Evolution Party

In a world that works against you, how long can you survive with a group of friends? Work together, evolve together and stay alive just a little bit longer.

1. Game Description

1.1 Story

The world has always been changing. But recently it started to change at an increasing speed. What was once a peaceful dimension, is now haunted by massive catastrophes. Survival alone is not possible anymore. You and your friends are destined to carry the seed of life into further generations. Are you prepared?

1.2 Overview and scene description

A group of animals tries to survive together in an ever changing world. Four players are situated on a screen and cannot leave it. New hindrances, dangers, and quests appear all the time. The player have to cooperate to survive. The game is time-based and the longer the group survives the higher will be their high score. To emphasise the cooperation, losing one member of the group will end the game. It is up to the players to survive the different catastrophes by cooperating. The scene is evolving over time with dangerous catastrophes devastating the environment in regular intervals.
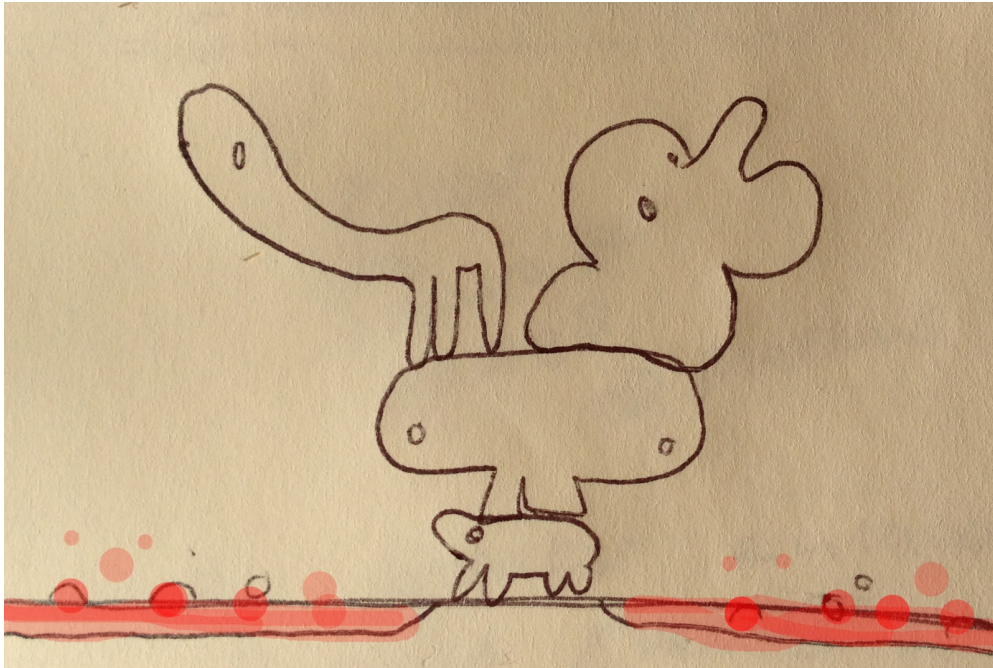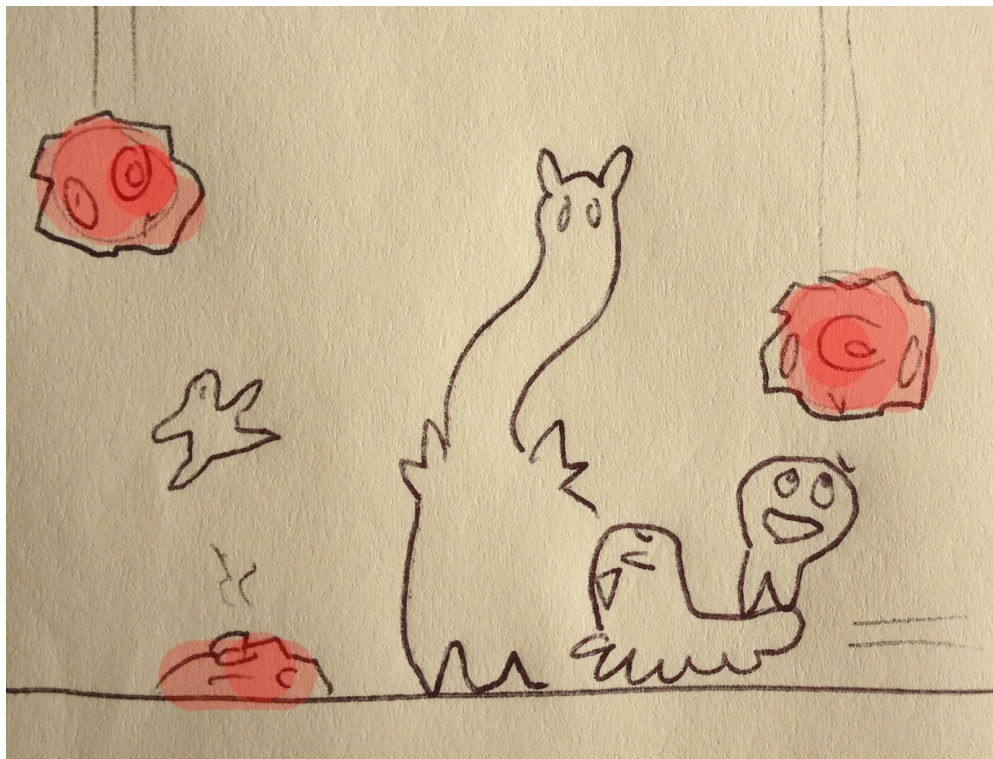
1.3 Big idea bullseye
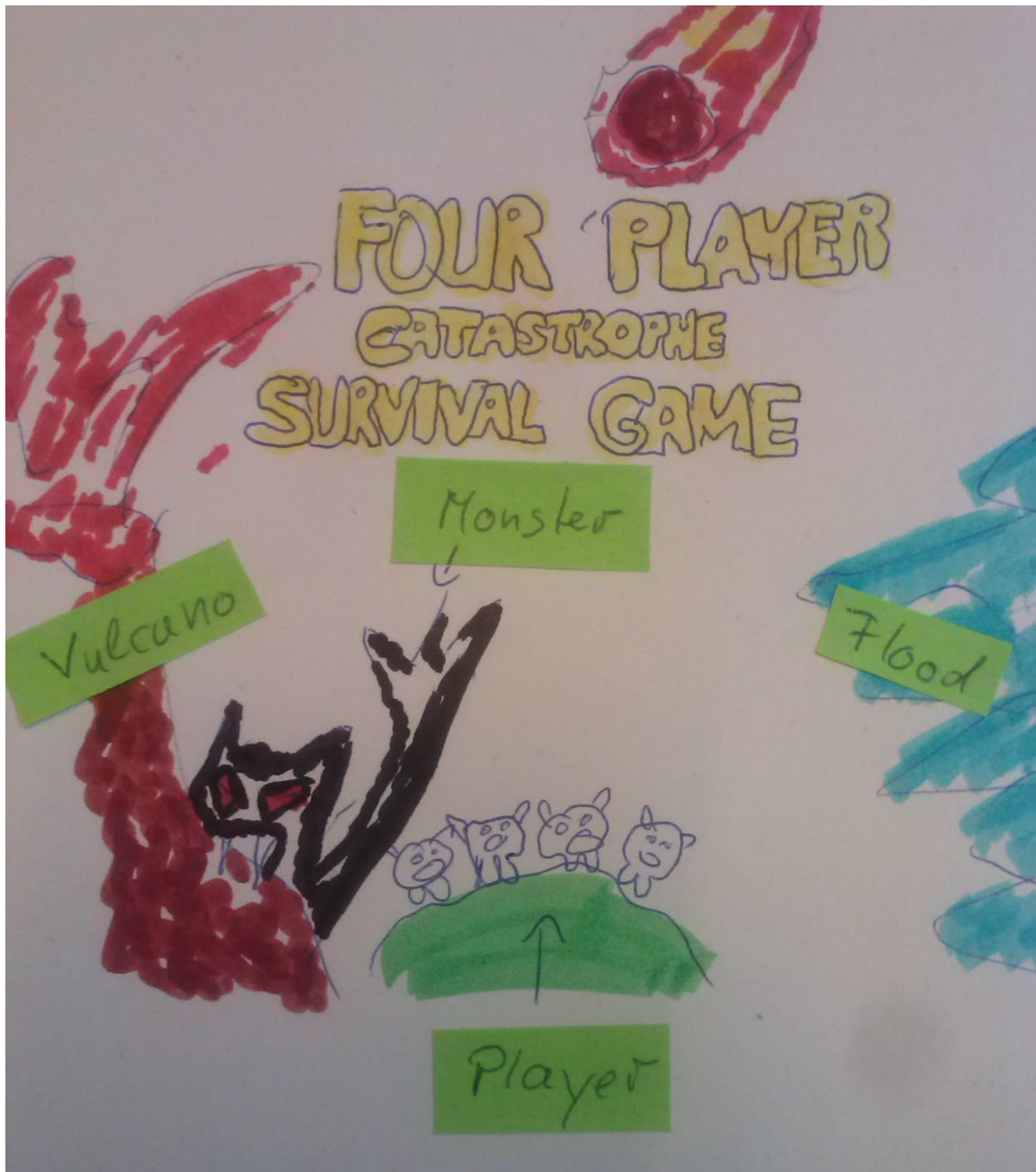
Four player catastrophe survival game
Plausible physics interaction & evolution of characters and environment

