

## MULTIPROCESS CONCURRENT QUICK SORT

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->In normal quick sort we divide array into two parts and then call function again on left part and then right part.

->In multiprocess quick sort we divide array into two parts then fork the process to apply sort on left and right part.

->We store the array in shared memory so it can be accessed by all the child process.

->The parent process waits until both the child process for left and right are completed by using waitpid();

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## MULTITHREADED QUICK SORT

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-> In multithreaded quick sort we divide array into two parts then create new threads to apply sort on left and right part.

-> The parent thread joins the two child threads using thread\_join()

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Then we compared the various methods by comparing the time taken in sorting.

Ex input:-

5  
7 2 9 1 4

Running concurrent\_quicksort  
time = 0.000004

Running threaded\_concurrent\_quicksort  
time = 0.000263

Running normal\_quicksort  
time = 0.000003  
normal\_quicksort ran:

[ 1.260873 ] times faster than concurrent\_quicksort  
[ 81.604300 ] times faster than threaded\_concurrent\_quicksort