

# Survival of the CARROT PEOPLE



## Game Proposal

## Game Description

### Introduction

The game “Survival of the CARROT PEOPLE” is a strategy game and applies some concepts of a tower defense game. One player plays against the computer. The player starts with a resource to protect and a basic tree. The enemy computer starts with a castle and is allowed to build units (predefined), but only the player is allowed to build towers by breaking off branches of his original tree. The ultimate goal is to destroy (or overgrow) the enemy castle before the enemy can destroy the player’s castle, see also figure 1.

### Game Type

The game type of the proposed game is a strategy game. More accurately, it is some kind of tower defense game with the goal to destroy the enemy by overgrowing his castle.

There are multiple levels with a different map each. When a level is beaten, the next level is unlocked.

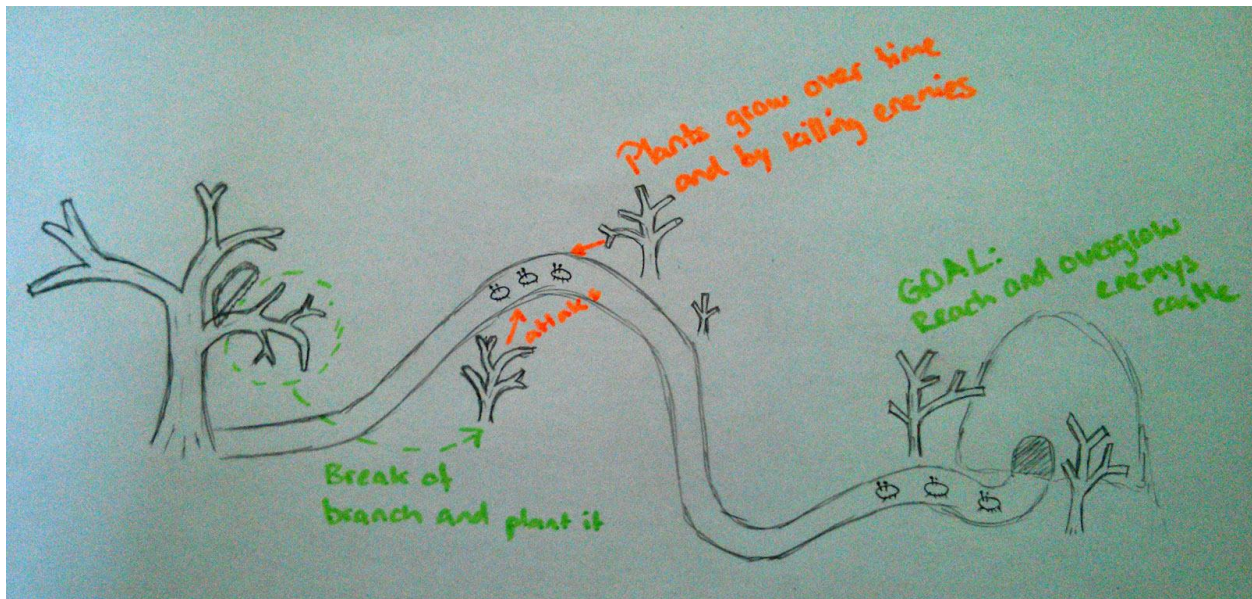


Figure 1: Overall gameplay of the game

### Story and relation to theme “The Seasons”

It all begins with a single old carrot, who starts telling the legends of the “Survival of the CARROT PEOPLE”. Unlike our civilization, the carrot people are way more advanced, and stories aren’t told by books or movies: They are “lived”. Therefore, the player takes the place of a pupil of the old man, and has to fight for survival of the carrot people.

He starts in Spring, and as he finishes the Spring level, he gains the special power of the spring (TBD, e.g. faster growth speed spell). Next, he has to beat Summer, Fall and finally Winter.

