## Шайма бидан ALGORITHMS FUNDAMENTALS THEORY

КН 220 i.в

### **Laboratory Training 4**

*SORTING ALGORITHMS*

**Objective:**

To explore algorithms of sorting and binary search.

**Task**:

Develop a program that reads from the keyboard numbers N, M (1 < N, M < 256), a sequence of N keys (integers or real numbers, depending on the variant), and a sequence of M keys. The program saves the first sequence into an array and performs sorting. The program then displays the sorted sequence on the screen and performs a binary search for each element of the second sequence x: for every x announce whether he is in the first sequence, and if so, where is it.

**Variant 5:** (*Heapsort*)

*Heapsort:*

Heap sort is a comparison-based sorting technique based on Binary Heap data structure. It is similar to selection sort where we first find the minimum element and place the minimum element at the beginning. We repeat the same process for the remaining elements.

Suggested Code: