VisualMinSpanningTree

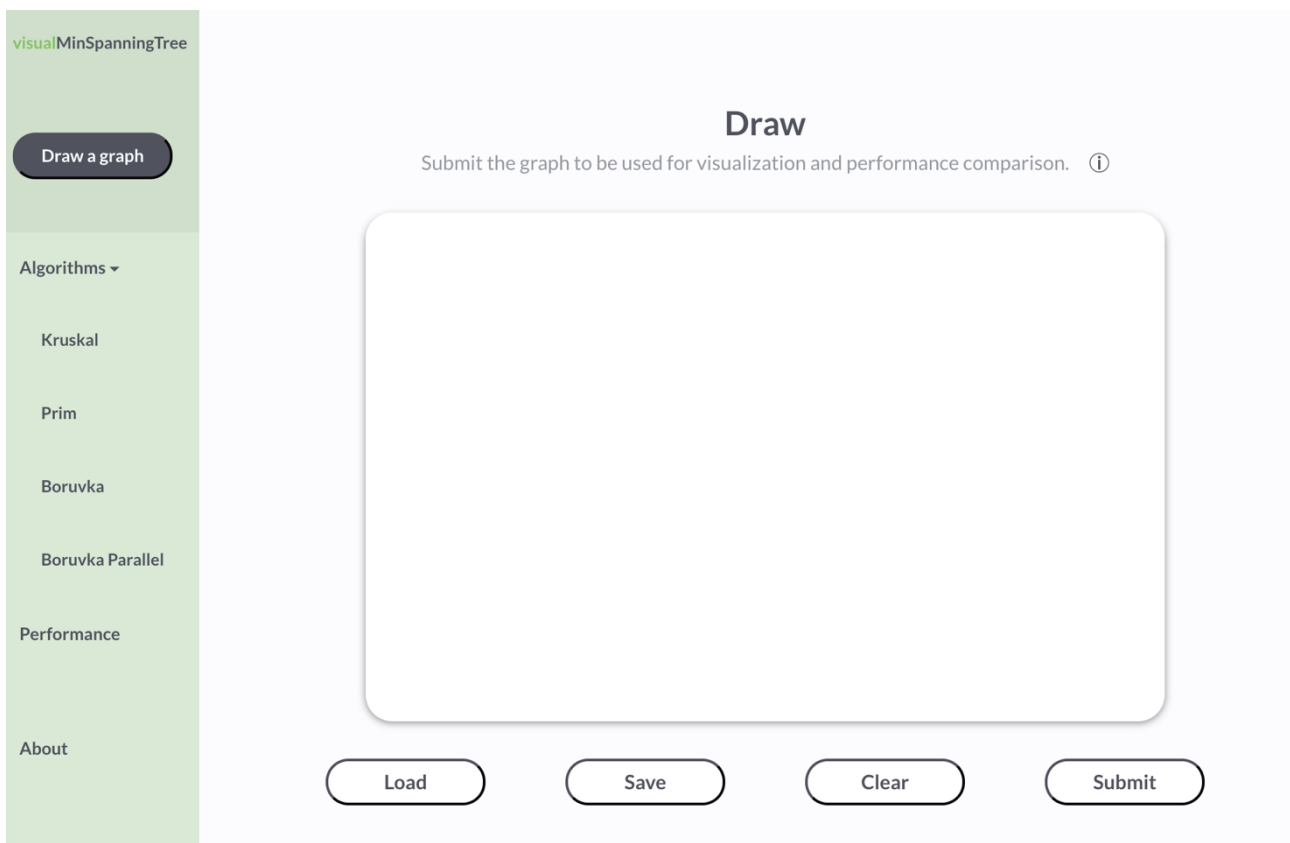## User Guide for New Users

Draw a Graph

The software allows the creation/drawing of the graph. User can draw a graph according to the following instructions:

- Double click on empty space to create a node.
- Drag from vertex to vertex to create an edge.
- Right click on edge or node to delete it.
- Click on the weight and you can manually change with a new weight.

*Constraints are imposed when creating the graph: the graph must be a spanning tree, that is a directed graph with all vertices connected.