After this the carrot people are the masters of the seasons (on earth). However, as a bonus or as a sequel, one can imagine that the carrot people want to master the universe, and therefore have to fight on different planets with different seasons (e.g. a fantasy planet with the seasons: dwarf season, elf season, unicorn season, or a monster planet with the seasons zombie season, vampire season, witch season).

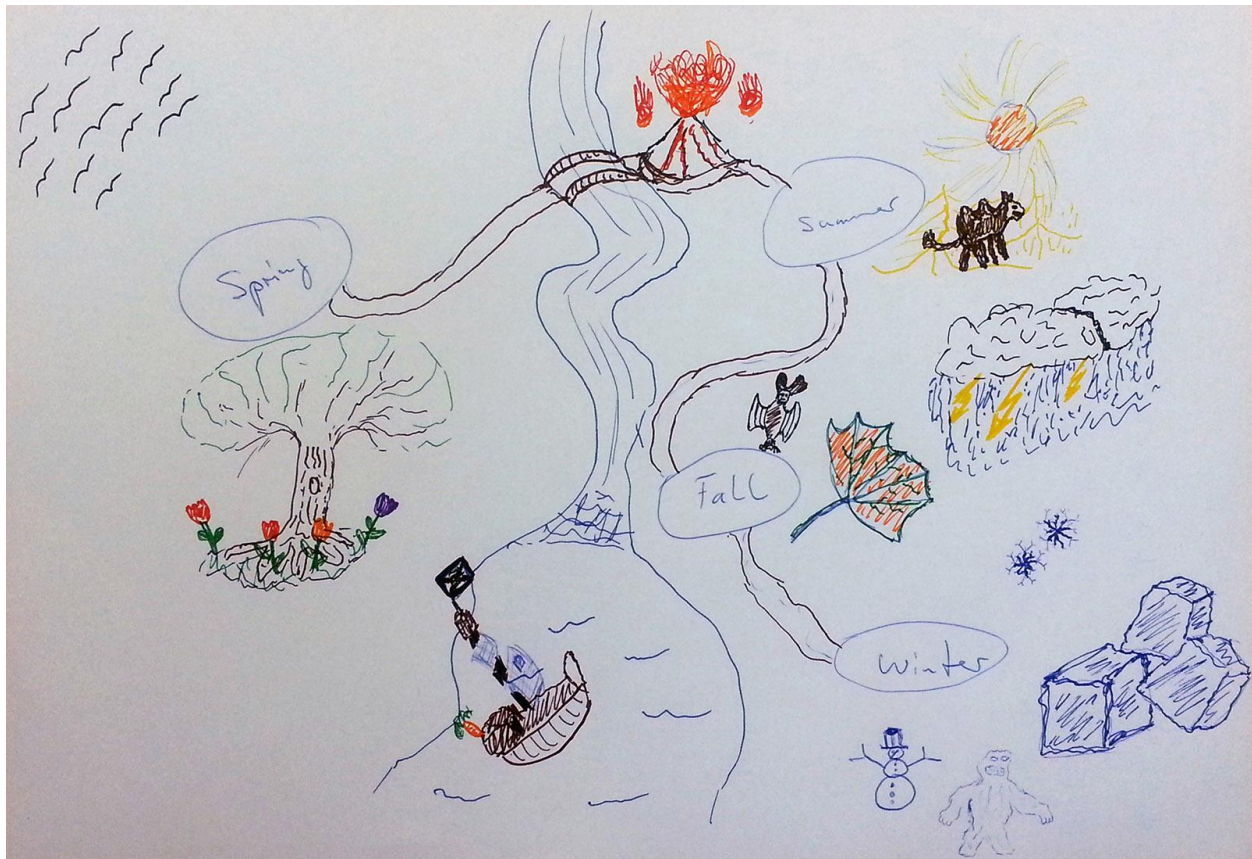


Figure 2: Map

## Technical Achievement

As a technical achievement we want to integrate some sort of a L-System into the gameplay and to look of our game. The L-System can be used to define different plants with a formal grammar, so they grow in a certain way.

