Question **3**

Not complete

Marked out of 1.00

Implement static methods **sortSegment** and **ShellSort** in class **Sorting** to sort an array in ascending order.

```
#ifndef SORTING_H
#define SORTING_H

#include <sstream>
#include <iostream>
#include <type_traits>
using namespace std;

template <class T>
class Sorting {
private:
    static void printArray(T* start, T* end)
    {
        int size = end - start;
        for (int i = 0; i < size; i++)
            cout << start[i] << " ";
        cout << endl;
    }

public:
    // TODO: Write your code here
    static void sortSegment(T* start, T* end, int segment_idx, int cur_segment_total);
    static void ShellSort(T* start, T* end, int* num_segment_list, int num_phases);
};

#endif /* SORTING_H */
```

For example:

Test	Result

`int num_segment_list[] = {1, 3, 5};`
`int num_phases = 3;`
`int array[] = { 10, 9, 8 , 7 , 6, 5, 4, 3, 2, 1 };`
 	
`Sorting<int>::ShellSort(&array[0], &array[10], &num_segment_list[0], num_phases);`
	`5 segments: 5 4 3 2 1 10 9 8 7 6`
	`3 segments: 2 1 3 5 4 7 6 8 10 9`
	`1 segments: 1 2 3 4 5 6 7 8 9 10`

Answer: (penalty regime: 0 %)

Reset answer

```
1  // TODO: Write your code here
2
3  static void sortSegment(T* start, T* end, int segment_idx, int cur_segment_total) {
4      // TODO
5  }
6
7  static void ShellSort(T* start, T* end, int* num_segment_list, int num_phases) {
8      // TODO
9      // Note: You must print out the array after sorting segments to check whether your algorithm is
10
11 }
```