Starving Worms, Crawling to Victory : Rough Proposal

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1. Game Description

1.1 Background story

On a planet far far away, where worms are the rulers and mankind never existed, two worm clans, the Cheroms and the Apploms, were living peacefully on separate parts of the planet.
The worms enjoyed their lives and spent most of the day producing and harvesting their favourite fruit (Apple for the Apploms and cherry for the Cheroms). The giant fruit trees had grown much bigger than the normal trees and the worms made sure that they were planted in an efficient grid structure. The two worm tribes were also real masters at changing the land with great efficiency, and this allowed them to optimize their fruit production to the maximum. They could easily change a forest of small trees into a lake or any other kind of landscape in almost no time.
In the spring of 2014 AD (“After Drought”, the worms were measuring the years starting from the last terrible global drought.) on the planet Wormito, a huge storm of radiation completely disturbed the season cycle of the planet. The seasons started to change rapidly and unpredictably. The giant fruit trees became sick and most of them died so only the giant tree trunks were left on the planet. The worm tribes were struggling to find enough food and hunger was becoming a daily preoccupation for the worms. To restore a normal season balance, the worm scientists started to search for a way to control the seasons using radiations. The first results were promising and the first season changes were made, but the technology was not very safe yet.
Soon, the only cherry left on the planet was controlled by the apple-eating Apploms and the only apple left was controlled by the cherry-eating Cheroms. Both clans managed to mutate the fruits in a way that they were continuously growing bigger so that they provided enough food for the worms. But whatever they tried, it was not possible to spread the fruit to grow new fresh trees.
After a while the Apploms couldn’t resist any longer. They had enough from eating the (in their opinion disgusting) cherry. They longed for the delicious apple. Same for the Cherroms. They wanted their beloved cherry back.
Because worms don’t know how to speak and since they have no hands to gesture, the only logical consequence was to start a ruthless war to steal their favourite fruit.

It is now time for you to take control over a worm clan and help them crawling to the other fruit before the enemy clan steals yours. Use your energy wisely to change the seasons and the terrain to achieve your goal! The winner will be able to control the whole planet, while starvation or enslavement will be the penalty for the loser.

1.2 Overview and scene description

The game map is divided in two parts, which are influenced by different seasons. The player can change the season of both part of the map. Changing the season affects the terrain so that certain paths become walkable for the worms while others might become inaccessible.
The map itself contains a grid structure. The terrain of the cells of that grid can be changed by the player to block the opponent's worms or to free the way for the player's own worm forces.
The two opposing worm clans, one in the north and one in the south, start to send out worms to the otherside. The attacking worms, that spawn automatically, are looking for the nearest path to the flag, which the player can place anywhere on the map to control the worm's path.
Once a season changes the worms might get blocked or killed on their way. (for example if the worms are on a lake when suddenly the winter changes to summer) If they get blocked on their path, they automatically look for a new optimal path to the flag.

1.3 Game mechanics and player action

The principle game mechanic is to change the territories and the seasons of the map . To win the game the player has to get the opponent's fruit with his or her own worms before the opponent does it. The areas which can be changed might be restricted. To change an area the resource, radiation, is required. Also a change of the season costs radiation.

Controls:

- Map view control:
  The player can change the viewport position by swiping over the touchscreen.
- Unit control:
  The player cannot interact with units directly, but he can set a flag on the map and this worms will try to reach it by a shortest path.
- Land change control:
  The player is able to change areas and boundaries of areas by selecting them. A list of available landscapes will pop up. If a landscape is selected the mesh of the tiled map will get highlighted to assist the player.
- Season Change:
  The player can change the season of its own territory or the opponent's at the cost of radiation energy.

2. Game Design

2.1 Big idea bullseye

2.2 Game Elements

Map
The map contains various areas in a grid structure which can have different properties in each season. Furthermore the map contains the two fruits, the starting positions of the players.

Areas
Can be changed by the player for energy. Each type of area has different properties on each season, so that it is accessible or not. Possible area elements are listed in the following table.