To make the game visually more appealing, every tower should look different. Some sort of a L-System (see Figure 3: L-System), which can be used to define plants with a formal grammar, will implement this. The towers then grow individually, depending on how much enemies they kill. Therefore the player gets a visual feedback, for how effective each tower is.



Figure 3: L-System

## "Big Idea" Bullseye

As indicated on the front page our Big Idea and Technical Innovation are as followed:

<b>Big Idea:</b>	Survival	of	the	carrot	people
<b>Technical Innovation:</b>	Every tower grows uniquely				

## Challenges

**Difficulty/Challenge/Flow:** The most difficult challenge of the proposed game seems to find the balance between too easy (boring, unchallenging) and too hard (impossible to win). The player should be able to win the game in the first (if skilled and lucky), second (if everything goes ok) or at least the third attempt a level is played.

Possible solution: After losing two times in the same level, make the game easier (e.g. by decreasing the HP of the enemies).

**Risks/Tradeoffs:** It should be challenging to decide what action to take (be strong now vs. invest for being strong later).

### Alternative Ideas / Focus Areas

Instead of a tower defense game, one could imagine to focus only on growing plants. The ultimate goal would be to grow some rare plants, or to trade some grown plants for new seeds. One could still use the seasons as the scene, but there are different plants to be grown in every season (with increased difficulty).

Plants can be grown when one talks to the plant (say nice thing, or do cute / delightful noises). For attacking, the player must cheer for the plants.

## Development Schedule

### Task List

<b>Functional minimum</b>	Basic tower defense functionality: <ul style="list-style-type: none"> <li>● Tower placement</li> <li>● Tower attacks</li> <li>● Monster spawning</li> <li>● HUD</li> <li>● One playable level</li> <li>● One enemy monster</li> </ul>
<b>Low target</b>	<ul style="list-style-type: none"> <li>● Growing tower (technical, no L-System yet)</li> <li>● A tower can split a branch to grow a new tower (technical, no L-System yet, every split tower looks the same)</li> <li>● Winning condition: Enemy's Castle is overgrown by the towers / plants of the player (technical, no L-System yet)</li> </ul>
<b>Desired target</b>	<ul style="list-style-type: none"> <li>● Different towers/branches</li> <li>● Different monsters</li> <li>● Attack mode for towers</li> <li>● Winning condition: Enemy's Castle is overgrown by the towers / plants of the player (graphical, L-System)</li> <li>● Animated monsters and towers</li> <li>● Special tower skills (poison, slow-down, etc.)</li> <li>● Growing tower (graphical, L-System)</li> <li>● Splitting tower (graphical)</li> </ul>

<b>High target</b>	<ul style="list-style-type: none"> <li>● Boss monsters</li> <li>● More levels</li> <li>● Story elements</li> <li>● Special spells</li> <li>● Resource Mana (for the special spells)</li> <li>● Sounds</li> </ul>
<b>Extras</b>	<ul style="list-style-type: none"> <li>● Enemy can build units with AI / change the units automatically</li> <li>● Difficulty levels</li> <li>● Flying monsters</li> <li>● Digging monsters</li> <li>● Level designer</li> <li>● L-System editor (create your own towers)</li> <li>● Path can change during level</li> <li>● Units take different paths</li> <li>● Multiplayer: multiple player can defend their castles and attack the enemy together</li> <li>● Build special structures with the L-System according to a "prototype". E.g. build a bridge out of plants</li> <li>● Different game modes (e.g. time constraint, limited branching, limited towers, ....)</li> <li>● Some enemies can attack some plants</li> <li>● Enemies attack your towers and break of branches</li> <li>● Make time slower / faster, fast forward</li> <li>● Scoreboard</li> <li>● Online Scoreboard</li> <li>● Deploy to different platforms</li> <li>● Have different people (e.g. polar bear people, bug people, ...) who all have different plants, spells, special effects, properties (e.g. attack bonus)</li> <li>● Build traps</li> <li>● More special effects for growing, spells, ....</li> <li>● Video scene for storyline</li> <li>● Limited build radius for new plants</li> <li>● Heros who can attack enemies</li> <li>● Heros can be upgraded between the levels</li> <li>● Shrinking of plants (bad soil)</li> <li>● Use computer vision to automatically grow plants / generate L-System</li> <li>● Use computer vision for level designing</li> <li>● Use sensors for real plants. If the real plants are</li> </ul>

