Milestone Report 2

Physical Prototype for a Twitch-based Puzzle-Action-Game

1 Prototype Setup

1.1 Timer

The game is intended to be played in real-time, meaning the player can manipulate the current play state at any time. As this is not quite easy to achieve with a physical prototype we use an iterative approach, one could say turn-based, to account for this problem. However, because we still want to display some kind of time flow, we decided to incorporate a physical timer which decreases by ten time units (e.g. seconds) when a turn is performed during gameplay.

1.2 Recipe Cards

The game will randomly generate recipes the player has to prepare. While the offered tiles and spawn placements of the ingredients can be selected by the Twitch Chat via polls, this does not account for recipes. To represent these orders the prototype includes cards with recipes featuring two to three ingredients which can be either a tomato, a potato, a cucumber, an onion, a cauliflower or a pumpkin. If these vegetables in combination really result in a tasty dish is currently not ensured but for our prototype containing common household vegetables it suffices for now.

1.3 Toy Money

Simple toy money is used to account for finished orders. If a basic recipe with two ingredients is completed, the player receives one currency unit as score (in this case 20 Monopoly^{TM} DM). If a larger recipe with three ingredients is completed, the player receives two currency units (in this case 40 Monopoly^{TM} DM) accordingly.

1.4 Twitch Chat

Twitch chat is emulated by randomly drawing ingredients, spawn positions and coveyor belt tiles out of three seperate bags. In the actual game, these will be decided via chat-polls. Every time iteration we draw a new tile, and every two time iterations, we will draw a new ingredient and position.

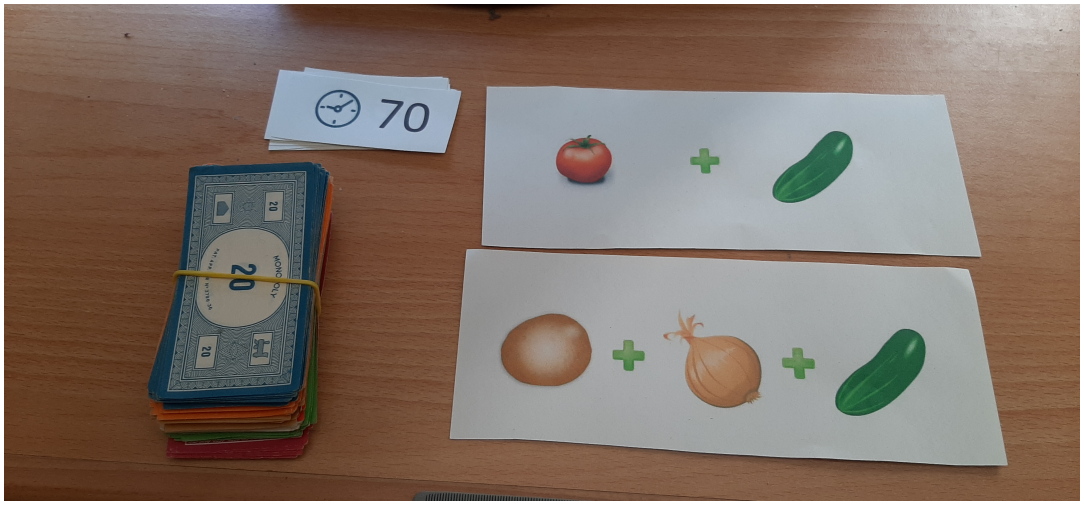

Figure 1: Prototype parts resembling the game manager equivalent with score (toy money), timer (time stamps) and dish order generator (recipe cards)

1.5 The Board

The prototype of our board - the part of the game which can be influenced by the player - was designed to be large enough, so that real vegetables could be used. The stars are: tomatoes, potatoes, onions, pumpkin, cauliflower and cucumbers. After the presentation, every eadible part of this setup will be converted to a delicious meal outside the game area and eaten. Conveyor belts are painted on both sides, one with a straight line, the other with a curve, which allows representation of every possible basic tile in our game. Spawn points and the goal are represented with kitchen utensils - plates and cooking pots respectively. In our simplified setup, the player is allowed to make only a single move and swap a chosen conveyor belt tile on the board with another spare tile in one iteration. In our final game the player will not have such limitations as everything will happen in real-time.

2 Experiences

The prototype was a helpful tool to bring our game closer to reality. By playing the prototype in real time we could experience the game from the player's point of view and quickly see the fun and challenges it will hopefully offer. Throughout the gameplay, we were often hit by unplanned and arbitrary choices made by the Twitch chat, which created a great sense of competition between the player and Twitch-Chat. Each time we could swap in a proper tile and find the right way, it felt like we had outsmarted the Twitch-chat, which was quite satisfying. At the same time, we could see from the other point of view, how amusing it must be to see the player struggling with the decisions they made. As the board started filling with more ingredients, we noticed that the difficulty also rapidly increased. This supports our aim to create a game where the player is

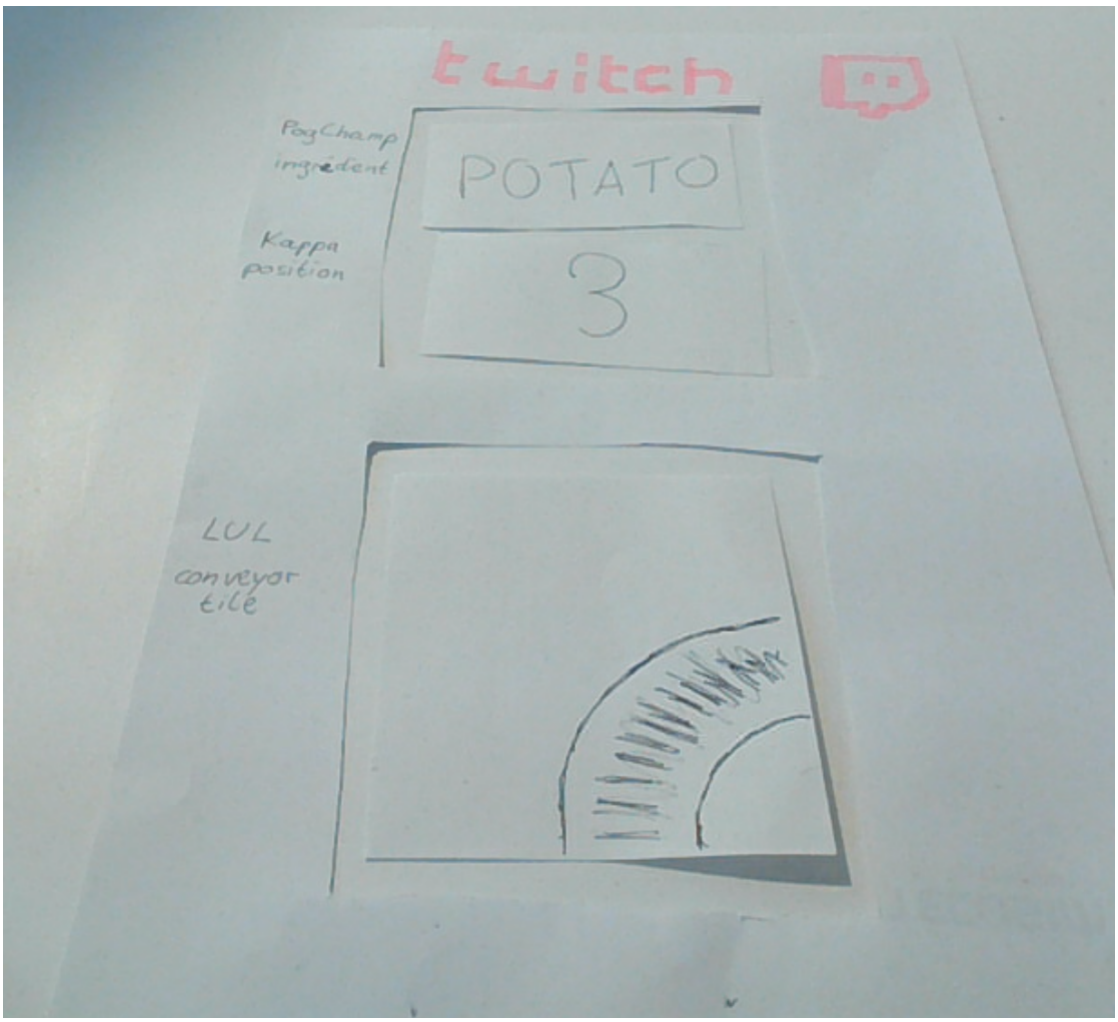

Figure 2: Paper twitch chat showing the poll results which were drawn randomly from bags.

Figure 3: Protytype of the 5x5 board (in front) including spare tiles set (on the rear), spawning points as plates (left) and the goal as cooking pot (right).

facing the continuously growing chaos. The more chaotic it was the more the sense of accomplishment upon completing a recipe. We felt that the game has a good balance between skill and difficulty creating high levels of engagement and cognitive flow.

One of the difficulties that were encountered during prototype testing was the fact that it is hard to replicate the feeling of haste we are going for in our game. The project is intended to be played with real-time interaction and constant time pressure with the player being required to finish incoming orders as quickly as possible. This is not so easy with a physical prototype where everything needs to be orderly executed to ensure that all rules are accounted for. Our prototype follows a strict iterative setup and there is no time aspect we can represent easily so this might cause the risk of the game appearing too easy, as there is a large enough thinking interval to e.g. swap tiles on the board and to come up with an optimal strategy.

Additionally, during our test play-through we ran into the problem that it would either take too long for vegetables to reach the desired destination or that too many ingredients would be on the board at the same time. This was resolved by decreasing the board to a 4x4-tile-matrix and allowing ingredient spawns only every two turns.

Moreover, during the first try with only one cooking pot and a single recipe, the simulated Twitch-chat immediately spawned a currently non-required vegetable. Thus, it was required to discuss, how to account for these cases so the player is able to apply a strategy to use these non-required ingredients and eventually hold them back for future food orders or throw them away by guiding them off the board.

In the end, what also caught our eye was the case when multiple ingredients on our board end up at the same position. In this case it was decided to apply a FIFO-strategy for presentation purposes with the iterative approach.

3 Revisions

The following revisions were decided on after finishing the test play-through of the prototype:

3.1 Multiple Recipes and Cooking Pots

To keep the game challenging and engaging and to add more strategic elements it was decided to not only offer a single dish order, but to instead offer multiple orders the player can decide to finish at a selected cooking pod on the board.

3.2 Adjusted spawn speeds

From the results of the prototype test it was decided to adjust the poll/spawning of ingredients in relation to boards tiles in a way, that new tiles are significantly quicker added to the tile bar than ingredients are spawned on the board. This needs to be accounted for in the polls for the Twitch Chat.

3.3 Time Limit

The time limit needs to be long enough to offer enough time to finish at least a certain amount of orders in average. The direct amount of given time could not be directly determined from the prototype since it was played in turns but it is an important thing to consider nonetheless.