Teaching graph algorithms with Visage

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Abstract. Combinatorial optimization is a substantial pool for teaching authentic mathematics. Studying topics in combinatorial optimization practice different mathematical skills, and because of this have been integrated into the new Berlin curriculum for secondary schools. In addition, teachers are encouraged to use adequate teaching software.

The presented software package "Visage" is a visualization tool for graph algorithms. Using the intuitive user interface of an interactive geometry system (Cinderella), graphs and networks can be drawn very easily and different textbook algorithms can be visualized on the graphs. An authoring tool for interactive worksheets and the usage of the build-in programming interface offer new ways for teaching graphs and algorithms in a classroom.

Key words and phrases: graph algorithms, discrete mathematics, mathematical programming, minimum spanning tree, educational software, geometry software, combinatorial optimization.

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