

Eric Hall – CS469 – HOS02 Submission

The core difference between quick sort and merge sort is how they divide the input and partition the elements then merge them. For quicksort, it selects a pivot (typically random) and then rearranges or partitions the elements so that all elements less than the pivot are on the left and anything greater is on the right. It keeps doing this partitioning on each subarray until they're a base case of size 1 or 0.

Merge sort divides the arrays into two halves, sorts both, and then merges them back together. Splits keep happening recursively until each subarray contains only one element or base case and then merging begins.

Another difference is that quicksort happens within the allocated memory while mergesort requires additional space for merging.