Hi, we are going to review two sorting algorithm this week (midterm week)

Which include:

* Selection sort

For selection sort, you suppose to learn to complete both pseudo code & really c++ code. So we will go through the real code in SI session.

* Merge sort:

In 121 class, you don’t need to really write the code but you can learn the concept and write the pseudo code for them. You don’t need to write the real c++ code for merge sort for now. But I still give you an sample code for merge code for someone interested to know.

Selection sort:

void selectionSort(int arr[], int size)

{

int min\_index, tmp;

for(int i =0; i<size; i++)

{

min\_index = i;

for(int j=i+1; j<size; j++)

{

if(arr[j] < arr[min\_index])

min\_index = j;

}

if(i != min\_index)

{

tmp = arr[i];

arr[i] = arr[min\_index];

arr[min\_index] = tmp;

}

}

}

for pseudo code:

check this link and you will find the example for pseudo code:

<http://www.mathcs.emory.edu/~cheung/Courses/170/Syllabus/09/sel-sort.html>

Merge Sort:

void mergeSort(int arr[], int low, int high)

{

if(low < high)

{

int mid = (high + low) / 2;

mergeSort(arr, low, mid);

mergeSort(arr, mid+1, high);

merge(arr, low, mid, high);

}

return; //This return can be ignore

}

void merge(int arr[], int low, int mid, int high)

{

int size = high - low + 1;

vector<int> tmp(size);

int i = low;

int j = mid+1;

int k = low;

for(int i = low; i <= high; i++)

{

tmp[i] = arr[i];

}

while(i <= mid && j <= high)

{

if(tmp[i] < tmp[j])

{

arr[k] = tmp[i];

i++;

}

else

{

arr[k] = tmp[j];

j++;

}

k++;

}

while(i <= mid)

{

arr[k] = tmp[i];

i++;

k++;

}

//This while loop can be ignore

while(j <= high)

{

arr[k] = tmp[j];

j++;

k++;

}

}

If you are interested in merge sort, this will be a good resource:

<https://www.youtube.com/watch?v=GCae1WNvnZM>

and you can get some idea of pseudo code here:

<https://rosettacode.org/wiki/Sorting_algorithms/Merge_sort>

If the merge function is too much for you, try to explain in words and it will be fine.