	Spring	Summer	Fall	Winter

Lake	parts are still frozen at the start, at the end the lake is flooded.	fluid water, storm on lake causes vortex on/near the lake	fluid water	frozen, worms can walk over it
Mountain	lot of water from melting snow	possible to walk over it	rockfall because of frost	snow, not accessible
Forest	grows quickly and blocks worms	trees appearance change	trees die, path becomes walkable again	trees appearance change
Marsh	looks like grass but the worms will drown in it	the density of the marsh is bigger, so some worms can walk over it.	visible that it is marsh but the worms can not walk over it	frozen, worms can walk over it
Desert	no effect	too hot, worms take damage while traversing	no effect	no effect
River	lot of water in it from the snow of the winter, no crossing possible	less water, so at some places it is possible to cross, (exception if lot of rain)	less water, so at some places it is possible to cross, (exception if lot of rain)	frozen, the worms can cross the river
Grain field	the grain is growing, may some worms get gored.	not possible to pass the grain filed, it is too dense	the grain field is decayed the worms can cross it	frozen so no problem to pass
Hedge	the hedge is growing, the worms might get killed while passing it	the hedge is too dense so it is not possible to pass	the hedge is decayed, the worms can cross it.	frozen, possible to pass
Volcano	not season			

	dependent, but some random events may happen. E.g. explosion, smoke			
Carnivorous plants		eat worms		
Bird swarm	returns from the south, eats worms		fly to the south, eats worms	

Seasons
Both parts (north and south) of the map have their own season. They change over time in normal order (winter->spring->summer->fall), but can also be changed immediately to any season by the players at a certain cost.

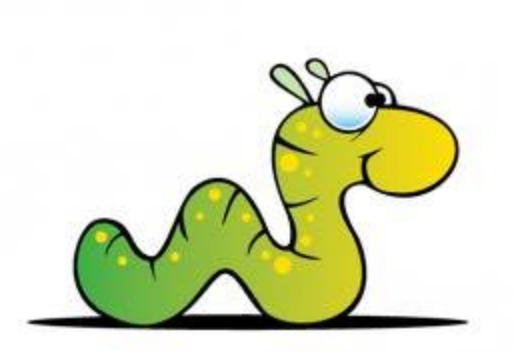
Worms
Worms spawn at a constant rate near the player's fruit. They immediately look for the shortest path to the flag.

Flag
The flag can be set by the player to any place in the map. The worms then try to reach it.

End of the game
A player wins the game when enough of his worms have reached the fruit of the other tribe. A short animated sequence shows how the worms carry the fruit away.

