ABSTRACT

for coursework, student Klymenko Dmytro, 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, cocktail and comb. Studies were carried out by both linear
arrays of custom size (set by the user), and by sorting matrix columns in ascending
order of their smallest elements. The development environment Visual Studio 2010
was used. A project that includes 12 forms was developed. The program allows
user to sort square matrixes of any size (up to 655 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 table and chart respectively.
The program provides an opportunity to record that data in a file. Each form has a
reference with detailed instructions for the user.

The performance of each method and the dependence of the efficiency on the
length of the array were studied. It is shown that among the studied methods the
most effective are Shell and comb. Based on the obtained results it was inferred
that the comb sort is less dependent on the length of the array and is generally
more stable.

In addition, the possibilities for developing user interface of such controls as
Chart, DataGridView, RichTextBox, OpenFileDialog, SaveFileDialog, TabControl
and ContextMenuStrip were discovered.