

OS REFRESHER MODULE 1

README

1. Source and destination files are taken from the user. fread is used to read the content in the source file and fwrite is used to write the content of the source file to the destination file.
2. A number which is an unsigned integer can be bigger than the capacity of long so it is stored in a string. The string is sliced and every digit is added. If on adding two separate digits of two different number, which are at the same position the result is more than or equal to 10 then a carry is taken and added to the number at next position. The numbers, which are in the form of string are taken one at a time and are first converted to integers and then added.
3. A temporary variable is taken, which helps in interchanging or swapping of the value of two variables. For swapping the values of array, first the value of the element of the first array becomes equal to the sum of its value with the value of the other array element at the same position. Now value of array 2 is interchanged with the first array by subtracting the value of the sum of elements by the value of the element from the second array. Same is done for the first array's element.
4. For reversing a string, first a function is created to count the length of the character array entered by the user. An empty string is taken and a for loop is started from the reverse side (length of the character array). The value is added to the array every time till the loop ends.
5. First merge sort is done using the element at lowest index and the element at the highest index. Time complexity is $O(n)$ for the worst case. After this binary search is applied for unsigned integers by taking input as "%u". The sorted array is divided into two half every time after comparing the value and the middle element of the total numbers being compared.