The draw screen also provides other functionalities:

- **Load:** Click on "Load" button to load an old graph from the database.
- **Save:** Click on "Save" button to save the current graph (name must be provided for the graph)
- **Clear:** Clear everything that is drawn on the canvas.
- **Submit:** In order to see the computation of different algorithms of the current graph, must click on "Submit".

visualMinSpanningTree

Draw a graph

Algorithms ▾

Kruskal

Prim

Boruvka

Boruvka Parallel

Performance

About

Draw
Submit the graph to be used for visualization and performance comparison. ⓘ

Load   Save   Clear   Submit
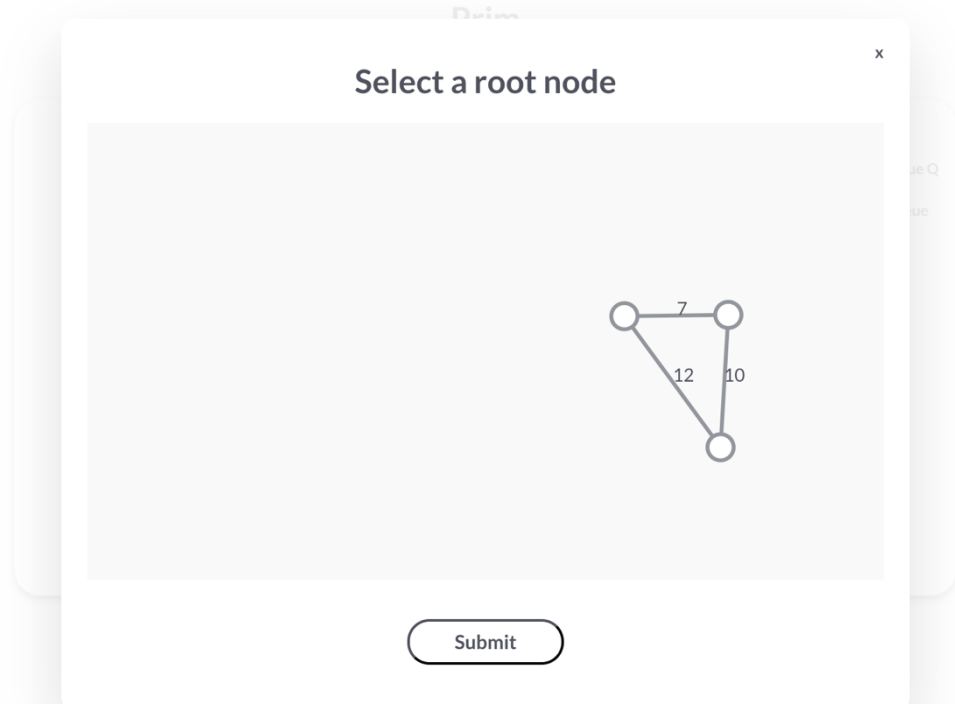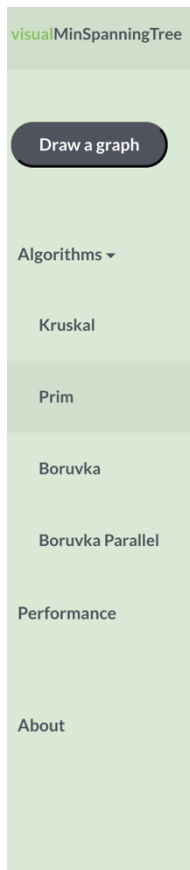
Algorithm Visualization

The software allows the visualization of different graph algorithms.
The left canvas shows the graph and the right canvas shows the pseudocode of the algorithm.
After a graph is submitted, click on "Start" button and a player control will be displayed.

"Play": when is clicked, will be replaced by "Pause" and start an automatic visualization of the algorithm.
"Pause": stop the automatic visualization of the algorithm.

Record the step of the algorithm, but the green point can also be dragged forward and backward (algorithm visualization will change accordingly).

By clicking on "Previous" or "Next", the previous or the next step of the algorithm will be displayed.

