

Murelahendaja/Troubleshooter

What is *Murelahendaja*?

Murelahendaja is an online tool which allows users to create and share step-by-step guides. In addition *Murelahendaja* allows insights into how visitors use each guide. This is accomplished by tracking visitor responses and counting how often each step has been visited.

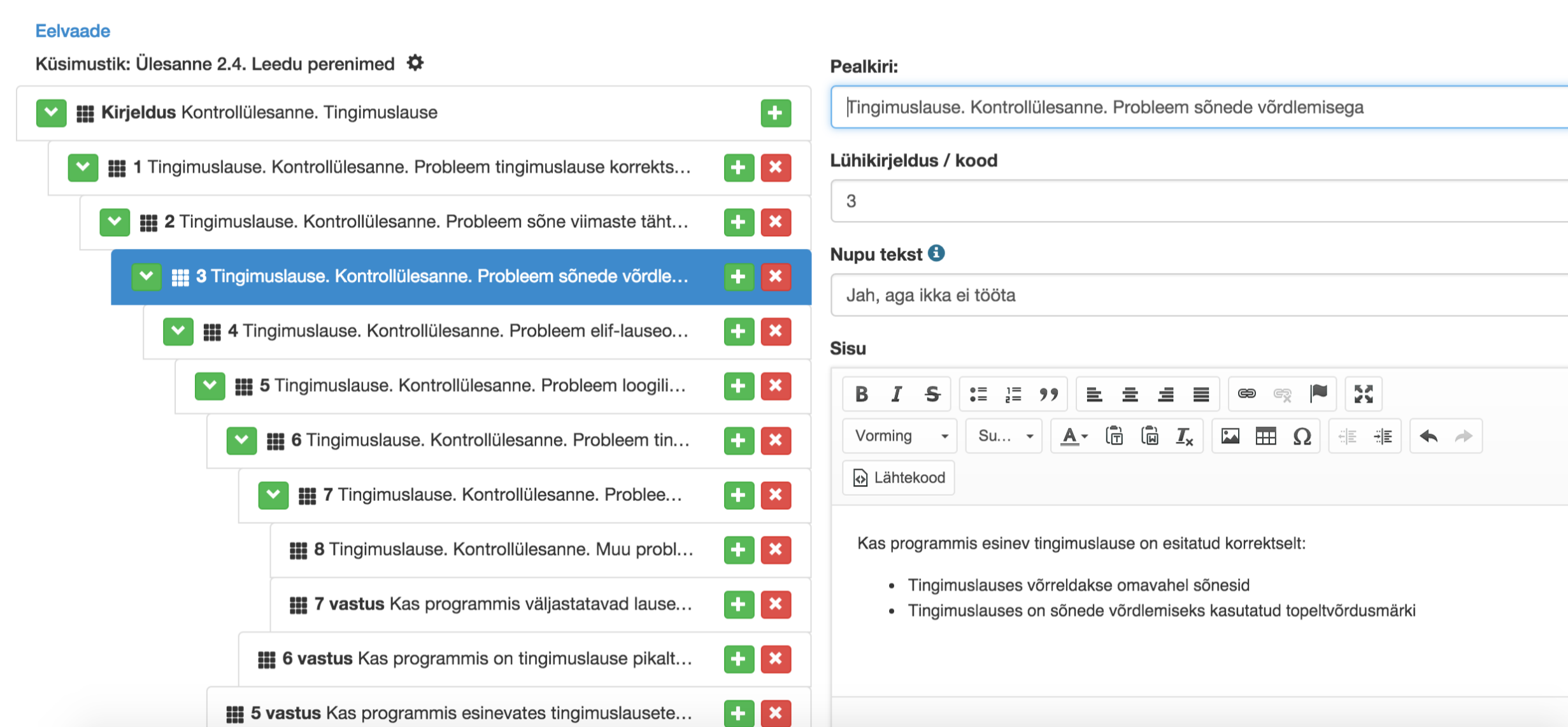
Background

We had a 4 week online introductory programming course which had more than 1500 participants. During these 28 days, we received over 2000 e-mails, which totals over 70 e-mails per day. On the other hand our team only consisted of 10 members who answered these e-mails while also being otherwise employed. Because there seems to be ongoing demand for this kind of service it seemed prudent to reduce the amount of e-mails this kind of small team would get. That's why we created *Murelahendaja*.

