**1.**

A process is a program running within a host, those processes communicate:

* within the same host using inter-process communication
* in different hosts by exchanging messages

One way of communication is sockets. A socket is an endpoint used to send or receive data within a network. To know where the messages go or come from, we have addresses. Those messages must have an identifier which should contain the IP address and the port numbers associated with the process on the host.

**2.**

If I would want to make a transaction from a remote client to a server as fast as possible I would consider both UDP and TCP, each with its own pros and cons.

TCP guarantees that the transaction will be made without any problems because it’s reliable transport, it has flow control and congestion control which minimize the amount of data lost.

UDP might be faster in this specific problem because a simple transaction isn’t a complex operation and the amount of data transferred isn’t very big, therefore the risk of data loss is minimal, making flow control and congestion control unnecessary.

Therefore, if I wouldn’t have to worry about security, I would choose UDP, but for a perfect guaranteed transaction I would use TCP.

**3.**

Normally browsers send a HTTP request to the server (website location/owner/host) and it asks for a copy of the website. The copy will be sent across the internet connection using TCP/IP. HTTP uses two types of HTTP messages: requests and responses.

A simple request contains of the request line, which is the actual request, a header which can contain additional information and an optional body which can contain extra data necessary for the request.

A simple response contains the status code, a header and finally the requested data.

**4.**

The purpose of HTTP is to provide a standard method for browsers to communicate with servers. HTTP is a stateless protocol because id doesn’t require the server to keep any data or information about the users/clients.

**5.**

The role of a proxy server is to reduce the time it takes to get a response by caching the data in a location closer geographically to the user. (Transfer speed isn’t instant, therefore data further away takes longer to “arrive”)

**6.**

Websites usually use cookies to identify users. Cookies are small bits of data saved in the browser which contain the strictly necessary information, so the user doesn’t have to “log in” every time.

**7.**

DNS (Domain Name System) is a distributed hierarchical database of names of computers, services or other resources connected to the internet. DNS “translates” names such as yahoo.com, youtube.com to IP addresses and back because the TCP only “understands” IP addresses.