# Conceptual design and development of serious game for learning topographical maps

# Abstract

# Introduction

# Theoretical background

# Methodology

# Results

# Discussion

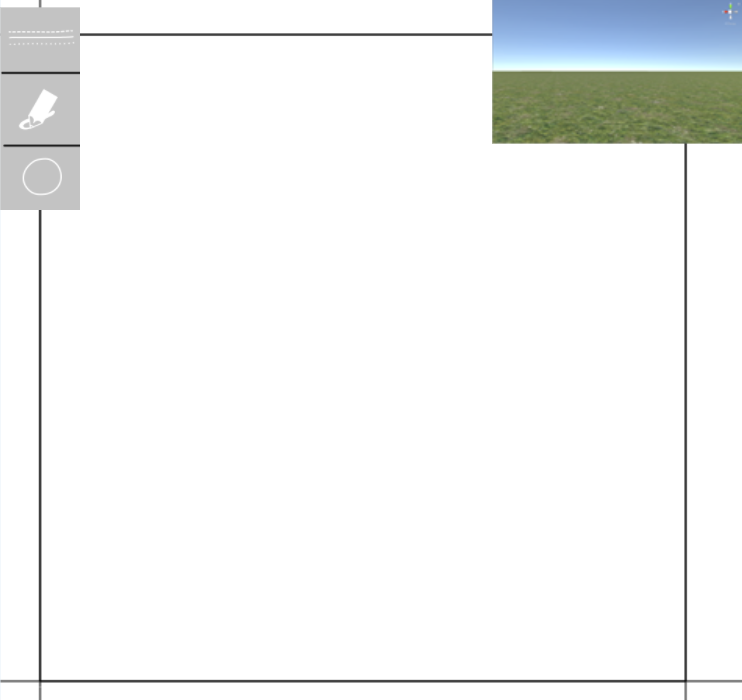
# Summary

# Extras

## Scenario of usage

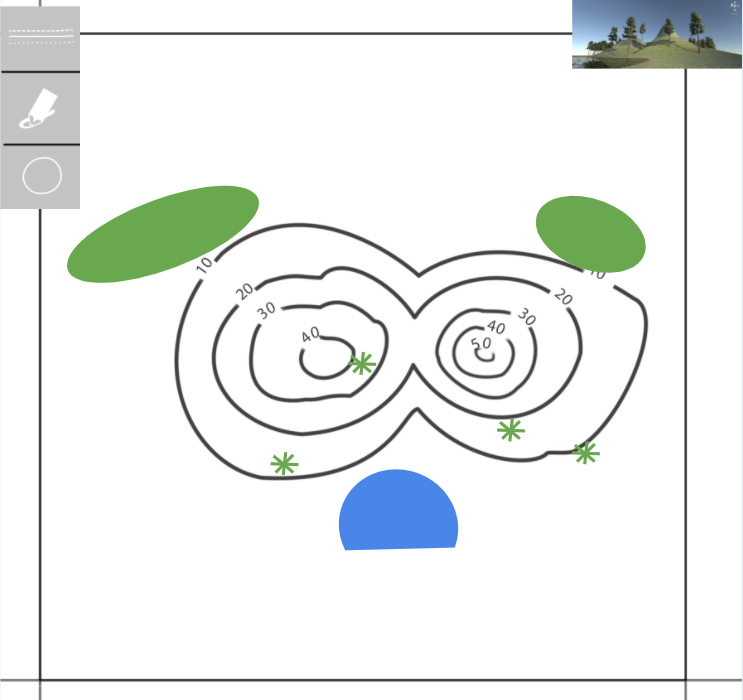
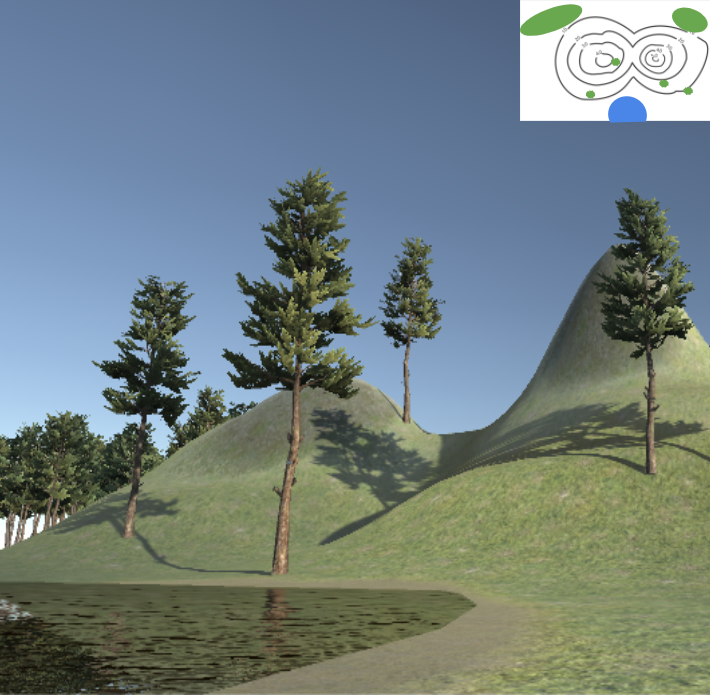
Nate has just started studying geography in 6th grade and the teacher has assigned the first homework for the pupils. The assignment is to download the digital learning game “Topographics” to their smartphones or tablets via Google Play; then start and complete the tutorial in the program, and post results to e-school, or send them via e-mail to the teacher. Unfortunately Nate does not own a smartphone, so the teacher suggests Nate to use the program in the computer class instead.

In the computer class, Nate logs in on a PC, and opens the learning game “Topographics” by double-clicking the program’s icon on the desktop. The program opens and shows options to “start drawing a map”, or to “start the tutorial”. Nate chooses the option for the tutorial, and the screen changes to “the drawing view”. This view contains a drawing canvas, a toolbar on the left of the screen and to the top-right corner of the screen there is a small window showing a flat landscape.



A text “Click here” appears next to the toolbar, with an arrow pointing to a “line” icon in the toolbar. Nate clicks on the icon, and the text changes to “Click & drag to draw a shape”, and an arrow pointing to the canvas. Nate clicks and drags on the canvas and sees a line appearing where the mouse cursor is moving. When he releases the mouse button, he notices the landscape change in the landscape window on the top-right corner: the landscape has raised in the exact shape as Nate drew the line. Next to the landscape window appears a new text “Congratulations! Now you know how to raise the terrain! Click on the terrain window to have a closer look!”

After clicking on the terrain window, the canvas disappears and the “landscape view” is shown in full screen. Nate is introduced how to look and move around in the landscape and also how to switch back to the drawing view. Then the tutorial continues to introduce other tools, such as colors and symbols. After another minute, Nate has created two hills, a lake and some trees which he is eager to start exploring in the landscape view.

Now the tutorial introduces Nate the final task: the canvas zooms out, revealing the grid of the map on the canvas, and ordering Nate to fill all the 9 squares of the grid with any of the tools found in the toolbar.



After finishing the final task, the tutorial shows Nate how to save the work and share it online or by e-mail. Nate sends the work to his teacher, but also chooses to share images of the newly created world on social media, so others can see his creation too.