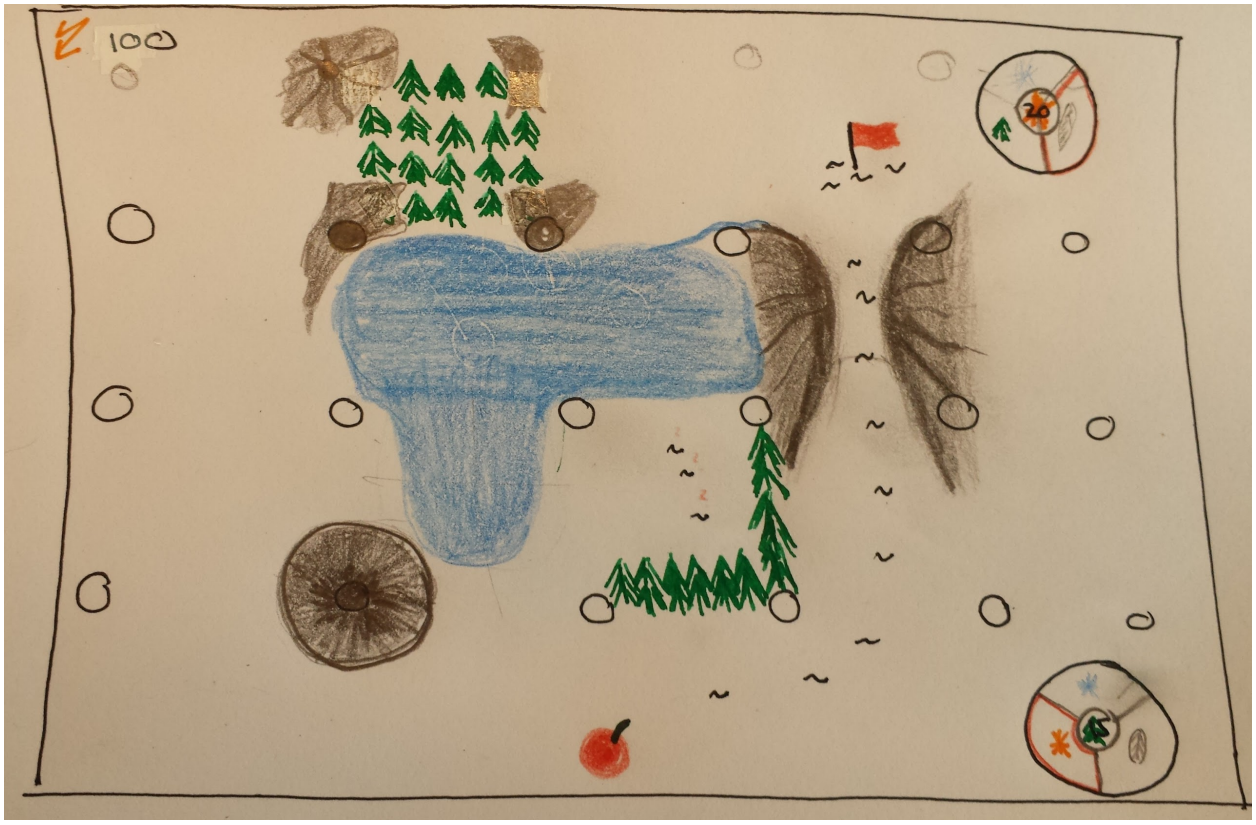
2.3 Sketches

Comic Styled Worm



The worms should be comic styled and funny looking. Maybe they should have a more serious face since they are heading forward to the hostile worm clan to steal their fruit.

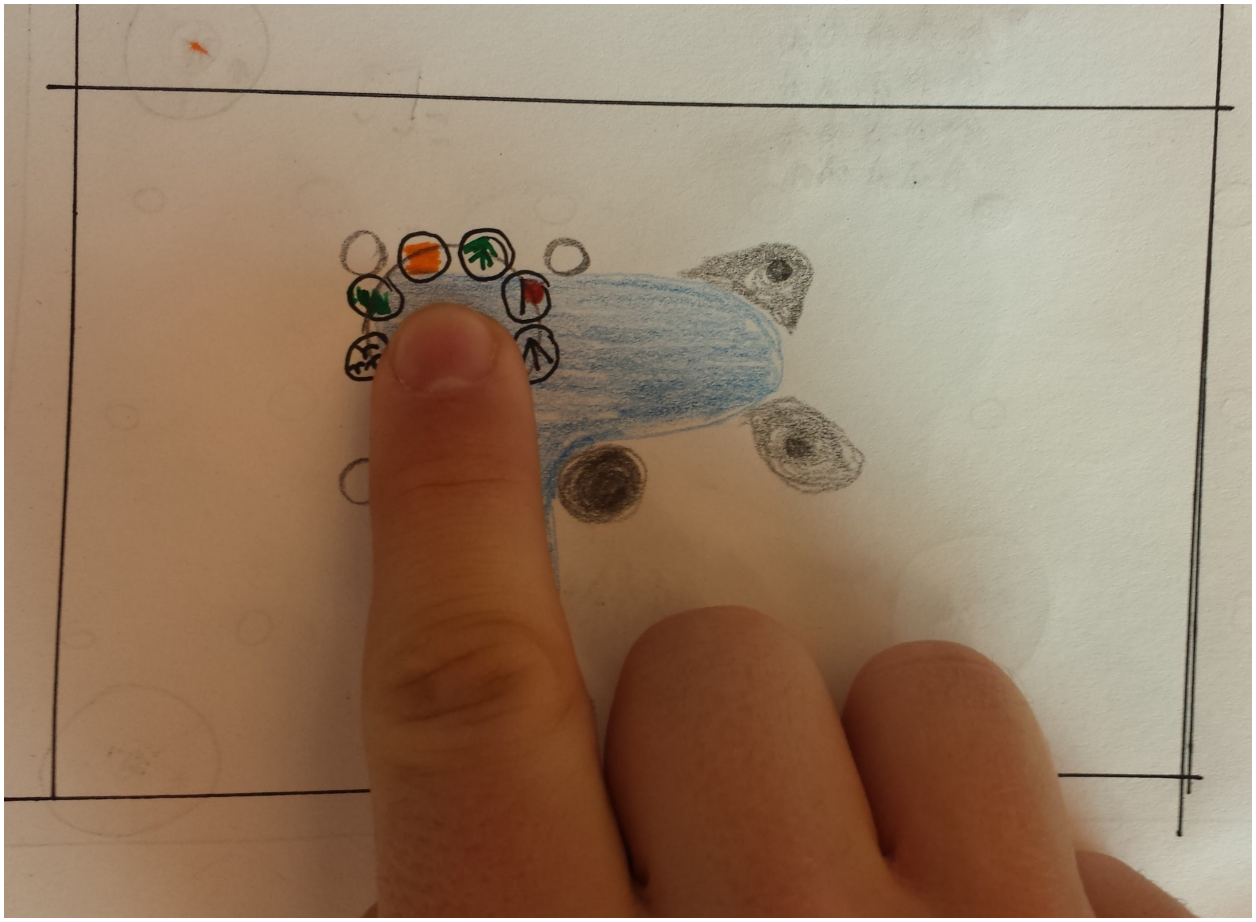
Game with User Interface



The worms are walking over the mountain pass to the flag. Because of the trees the can not take the shorter direct path. The small circles are the big trees that divide the terrain in the grid structure. On the bottom right the season of the player is displayed in the middle of the circle. The next season is framed in red color. The season on the other part of the map is displayed on

the top right. The current energy (100) is shown in the left upper corner.