	<p>treated correctly (e.g. enough water, sunlight, right temperature, correct soil), then the plants in the game grow better (this would be a motivation to have a healthy garden, and to see when your plants need your care)</p> <ul style="list-style-type: none"><li>● Plugin system, so any developer can add some plugins / additional plants / additional units / additional levels and programmatically can change the game / gameplay</li><li>● Augmented reality</li><li>● MMORPG where people can grow against each other, and conquer soil so their plants grow better / faster</li><li>● Add multiple difficulty levels for each level, so each level can be played multiple times</li><li>● Add badges if levels are completed</li><li>● Add badges for some special events or statistics (e.g. when <math>2^{10}</math> enemies have been killed, or if every level has been beaten in hard mode)</li></ul>
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Table 1: Task list

## Timeline

	Hours	24.02	03.03	10.03	17.03	24.03	31.03	07.04	14.04	21.04	28.04	05.05	12.05	19.05	26.05
<b>Assignments</b>															
Project proposal draft	5		B												
Project proposal	5			B											
Prototype chapter	5				B										
Interim report chapter	6								B						
Alpha release chapter	5											B			
Playtest chapter	5													B	
Conclusion chapter	4														B
Demo video	6														B
<b>Presentations &amp; Demos</b>															
Pitch of game idea	4	B													
Formal game proposal	2				B										
Prototype	2				B										
First playable demo	2						B								
Interim demo	2								B						
Alpha release demo	2											B			
Playtest presentation	2													B	
Final public demonstration	2														B
<b>Functional Minimum</b>															
Spawning of monsters	6							L							
Placing of towers	4						I								
Tower attack	6							I							
Resource control	2						L								
Basic level design	2						I								
HUD	4						L								
<b>Low Target</b>															
Sounds	4								L						
Different towers	3								L						
Different monsters	3								L						
<b>Desired target</b>															
Growing towers	8									I					
Attack mode for towers	8											I			
Special tower skills	4									I					
Animated monsters	6									L					
Animated towers	6										L				
<b>High target</b>															
Boss monsters	2												L		
More levels	6													B	
Special spells	4												I		
Difficulty levels	2													L	
Story elements	6														B



## Assessment

The main strength of the game is that every time the game is played, the game looks different, because the plants grow differently every time. It also is natural not to have any currency, but to grow the towers / plants instead.

Because the game can be hectic, it should be played by rather skilled and young players from 12-35 (e.g. people who can play Super Mario Bros). Because there is not much time for thinking what the next move should be, timing is crucial to win the game. However, it should still be possible to win the game even if the player makes a mistake.

The player is able to perform the following actions:

- Tree growing
  - Decide what type of tree should be grown
  - Grow a new branch on an existing tree
  - Plant the new tree
- Upgrade a tree
  - Decide which upgrade should be grown
  - Grow a new branch on an existing tree
  - Use the branch to upgrade the current tree
- Combine branches
  - Grow different branches on a tree / multiple trees
  - Combine the branches
  - Grow a more powerful tree out of the combined branches
- Upgrade all trees
  - Sacrifice an existing tree
  - Upgrade all existing trees (and all trees that will be built): E.g. increase attack strength of all trees by 5%

The game is successful when people who play the game the first time (one of the following)

- Get surprised
- Get addicted, don't want to stop playing
- Download and install it on their mobile phones
- Play the game because they like the story
- Players are fascinated how their plants grow