1.4 Sketches

Four players try to evade lava by stacking

Players dodge a meteorite shower

1.5 Game mechanics and player action

Environment

A 2.5D canvas with fixed limits to all sides is the basic environment of the game. Interactive object appear and disappear over the course of time. Typical object include platforms to jump on and dangerous objects such as lava. Additionally save zone objects exist that can be interacted with to survive a catastrophe.

The environment evolves in cycles having a typical graphical style accompanied with each catastrophe. For example during the volcano explosion lava will flow into the screen and the ground will change color to look burned.

Player

Each player has an animal character assigned. The characters move in jump-and-run style and have special abilities available. The characters move physically (i.e. interact when touching another) and the players can interact to evade catastrophes. Additionally the player will have to coordinate vocally adding a social dimension to the game.

Animals

The animals slowly evolve based on player performance, action and possibly random mutations. The changes will enable the player to use new special abilities that can simplify survival for the group. For example they may grow large, grow additional limbs, grow fur or become sticky.

Catastrophes

Catastrophes will haunt the players in predictable cycles. The cycles can be separated into 4 phases

1. Calm Phase: The players have time to organize themselves and potentially upgrade their animals

2. Environment Phase: The environment changes (new platforms appear, the graphic style changes)

3. Danger Phase: The first stages of the catastrophe appear, but should not pose to many dangers (learning phase, becomes shorter over time)
4. Catastrophic Phase: The catastrophe reaches the most intensive phase and players have to work very well together

The phases repeat indefinitely until the players loose. The upcoming catastrophes are chosen randomly.

The following catastrophes can occur:

Catastrophe	Effect	Player action
Flood	Water rises	stay above the water and don't get carried away
Blizzard	Nature freezes	Animals need to cuddle
Meteors	Meteors fall from the sky	Evade Meteors
Volcano	Lava streams into the screen	Don't touch the lava
Night	Black screen with little to no sight	Escape flying animals that want to take player away
Carnivores	Monsters come to eat the player	Scare the monster or hide
Odyssey	The environment moves to the right	players need to stay on screen or die
Fire	All nature burns	Hide in the water, escape fire
Drought	All nature dies	Find water and shadow
Overpopulation	Player character are copied and attack	Defend yourself by hitting the clones

2. Technical Achievement

2.1 Procedural Animals

The animals will be generated procedurally using something similar to a L-system. Other (play-)time the L-system will be used to evolve the animals exterior adapting it visually.

2.2 Physical System

Since the player tries to survive against catastrophes which occur in real life and therefore has certain expectations about their procedure, believable physics not only of the environment but also between players is key. Hence good collision detection between deformable rigid bodies is a necessity.
 For a good result in fluid rendering, we decided to implement a 2D particle system.

3. Development Schedule

3.1 Targets

3.1.1. Functional minimum
- Single Player
- One playable avatar
- Basic player controls (jump / move)
- Basic Rigid Body Physics
- Simple Collision Detection
- Simple catastrophe scenario
    - Meteorite (RB) falling from the sky

3.1.2. Low target
- Multiplayer
- Player characters evolve
- Particle System
- 2 More catastrophe scenarios (particle based), for example:
    - Blizzard

- ○ Flood
- ○ Lava

3.1.3. Desirable target

- ● Multiple start avatars to choose from
- ● Every start avatar has a different special ability
- ● Every start avatars has different evolution possibilities
- ● Add 2 more catastrophe scenarios, for example:
  - ○ Odyssey
  - ○ Overpopulation

3.1.4. High target

- ● More catastrophe scenarios
- ● Random avatar generation
- ● Evolution of animal is decided by player game style
- ● Add more player interactions, for example:
  - ○ punch
  - ○ climb
  - ○ grab

3.1.5. Extras

- ● Additional Game Modes (2 vs. 2)
- ● Manually configurable animals

3.2 Schedule

Following short notations are used: A - All, J - Jascha, R - Renzo, P -Philo, I - Isa

3.2.1 Public schedule overview

Events set by the class schedule

Goal	W 1	W 2	W 3	W 4	W 5	W 6	W 7	W 8	W 9	W 10	W 11	W 12	W 13	W 14
Choose game idea	A													
Draft proposal		A												
Prototype			A	A	A									
First Demo						A	A							
Interim Demo								A	A					
Alpha Demo										A	A			
Playtest												A		
Presentation													A	A

3.2.2 Game Jams
To improve the interaction during the development we will meet for Game Jam Weekends. Tentatively, we plan to jam three times.

The first jam is set for the 4th and 5th of April 2015.

The second jam is set for the 18th and 19th of April 2015.

The third jam is set for the 9th and 10th of Mai 2015.

4. Assessment

"Not all party games are competitive, and some offer you the chance to work with your friends, rather than against them. Either way, getting together with a group of close friends and having a video game night is one of the best times you can have."
http://www.makeuseof.com/tag/the-4-best-party-games-on-modern-video-game-consoles/

We totally agree with this statement. Instead of fighting against each other, we want to emphasize on working, talking and planning together to succeed as a group.
Our decision to keep the game in a comic style helps to reach players of all age.
Adding procedural animal evolution based on the playstyle and believable physical computations helps to associate with the scenario and the chosen animal.
Keeping controls simple also makes it easy to beginners and casual gamers to play the game. However, since the next scenario is chosen randomly and doesn't proceed in the same way every time you come across a certain scenario, players have to decide and come up with a solution every time anew. This makes sure the game doesn't lose its challenge and fun.