide variety of sources. Two of the primary sources are the Domain Name System (DNS) and local configuration databases.
  1. Clients and Servers
* Each communication is initiated by one party, who sends a letter or makes the telephone call, while the other party responds to the initiator’s contact by sending a return letter or picking up the phone and talking.
* The terms client and server refer to these roles: the client program initiates communication, while the server program waits passively for and then responds to clients that contact it.
* Whether a program is acting as a client or server determines the general form of its use of the sockets API to establish communication with its peer.
  1. What is a Socket
* A socket is an abstraction through which an application may send and receive data, in much the same way as an open file handle allows an application to read and write data to stable storage.
* A socket allows an application to plug in to the network and communicate with other applications that are plugged in to the same network. Information written to the socket by an application on one machine can be read by an application on a different machine and vice versa
* Different types of sockets correspond to different underlying protocol suites and different stacks of protocols within a suite. This book deals only with the TCP/IP protocol suite