**Teacher's guide** This exercise focusses on getting the students up an running with Scratch, how to use the command line, and how to produce a simple report in LaTeX. It has no assumtions on the student's abilities.

**Topics** Imperativ programmering using Scratch, command line/terminal and the file structure, a text editor, report writing using LaTeX

**Difficulty level** Easy

**Introduction** Scratch is a visual programming language using the imperative programming paradigm and where the programming elements are structured as blocks with connectors.

## Questions

**0.0.1:** Install Scratch on your machine.

**0.0.2:** Make your own "hello world" Scratch-program. The program must make default sprite say "Hello World" when you press the green flag.

**0.0.3:** Make a Scratch program with a sprite of your own choosing, which moves on the screen using the 'glide' and the 'forever' loop.

**0.0.4:** Take one or more screenshots of your Scratch-program while it runs.

**0.0.5:** Make a Scratch-program, which counts down from 10 to 1. You must use a variable and a repeat loop.

**0.0.6:** Make a Scratch-program, which counts down from 10 to 1. The countdown must first start, when you press the mouse.

**0.0.7:** Make a Scratch-program, which counts up every even number from 0 to 20.

**0.0.8:** Start the command line (or terminal on MacOS), select and use `cd` to move the filepointer to a suitable place for your work. Create a directory from the command line. Use a text-editor to create a LaTeX document using the class `article`. The preamble must define the title "Hello world", your name as the author, and today's date as the date. The main part of the document must use `\maketitle` to produce the title and the text "Hello again". Convert the LaTeX to `pdf` from the command line.

**0.0.9:** Write a short report in LaTeX with Emacs and translate the `tex`-file to a `pdf`-file using the command line. The report should as minimum contain:

- A title produced using `\maketitle`,
- A section with a section title using `\section`,
- One or more figures of screenshots from your program and by using the `figure` environment, and it must include a caption text using `\caption`.
- A reference to the figure using the `\label`–`\ref` pair.
- The Danish letters 'æ', 'ø', and 'å'.