Build Menu



If the player intends to change a terrain all the possible terrain types are shown around the touchpoint.

3. Technical Achievement

Our technical achievement will be a smart artificial intelligence (AI) that acts as a worthy opponent for the human player. The difficulty for the AI lies in analysing the terrain and finding the most efficient spots to change. An intelligent path finding system is required for the worms to reach their target through the changing terrain. Furthermore the AI should understand the effect of changing the seasons on the current game situation to take advantage of it. Of course, the AI should be challenging but not unbeatable or weak.
Also the additional (high-target) dynamic generation of random maps will be a challenge, since the terrain should still stick up to certain restrictions to ensure playability.

4. Layered Requirements

Functional minimum :
- one simple map (with grid structure)
- one fruit (cherry)
- worm spawning and walking (shortest path) to the opponent's fruit
- terrain elements: forests (that react to the seasons), mountains
- primitive graphics
- player interface (information display: seasons, energy)
- ability to change the seasons

Low target :
- simple animations
- singleplayer (primitive AI)
- ability to switch the terrain of the sections
- more terrain elements: water, mountain paths
- game menu

Desirable target :
- two worm clans
- advanced graphics
- advanced AI
- small tutorial
- good game balance
- game presentation video

High target :

- multiplayer
- additional maps
- very good game balance
- intuitive user interface
- map generator
- ingame intro (video)

Extras:

- worms fight each other
- worms evolving
- event at each season start
- interactive tutorial
- campaign
- dynamic weather system
- chat system
- many terrain elements
- towers
- extra terrain elements, extra worm types
- fog of war

5. Development schedule

Rough schedule

Week	Task
1	First ideas
2	Brainstorming, decide for rough concept
3	Rough proposal
4	Proposal
5	Physical Prototype / First balance
6	First design: landscape / worms
7	Map design / Primitive AI
8	Change the seasons / Effect of the change
9	Path selection / Graphics / AI / Balance
10	Tutorial / Multiplayer / Advanced graphics / User interface
11	Alpha release: Glue everything together
12	Playtest and tweeking
13	Playtest presentation, final report
14	Final public presentation

Detailed tasks (tentative)

Week	**Task**	**Assigned to**	Hrs
5	one simple map and fruit	Adrien	15
5/6	worm spawning and walking (shortest path) to the opponent's fruit	Cléa	10
5	terrain elements: forests (that react to the seasons), mountains	Jan	5
5	primitive graphics	Nicolas	20
6	player interface (information display: seasons, energy)	Nicoals	15
6	ability to change the seasons	Adrien	5
6	simple animations	Jan	15
7/8	singleplayer (primitive AI)	Nicolas	20
7	ability to switch the terrain of the sections	Clea	5
7	more terrain elements: water, mountain paths	Adrien	5
7	game menu	Jan	10
8	two worm clans	Adrien	10
8	advanced graphics	Clea	20
8	advanced AI	Jan	20
9	small tutorial	Adrien	10
9	good game balance	Jan	20
9	Multiplayer	Clea	15
9	Additional maps	Nicolas	5
10	improving game balance	Jan	10
10	UserInterface	Adrien	20

10	map generator	Nicolas	30
11	better tutorial	Adrien	10
12-13	debug, polish, reserve time	All	200
14	last changes	All	50

6. Assessment

The main strength of the game is the possibility to change the seasons and the terrain. This should offer a lot of strategic complexity to the players. They will not only have to think about what effect a season will have on the advancement of their own units but also on those of the opposing player. The seasons can be used in an aggressive way to support the own troops or defensively to slow down the hostile worm forces. The players have to compare the usefulness of changing a single terrain element to a season change. Furthermore it is not always clear what effect the change of the season has and how it will influence the walking paths of the worms. Eventually it should be enjoyable to “troll” the other player and raise the “trolled”-one’s hunger for revenge.

The game is intended to be played by everybody that owns a tablet. It is supposed to be easy to learn but hard to master. Like this, hardcore gamers will enjoy the game as much as casual gamers. The cute comic style of the starving worms game is supposed to attract people from every gender and every age.

We discussed the different goals in the group and we decided that we would be satisfied with our game when the core idea of the game, as explained in the game description, are correctly implemented. In addition the game should have a good enough balance so that there is no directly winning strategy. We will also try to tune the little details until the majority of our testers (including us) tells us that the game is fun to play. If those three points are fulfilled, we will consider our game a success.