7.57:

To sort a big file using only two tapes, we first determine the size of a block that can fit into memory.

Then we split the input file into blocks of the determined size. Read a block of data from the input file into memory.

Sort each block in memory using quicksort.

Write each sorted block to the first tape.

Keep writing until all data from the input file is written onto the first tape.

Close the input file and the first tape.

Initialize a variable index to 0.

While there is more than one block on the tape,

a. Open the first tape in read mode and the second tape in write mode.

b. Read two blocks from the first tape.

c. Merge the two blocks into one sorted block using a merging algorithm.

d. Write the merged block to the second tape.

e. Close both tapes.

f. Increment index by 1.

If there is only one block on the first tape, rename the last block to the output file and close the first tape.

If there are more than two blocks, we repeat

a. Open the first tape in read mode and the second tape in write mode.

b. Read two blocks from the first tape.

c. Merge the two blocks into one sorted block using a merging algorithm.

d. Write the merged block to the second tape.

e. Close both tapes.

f. Increment index by 1.

If there is only one block left on the second tape, rename it to output and close the second tape.

Then clean up all the files and everything will be sorted.