MicroWar

Prototype Chapter

Team 4

David Niggli, Marcel Lüdi, Gaetano Paganini, Jonas Krucher

1. Introduction

In the last few weeks we have achieved to complete some parts of the desirable target and are working partial in the high target.

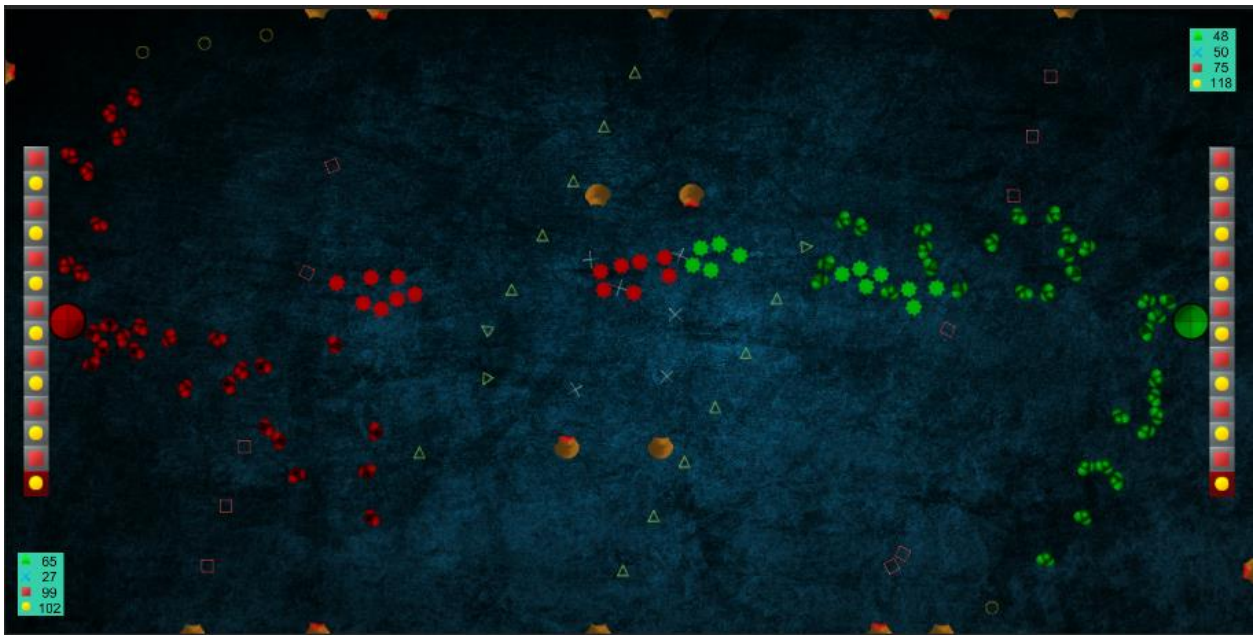

Figure 1: The game from 30.03.2015.

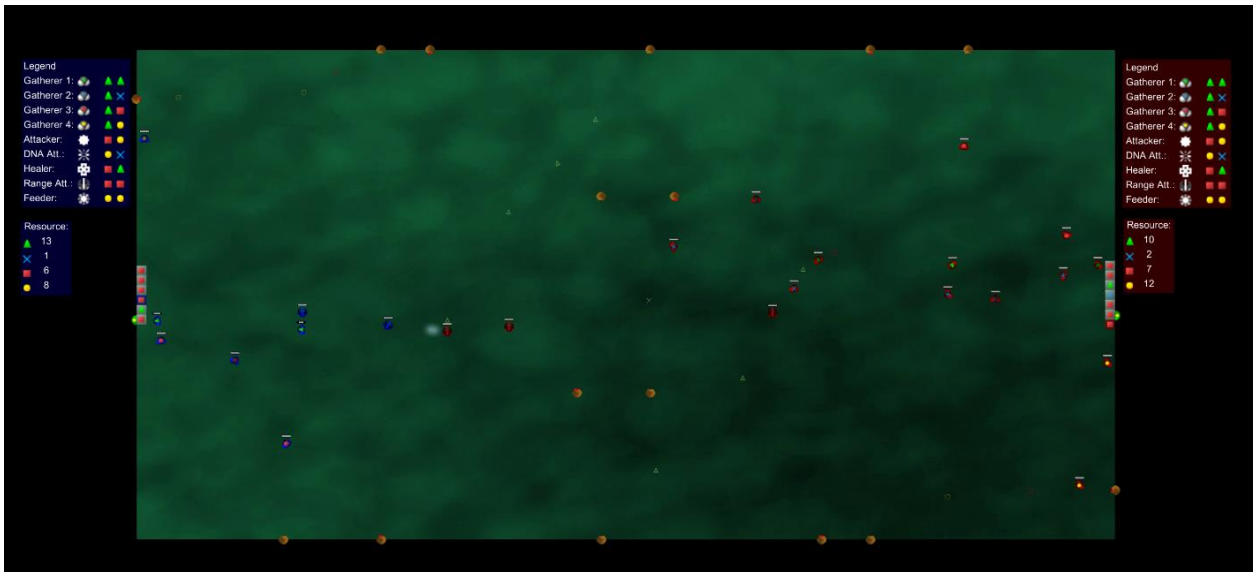

Figure 2: The game from 13.04.2015.

