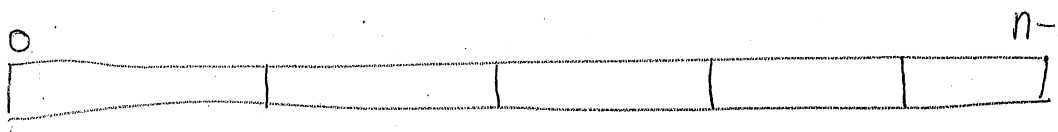
copy file using low-level I/O

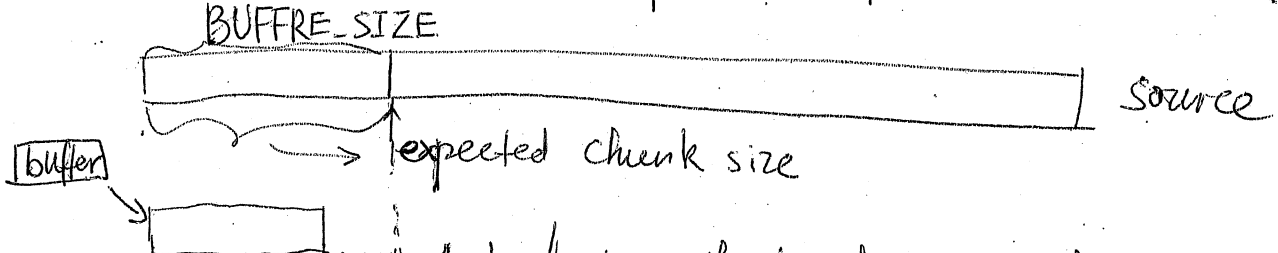


① each time we like to read in a chunk of BUFFER_SIE (1024) bytes and write it into the destination File!

② We repeat this process until all chunks are read in. This is performed by the outer while Loop!

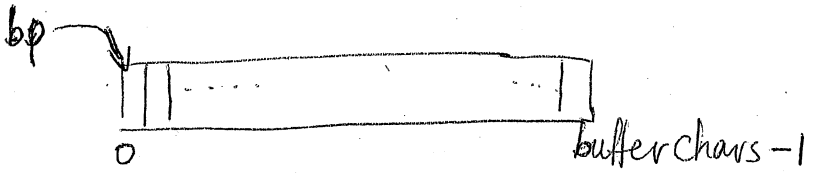
③ The reason to copy in piece-wise fashion is that we do not know the size of the source File, we can not read in the whole File into memory, Especially when the size of original File is larger than the RAM size!

For each iteration of the outer while Loop, it read in one chunk of data from source File.



①

The inner while Loop writes the data in buffer (size is bufferChars) into the destination File.



- bp points to the "start position of the data you write back
- bp is moving toward the end of buffer array !
- Because the write( ) function may not write the same amount of bytes that we specified in the parameter. E.g. write(wfd, bp, bufferChars) may not write back "bufferChars" characters into file. It could be less than that amount !
- That's why we need an inner Loop for writes ! We make sure all data that has been stored in buffer is completely write back to destination File !
- bufferchars is decreased after each write( ) call, meaning the remaining bytes of data that has Not write back yet !
- bp (the pointer) is increased after each write( ), meaning the start position for the next write operation
- We continue the inner Loop until remaining data is zero bytes; (bufferChars == 0) !