Software Requirements Specification

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Graph maker

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# Introducing

## Purpose

The purpose of this document is to present a detailed description of the application named as Graph Maker. It will explain the purpose and features of the application and what the application will do. This document is intended for both the stakeholders and the developers of the application.

## Scope of project

The application will be a simple graph builder that allows building an undirected graph according to data provided by user. The purpose of the application is to provide easy and fast way to build a graph, manipulate with it, save it in a way to have an ability to continue work with it later or save it as a picture.

## References

### [Issue in Jira](https://velocity.globallogic.com/jira/browse/TRLWO-1804).

# Software requirements

## Functional requirements

* FR-1. Drawing a graph by entered data. In a new document a graph should be drawn automatically according to number of vertices and lines provided by user.
* FR-2. Moving graph vertices. After graph has drew user can change it by changing vertices position. Lines should follow vertices as well. To change vertex position a user should enter new coordinates from keyboard or move vertex by dragging it with mouse.
* FR-3. Finding a spanning tree. The application should have an ability to find a spanning tree in the graph. It should highlight the tree by changing lines color.
* FR-4. Saving a graph as a picture. This requirement provides saving a graph as a picture.
* FR-5. Saving a graph as a XML/JSON. User can save a graph to have an ability to work with it later. It could be reached by saving graph structure and properties into XML or JSON file.
* FR-6. Opening a graph. This requirement allows user to open a graph from XML or JSON file (saved before) and then draw it.
* FR-7. Changing graph properties. Provide an ability to change graph properties such as vertices name, position, color and lines weight, color, vertices that lines connect.

## Non-functional requirements

* NFR-1. Non-blocking UI. It should not freeze while using the application. It should not freeze while drawing a graph or while moving graph vertices.
* NFR-2. Graph picture type. Save graph picture as a .png picture.
* NFR-3. Language/libraries. Use Qt, C/C++, STL to build the application. Usage of additional libraries or third party code is prohibited.
* NFR-4. Documentation. Next documents should be created before building the application: software design documentation (application modules description, class diagram, sequence diagram), application mockups.