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Software Project 2017/18 fall

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Gamified Exercises for Learning 9th-Grade Physics and Geography

Customer: Leo Siiman

Ninth grade is typically the time when pupils find that physics and geography become boring, because the concepts become increasingly abstract and hard to difficult to understand by just listening to the teacher or reading them from a book. Lessons get boring and pupils less engaged, leading to academic failure.

With modern interactive computer technology, we can stop this!

We are a grassroots group of educational technologists looking to turn around the way physics is taught in middle school and high school. We have developed already several gamified exercises for learning physics concepts. Two examples of our apps are:

- A single-player gamified exercise set for digital problem-solving, 3D geographical landforms and biology (<http://lingid.ee/leo1>)
- A multi-player game for learning the concepts of balance, torque and equilibrium. See: <http://lingid.ee/leo2> (<http://lingid.ee/leo2>) and <http://lingid.ee/leo3> (<http://lingid.ee/leo3>) (instructions: Connect to each app separately and type in the same "collaborative room" in both to play).

We need help to develop further games in order to have a critical mass to bring them into use in Estonian schools.

In this project, you will develop a Web application consisting of a collection of single and multi-player gamified exercises to learn 9th-grade physics and geography concepts, specifically: reliefs, contour maps, weather and water bodies. The exact scope of the project can be negotiated, but we have concrete ideas already of two single-player and one multi-player game. We can start with the single-player games in your first iteration and the multi-player game in your last project iteration.

We will use cool rapid prototyping technology: HTML5 and JS, Three.js, Blender 3D,

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Google Apps Script to store and retrieve data between a web application and Google cloud services, and Firebase.

Call for Projects

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