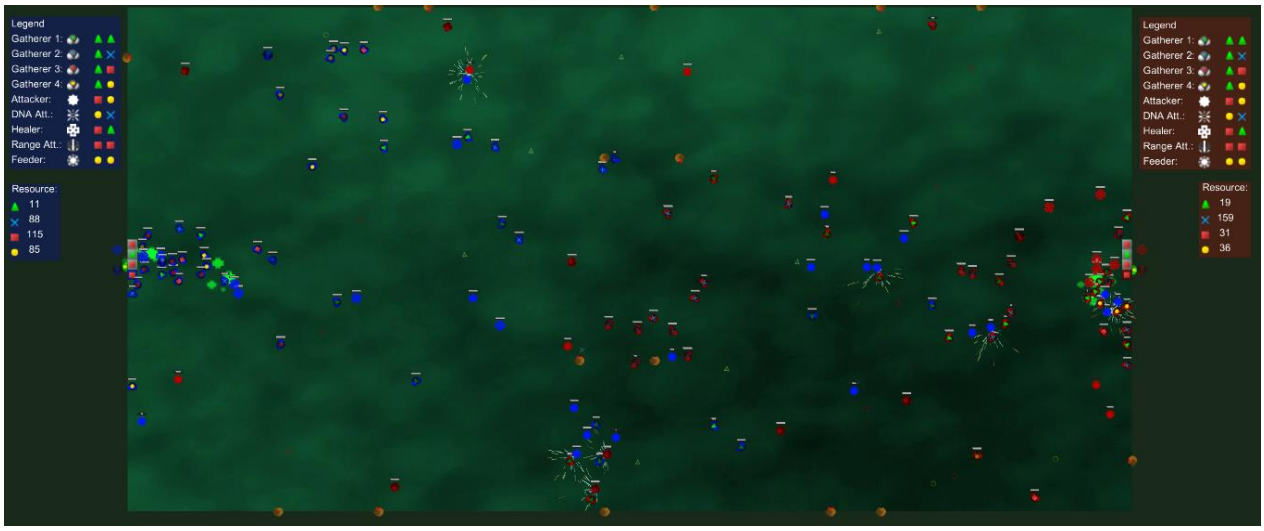

Figure 3: The game from 20.04.2015.

2. Current situation

For the description of our current situation we have listed our current development schedule (see below).

Legend:
achieved, in progress, kicked, new features

Functional minimum:

- 2D rectangular map
- one limited resource type on the map
- two types of proteins, a gatherer and an attacker
- a limited number of AI attacker proteins on the map
- switch button to toggle between the two types of proteins
- periodical generation of the selected protein
- naive algorithm that determines protein behavior (walk towards closest resource, when reached it is gathered; walk toward closest enemy entity, when reached it is killed)
- the player wins when all resources have been gathered
- the player loses if the AI destroys his DNA
- implemented for an easy win: a winning strategy is to make attacker proteins first, which kill and get killed by AI units, then to creates gatherer proteins to gather the resources. A losing strategy is to generate gatherer proteins first, which get killed by the AI, which then also attacked the DNA sequence itself.

Low target:

- multiplayer (2 players)
- four respawning resource types on the map
- a fixed size DNA sequence which can be modified by the player (costing the gathered resources)
- better algorithm that determines protein behavior (walk towards closest resource, bring it back to the DNA. If the unit is killed while bringing it back, the resource is lost; walk toward closest enemy entity, attack it)
- the player wins when the enemy DNA is destroyed
- the player loses if his own DNA gets destroyed

Desirable target:

- extendable DNA sequence (costs a bit more/or other resource)
- some lifepoint system (protein lifetime)
- some more units: DNA-attacker vs protein-attacker; ranged attack protein; per resource type gatherer; area damage, healer etc
- resources flow through the map along some paths
- sound (+ fun sounds)
- obstacles on the map (and more)
- procedural maps
- single DNA slots are destructible
- resource display

High target:

- 3D rendering (still 2D game logic)
- DNA translation “scanning” animation
- even more units / building-like units, e.g. resource producing units: produce resources which have to be gathered or directly add to resource pool of player or delivery point for gatherers
- resource: fluid simulation
- more modularity for units (proteins)

Extras:

- more than 2 players
- players have cells instead of just one DNA. Those can split and multiply
- the DNA creates viruses that can dock on the enemies cells but not on their own
- animations like attacking proteins devouring enemies like macrophages, e.g. particle explosions
- fog of war
- multiplayer different screens, split screen
- AI enemy, which changes DNA (with free camera)
- single player with waves
- finite resources

- DNA movement

Some details to changes and achievements

New units:

Area Attacker
It causes damage to an area and each unit in it receives damage.

Ranged unit
Shoots out bullets, which deal damage to enemy units, if they get hit by it. Bullets have a relatively short lifetime, before they are destroyed.

Healer
Goes to the nearest friendly unit and heals it for some amount.

New map configuration:

Lifepoints
The units have now a graphic lifepoint representation.

Sounds
We are working on a sound backdrop for the game.

Resource flow
The resources flow along a path through the map. This flow is produced in a grid, in which at some places a distinct force affects the resources.

Resource display and unit legend
It shows the player the resource stock and the resource costs for the different units.

Reading out DNA cell per cell
A reader now moves along the DNA, spawning a unit if it read a specific sequence and if the player has the necessary resources.

AI update:

Better path finding

The AI has a better path finding algorithm: instead of going directly towards the target, the closest possible interception location is computed based on the velocity of the target and the own speed.

Control:

Control through xbox controllers

Xbox controllers are now used to get input from the players. The design with the four colored buttons matches the four different resources available in the game, which eases up the gameplay for users.

general Fixes:

Bug fixes

Many bugs were fixed, which were detected in playtesting. For example several crash problems when the DNA would get destroyed (or multiple DNA slots at once).