FTP

FILE TRANSFER

Transferring files from one computer to another is one of the most common tasks expected from a networking or internetworking environment. As a matter of fact, the greatest volume of data exchange in the Internet today is due to file transfer.

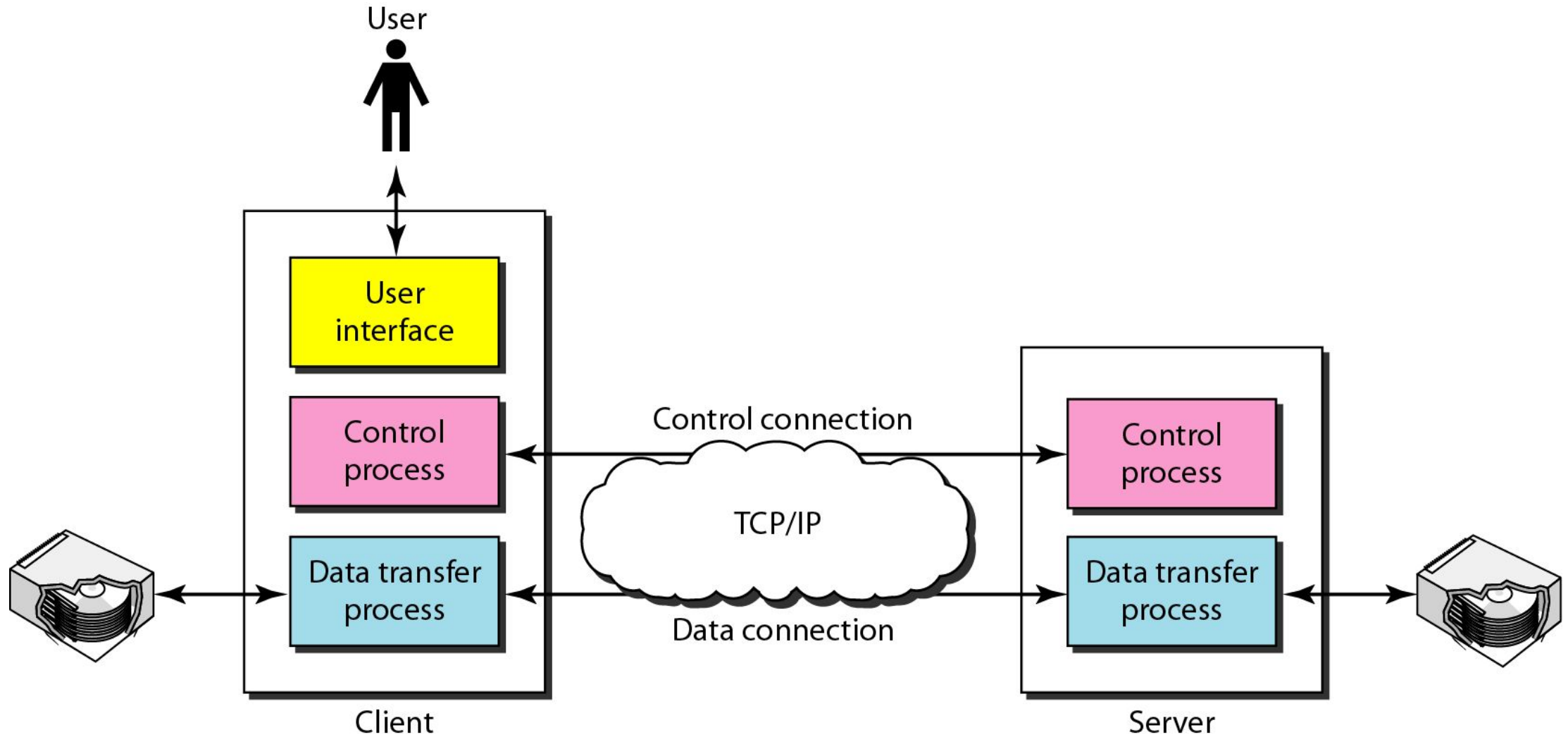## Topics discussed in this section:
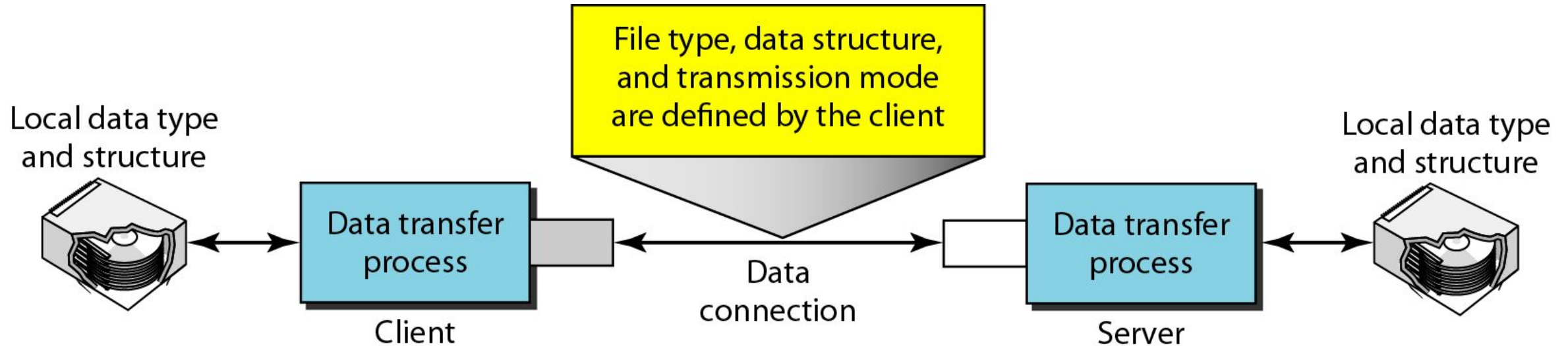
File Transfer Protocol (FTP)
Anonymous FTP