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Select a root node

x

7

12   10

Submit

In the Prim screen, user must select a root node for the computation of the Prim's algorithm. User can do it by just clicking on a random node and Submit it.

Color legends for the graph visualization:
- Red: edge or node is highlighted, the one which is now considering.
- Green: edge that is part of the minimum spanning tree.
- Grey: not considered and not part of the minimum spanning tree.

Compare Performance
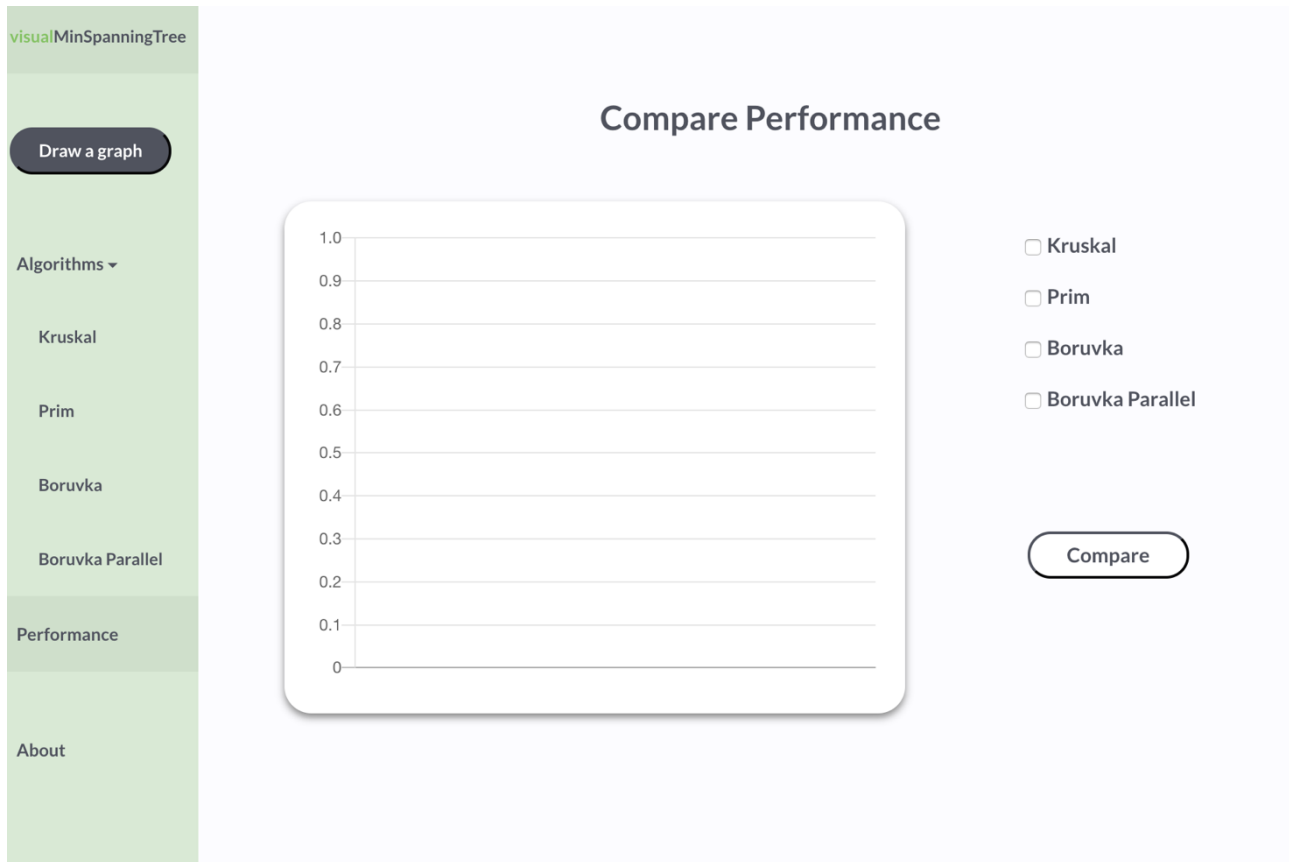
The software allows the comparison of the performance of different graphs.
User can check different checkboxes and by clicking on "Compare", a line graph will be displayed.