

Instructions for use

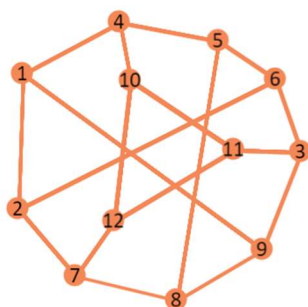
By launching the application, the user is presented with a page titled "Ispitivanje svojstava grafa". The rest of the page is divided into two parts: the left part is used to display the graph, while the right part is used to display the adjacency matrix and the tested properties. (Figure 4.2.1).



Figure 4.2.1. The appearance of the page after launching the application

By clicking the "Dodaj vrhove" button, the option to draw (add vertices by clicking the mouse) on the left side is unlocked. The user adds all the vertices of the graph they want to analyze. The ordinal number of each vertex is displayed for easier navigation. By clicking the "Dodaj bridove" button, the user can draw edges by clicking the mouse, first on one vertex and then on

another vertex with which the desired edge will be incident. The edge appears immediately on the screen (Figure 4.2.2).



Slika 4.2.2 Appearance of the drawing space after graph plotting

By clicking the "Dodaj bridove" button, the user is presented with an empty matrix on the right side, which they fill in as follows: the element i, j of the matrix represents an edge between vertices i and j and must have a value corresponding to the number of edges between the two vertices. If there are no edges between two vertices, zero can be entered or the field can be left empty. If a vertex has loops, the element i, i of the matrix is filled with a value twice the number of loops for that vertex. After clicking the "Prikaži svojstva" button, the application warns the user of incorrect input if the matrix is not symmetric, if the value of the element at i, j where $i = j$ is odd, or if a non-integer value is entered.

Thus, the user can enter the edges of the graph by directly drawing on the left side of the screen by clicking on selected vertices, or by filling in the adjacency matrix. The user can also combine these two methods.

After correctly entering the values of the elements into the matrix, the user initiates the loading of the matrix into the program and testing of the desired properties by clicking the "Prikaži svojstva" button. If the graph is highly complex (with a large chromatic index), the program may take several seconds to check all properties. After running the program, the user can see a graph whose vertices and edges are colored according to the found values for the chromatic

number and chromatic index on the left side of the screen. On the right side, the user still sees the adjacency matrix below which the test results are displayed (Figure 4.2.3).

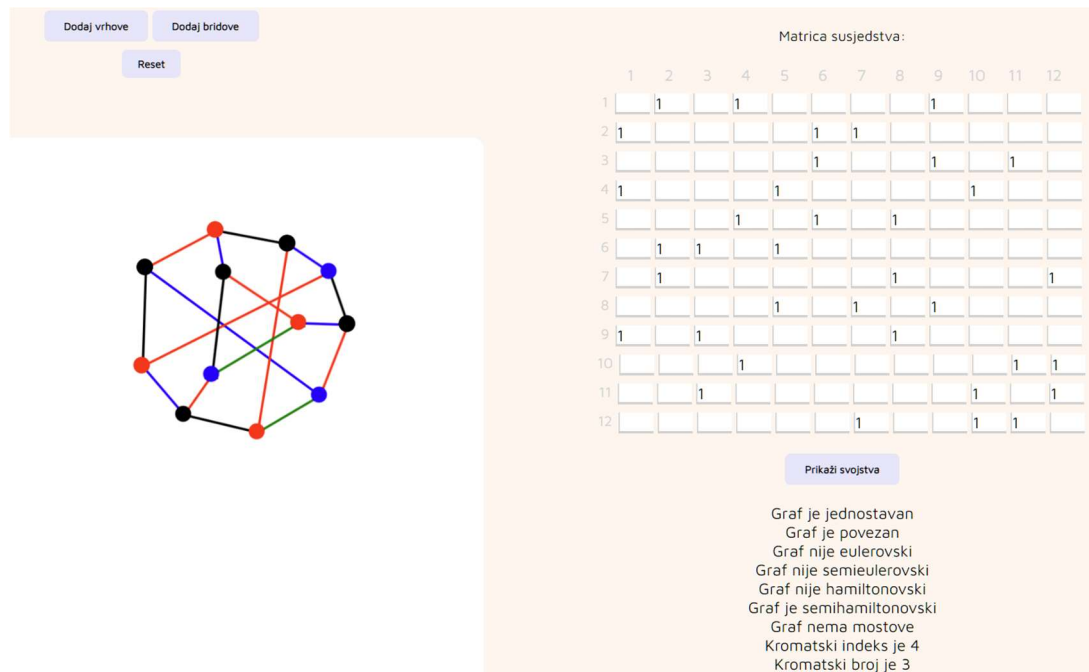


Figure 4.2.3 Result of checking properties