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| Snake Game  Fabian Müller | |
| We Elevate |  |

Introduction

Initial position

As part of the talent program, I was able to choose a small project. I will have to plan, manage, and execute the project by my self with support of the instructors from the department. The main goal of this project is to learn and explore. There are no specific boundaries given, nor a set turn in date.

My project

The project I chose was to build my own snake game. It is planned to be done in C++ and should run on an Arduino. That it is not too easy, the game has to support multiplayer. The multiplayer is in the local network and inspired by the game slither.io where two players can battle each other.

Snake

Snake is a simple 2D game, which was developed in the end of the 1970s.

It consists of a chess like board, a snake and a fruit. Every tick the snake moves one field forward. The player can choose the direction up, down, left, or right. If no input is given, it will just go one forward. By eating the fruit, the snake increases its length by 1 field. The goal of the game is, to get as long as possible, without hitting the border nor the snake body. When the fruit is eaten, it will spawn at a random new location.

Planning

Tasks

* Create algorithm (High) 0.5d

Come up with a basic algorithm, how the field and snake should be handled in the logic.

* Implement solo game basics (High) 1d

Get the base algorithm running. Set tick speed, game rules, handle 2D array field

* Implement control (High) 1d

Give the player the ability to control the snake.

* Create a local network (High) 1d

Setup a small network with ZeroMQ for a foundation for multiplayer.

* Fix communication (High) 3d

Handle the communication between the players, to synchronize the game.

* Implement multiplayer game rules (Medium) 0.5d

Add game rules for multiplayer that there is actually gameplay (winner/loser).

* Add Menu(medium) 1d

Create a menu, where the player can set some game options.

* Create a fancy UI (Low) 1d

Make the game look nice.

* Bug fixing (High) 3d

If it works on the first try, it would be a miracle.

Total: **12d** => Can be done in 2 workweeks 😉

(I am probably underestimating some parts, because I will have to invest a lot of time in a small, unexpected problem.)

First sketch

