

DISTANCE SCHOOL IN DISCRETE MATHEMATICS: LEARNING ALGORITHMS ON GRAPHS

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The article is dedicated to the project named “CTE Distance School on discrete mathematics”. The objective of the project is to create interactive tools for distance learning of discrete mathematics algorithms by school students. Authors assume that the graph theory and algorithms on graphs can be made understandable for school students by means of the new form of teaching supported by computer technologies.

Educational instruments, distance learning, manipulator.

Today discrete mathematics is not the part of the school program of neither mathematics nor informatics. But nothing prevents some of its areas, especially the graph theory, to be included in the course of basic education. The graph concept is visual and intuitive and thus it is a good object to be studied by school students. The same can be said about algorithms on graphs, they usually have natural visualization and that makes them more understandable for young people.

The particularity of the project is that all work of student acquiring an algorithm is totally automated. Thus the further learning of the graphs theory at the university (including algorithms consistency proof and algorithms complexity) will rely on the knowledge received before entering the university.

The supporting software is implemented based on the Flash technology. All tasks are created as the laboratory-games. A student has a possibility to study an algorithm step by step on the randomly generated example. Anytime a student can switch to the training mode after which the program will follow up the algorithm execution and block the wrong actions. Finally the student can pass through the algorithm without any blockings but the program will silently check the execution in general.

The teaching materials of the CTE Distance School will be displayed on the presentation. Also the different distant learning projects components interaction will be analyzed.