

ABSTRACT

for coursework, student Mykola Ivanov, group XA-41
on discipline "Computer technologies and programming" on the topic of
"Development of the project for the studying of sorting algorithms"

After analyzing the task, the means necessary for its implementation were determined. In the coursework, five sorting algorithms have been studied: insertion, Shell, bubble, counting and selection. Studies were carried out by both linear arrays of custom size (set by the user), and by sorting matrix columns in decreasing order of their maximum elements. The development environment Visual Basic 6.0 was used. A project that includes 7 forms was developed. The program allows user to sort square matrixes of any size (up to 585 items) with chosen method. The sorting time and the number of swaps for the selected methods can be researched. The results of sorting and research are displayed in the graphs, diagrams and histograms. The program provides an opportunity to record that data in a file.

The performance of each method and the dependence of the efficiency on the length of the array were studied. It is shown that the bubble method is effective for nearly sorted arrays only. Insertion and Shell methods are not very effective, but they are faster for sorting nearly sorted arrays than selection and counting. Selection method is not effective regardless of array size. The counting method is the most effective among the chosen methods, even though it is rational to use it with integer elements only.

In addition, the possibilities for developing user interface of such controls as PictureBox, Frame, Shape, Line, MSFlexGrid, CommonDialog, SSTag, Marchoso.