FTP uses the services of TCP. It needs two TCP connections.

The well-known port 21 is used for the control connection and the well-known port 20 for the data connection.

FTP

Using the data connection

The following shows an actual FTP session for retrieving a list of items in a directory. The colored lines show the responses from the server control connection; the black lines show the commands sent by the client. The lines in white with a black background show data transfer.

1. **After the control connection is created, the FTP server sends the 220 response.**

2. **The client sends its name.**

3. **The server responds with 331.**

4. **The client sends the password (not shown).**

5. **The server responds with 230 (user log-in is OK).**

6. **The client sends the list command (ls reports) to find the list of files on the directory named report.**

7. **Now the server responds with 150 and opens the data connection.**

8. **The server then sends the list of the files or directories on the data connection.**

9. **The client sends a QUIT command.**

10. **The server responds with 221.**

UEM

```
$ ftp voyager.deanza.fhda.edu
Connected to voyager.deanza.fhda.edu.
220 (vsFTPd 1.2.1)
530 Please login with USER and PASS.
Name (voyager.deanza.fhda.edu:forouzan): forouzan
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls reports
227 Entering Passive Mode (153,18,17,11,238,169)
150 Here comes the directory listing.

drwxr-xr-x    2 3027      411          4096 Sep 24  2002 business
drwxr-xr-x    2 3027      411          4096 Sep 24  2002 personal
drwxr-xr-x    2 3027      411          4096 Sep 24  2002 school

226 Directory send OK.
ftp> quit
221 Goodbye.
```

UEM

We show an example of anonymous FTP. We assume that some public data are available at internic.net.

```
$ ftp internic.net
Connected to internic.net
220 Server ready
Name: anonymous
331 Guest login OK, send "guest" as password
Password: guest
```

```
ftp > pwd
257 '/' is current directory
ftp > ls
200 OK
150 Opening ASCII mode
bin
. . .
. . .
. . .
ftp > close
221 Goodbye
ftp > quit
```