General information

Murelahendaja creator environment (Picture 1) can be found at progtugi.cs.ut.ee/#/login.

It's available and free to use for everyone. The friendly design allows for easy adjustments of the contents. This would be more difficult to accomplish by using traditional writing methods. Each troubleshooter is created with a unique sharable link which can be used everywhere.



Picture 1. Environment for creating step-by-step guides

How are we using it in our current course?

- We analyzed the data and feedback of the previous course.
- We mapped a large variety of potential problems.
- We improved existing troubleshooters and created new ones using *Murelahendaja*.
- We made *Murelahendaja* available to the course Introduction to Programming (Programmeerimise alused) via the links under the ongoing course materials.
- We keep an eye on statistics and adjust content when necessary.

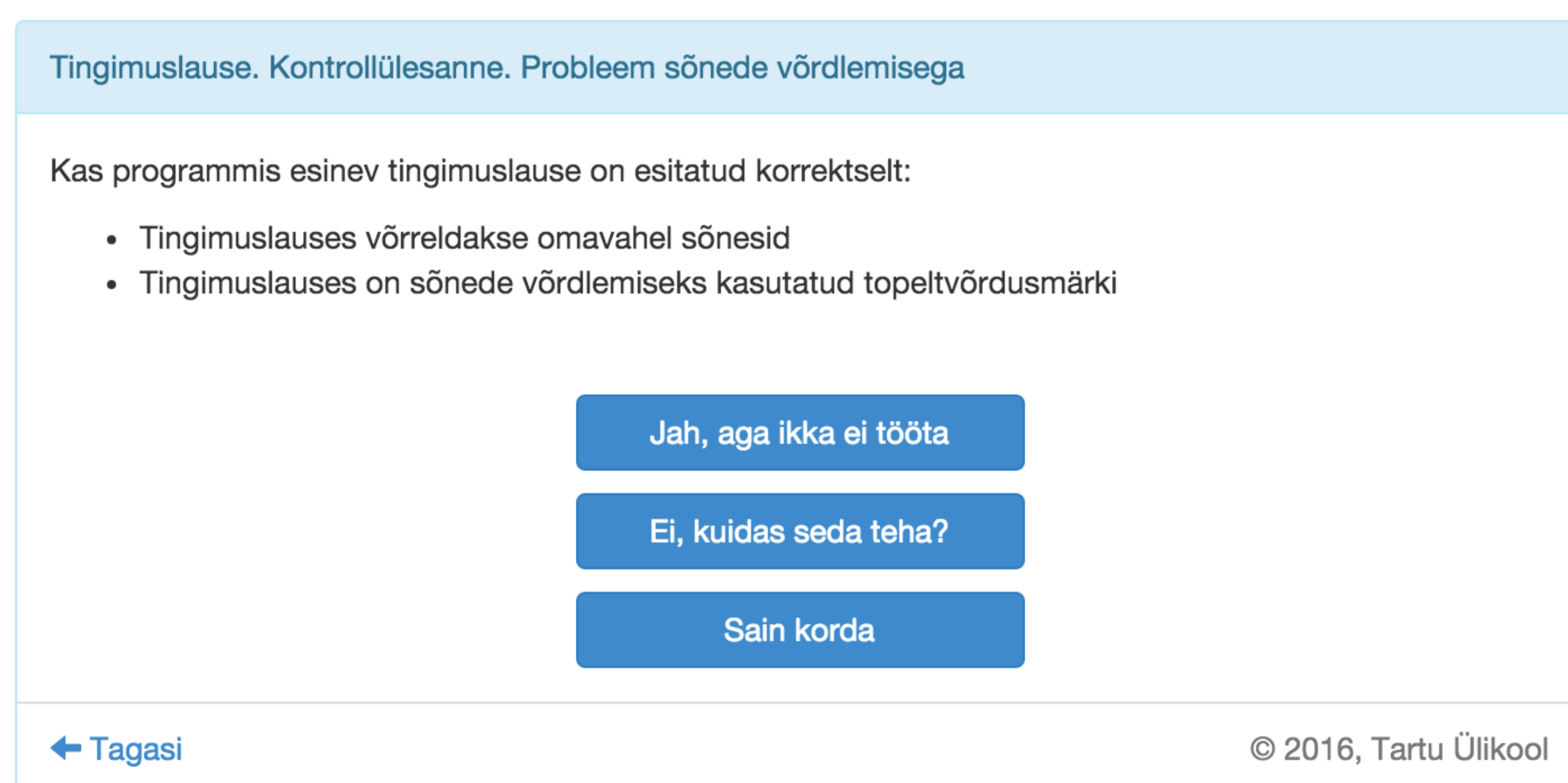
Feedback

I like the solution. Whenever I feel like I don't know where to start then I use it.

Murelahendaja has helped me on a number of occasions. It is a commendable addition to this course!

Features:

- Create steps;
- Add content to each step;
- Change the order of steps;
- Remove steps;
- Add a success step when visitor has found a solution;
