**Homework lecture 1**

**Sort**

1. Given a list of integer numbers: 2, 1, 10, 6, 3, 8, 7, 13, 20. Draw the steps to sort (ascending sort) the list by following methods:

* Selection sort

1 2 10 6 3 8 7 13 20

1 2 3 6 10 8 7 13 20

1 2 3 6 7 8 10 13 20

* Insertion sort

1 2 10 6 3 8 7 13 20

1 2 6 10 3 8 7 13 20

1 2 3 6 10 8 7 13 20

1 2 3 6 8 10 7 13 20

1 2 3 6 7 8 10 13 20

* Bubble sort

1 2 10 6 3 8 7 13 20

1 2 6 10 3 8 7 13 20

1 2 6 3 10 8 7 13 20

1 2 6 3 8 10 7 13 20

1 2 6 3 8 7 10 13 20

1 2 3 6 8 7 10 13 20

1 2 3 6 7 8 10 13 20

* Merge sort

1 2 6 10 3 8 7 13 20

1 2 6 10 3 7 8 13 20

1 2 3 6 7 8 10 13 20

* Quick sort

1 2 6 10 3 8 7 13

1 2 6 10 3 8 7

1 2 6 3 10 8

1 2 6 8 10

1 2 3 6 7 8 10 13 20

* Heap sort
* Radix sort

1. Same question for these lists:

* 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
* 10, 9, 8, 7, 6, 5, 4, 3, 2, 1
* 9, 10, 1, 2, 3, 4, 5, 6, 7, 8
* 3, 4, 5, 6, 7, 8, 9, 10, 1, 2

1. Write a program to sort (ascending sort) the list by following methods:

* Selection sort
* Insertion sort
* Bubble sort
* Merge sort
* Quick sort
* Heap sort
* Radix sort