VG100

Introduction to Engineering

Lab 1

Michele & Manuel — UM-JI (Summer 2020)

Goals of the lab

- Project structure

- View module

- Elm playground

Lab structure

Experimental setup in two parts: (i) previous homework review and (ii) lab specific tasks. The later part should be completed in groups, the time for each set of tasks and group sizes being pre-set.

After a few weeks a survey will be organised to check whether sticking to this setup of adjust to a more regular lab specific task only setup.

Preparation (15 min − 4-5 students)

- Complete the installation of the Tetris game and explore the source code.

- Learn "jumping" to the definition and references of functions and types from within your text editor.

Group presentations (3 groups − 2 min each)

- Demonstrate the working environment;

- Explain how to use it, e.g. shortcuts, menu options;

HTML related tasks (20 min − 4-5 students):

- Open the View.elm file and search for the `div` tag.

- Check online how to use `div` inside HTML code.

- Compare how `div` is used in HTMl and how it is used in Elm.

- Alter the color of the "Pause button" in the Tetris game.

- Change the game introduction text.

- Modify the appearance of the Left, Right, Down, and Rotate buttons. For this question you are only bounded by your imagination...

Group presentations (2 groups − 3 min each)

- Briefly introduce HTML language (1 group);

- Briefly introduce HML tags (1 group);

- Show, share, and explain what changes were applied;

In VG101 lectures we built a small home which automatically zooms in and zoom out (Figure 1). Using Elm playground package, we want to reproduce a similar effect.

Elm Playground tasks (45 min – 4-5 students):

- Read through Elm Playground documentation.

- Refer to slide 2.12 and `https://elm-lang.org/examples/animation` to understand how to create shapes and animate them.

- Draw the basic home.

- Animate the home.

- Refer to slide 2.19 and `https://elm-lang.org/examples/keyboard` to understand how to handle keyboard events.

- Allow the user to rotate the home by pressing keys.

Group presentations (6 groups – 5 min each)

- Briefly introduce Elm Playground (1 group);

- Draw the basic home (1 groups);

- Zoom the home in and out (2 groups);
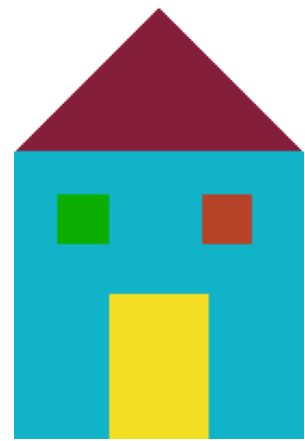
- Rotate the home using the keyboard (2 groups);

Figure 1: Vg101 home