- Share edit access with other users.
- Add comments to each step (visible to creator only)



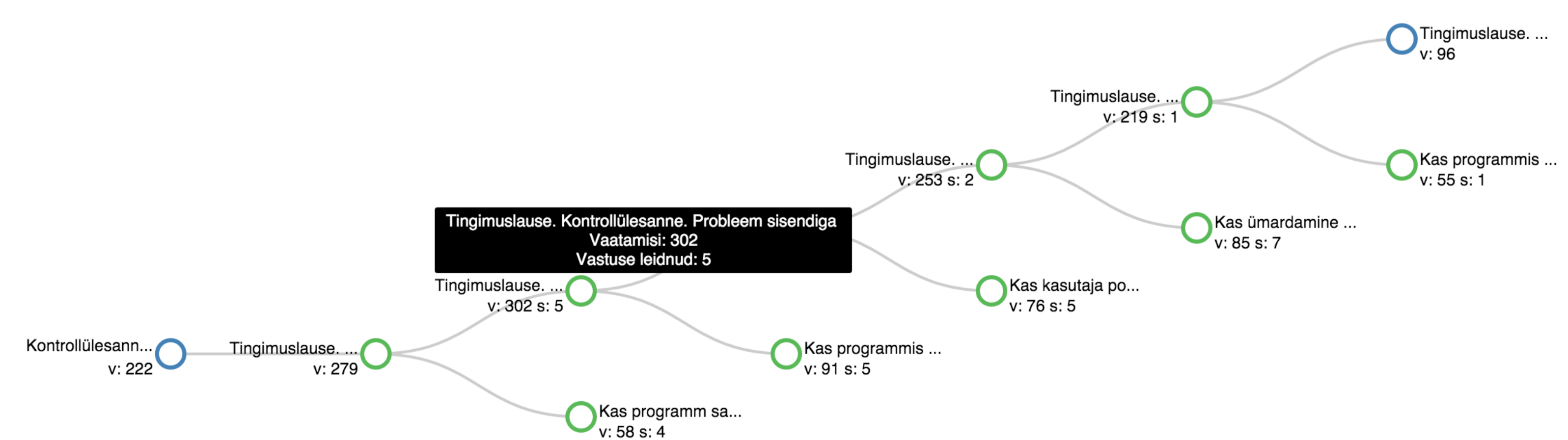
Picture 2. Example of the visitor view

Visitor View

This is the visualization of a single step for the visitors in *Murelahendaja*'s visitor view. Visitors view (Picture 2) is fairly simple and minimalistic in order to reduce the number of potential errors made by the visitors. Visitors can move back and forth as many times as they desire. Every user move is also recorded for later overview in statistics. Finding the problem from *Murelahendaja* reduces significantly the number of questions received via e-mail; thus saving time for both: the student and the teacher.

Statistics

In the statistics view (Picture 3) users can see the structure of their troubleshooter as well as detailed information about the content views and the amount of visitors who have found solutions to their problem. Different colours are used to make the tree-structured statistics page more readable. The circle turns green if particular step has a found solution option enabled, otherwise the circle is blue.



Picture 3. Common example of tree-structured statistics

Source code and extra information can be found at <https://github.com/vellov/tsv3>.