

## **Design Document for:**

# **Spytegy**

The best strategy board game ever!

[Spytegy.com](http://Spytegy.com)

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**Written by Dream Team**

**Version # 4.0**

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# Design History

Our team build this game from scratch, for this a couple of the earlier version of game, we mainly focused on the completing rules and modify settings

## Version 1.0

Version 1.0 is the first version of our game, we decided to do the following changes

- New 2 player game board
- Player must eliminate all of his opponent's pieces to win.
- Each player has four different pieces General, Colonel, Captain, and Sapper.
- Each piece has special ability.

## Version 2.0

After our testing and discussion we felt the original gaming board is too simple and less interactive so we decided to do some change of it. Also we balance some pieces' ability.

- Add new items on the game board, players can pick up and use items by moving their pieces to the position of items.
- Players now can win the game by occupying the opponent's base.
- Nerf General: General's moving range -1
- Buff Sapper: Sapper can deal extra damage when he attacks buildings.

## Version 3.0

In version 3.0 we want to add more cool features in our team. Our team members were inspired from the spy movie, so we added the lurking feature. The pieces are all hidden himself at the beginning of the game. Opponent can only see the pieces position on the board, but don't know what piece it is. There is also a new mechanism for players to review the hidden pieces.

- Add lurking feature: Players' pieces are hidden from his opponent at the beginning of the game, he can move the piece face down so that opponent needs to guess what the piece is.
- Pieces will need to be reviewed when it attacks another piece or build, using its special ability, or is attacked by Sapper.
- Pieces can return to lurking status when it is in the base.

# Game Overview

## Philosophy

### How to play it.

This game is a strategy board game. Our team wants to simulate a military competition between two squads. In this game, 2 players will each control a squad. A squad will be made up by four different soldiers General, Colonel, Captain, and Sapper. Every soldier will have a different ability and attack method. Players need to control his or her own team to win the game by either eliminating all of the opponent's pieces, or occupy the opponent's base by placing the piece into the opponent's base.

### Game platform

Our game can run on computers as well as mobile devices. Since this game is a board game, it doesn't require high-end hardware. Players can play this game on their personal PC, or on their phone. We hope players can enjoy this game everywhere.

### Our motivation

Our team members enjoy playing Aeroplane Chess. However we think this game is less stargy but heavily depends on luck. Therefore we want to create our own version of the advanced Aeroplane Chess. We want the new game to be fun to play, but players will not lose because of bad luck.

## Common Questions

### What is the game?

This game is a two player board game, each player will control one team with four pieces. Players need to control their own pieces to move and attack on the board. Players' goal is to eliminate all of the enemies or occupied opponent's base.

### Why create this game?

Our group members are all boardgame geeks. We love to play boardgames. After playing a variety of the board game, we want to create our own game. Also, all of us are CS majors, so we want it to be an electronic game as well.

### Where does the game take place?

Our game is for the players who love to play strategy board games. Also, because the game's rule is very simple, children can learn it easily, this game is also a good family game. Parents can play with their children. After becoming familiar with the game, players can download the game on their mobile device or PC, so that they can enjoy the game everywhere.

### What do I control?

Players will control her or his own team to fight with the opponent's team. Players need to use their strategy and skill to find the optimal solution to move pieces and respond to the opponent's moving.

### How many characters do I control?

Each player will control a team with 4 pieces. Pieces are General, Colonel, Captain, and Sapper. Each type of piece has their own feature. General is a powerful melee piece, he can deal more damage than others, however, he has very short moving range and can only attack close enemies. Colonel has a long attack range, but with low attack damage, and medium moving range. Captain has a longer move range than previous pieces, however his attack range is less than Colonel. Sapper is very special, since sapper's main mission is not combat, so his attack will probably miss at most of the time. But sapper has the longest moving range, and can deal a lot of damage to a building.

**What is the main focus?**

Players need to eliminate the opponent's pieces to occupy the opponent's base. Since each player wants to dominate the place they stay, there is no negotiation between them. There will only be one player left. Each player should try their best to find the optimal solution to conquer his enemy.

**What's different?**

Most of the strategy games have very complicated rules. It is hard for young players to study. Also, this kind of game needs a lot of time to play. Our game is easy to learn and fun to play. Also, the expected play time is around 40 mins, which is suitable for casual game play.

# Feature Set

## General Features

- 3D graphics
- 32-bit color
- 4 different pieces
- Strategy
- Terrain utilize
- Turn-based Strategy
- 2 player
- War
- Online
- Single player

## Multiplayer Features

- Up to 10 2 players
- Easy to find a match
- Easy to finish game in 40 mins
- Friends system
- Ranking system

## Editor

- Comes with board editor
- Get levels from internet
- Editor is super easy to use
- Player can design their own map

## Gameplay

- Hiding your pieces from your opponent, and give him a surprise
- Defense opponent's attack and find way to fight back
- Control the map to reduce opponent's move space
- Attacking oppoenet's base
- Exploit strengths of your pieces, but avoid weakness
- Try to catch opponent's weaker piece by your strong piece
- Even though Sapper is weaker in combat, you should find how to correct use it
- General looks like the strongest piece in the game, however you can find its weakness.



# The Game World

## Overview

In this board game for all ages, two sides of the battle are two kingdoms in war. Their battle simulates espionage in this war. Each spot on the gameboard represents a fortress. In this adventure, you will need to be the first to reach the opponent's base camp. Be careful, you need to try out different tactics, block your opponent's line and take over the fortress before the others do. Winning this game will bring supreme glory to your country.

## Great replayability

With 58 fortresses, 4 roles, and 5 routes to your competitor's base camp, you will never play the same game twice!

## Cross-platform feature

Confront players from all over the world with different experiences in the game. Discover new people in every battle. It's a great adventure with wits and courage.

## The Physical World

### Overview

The battlefield of Spytegy in the game is represented by the 2D game board. Each spot on the gameboard represents a fortress.

### Key Locations

The base camps for both players are the most important location in the game. Once one of the player's base camp gets occupied by the opponent's piece, the game is over!

### Travel

Each play has four different pieces: General, Colonel, Captain, and Sapper. To move these pieces, players need to roll the dice and move the pieces accordingly. To move pieces, the player needs to first specify a piece that he/she wants to move. After that, the player should decide how many steps he/she wants to move and move the piece. Also, he/she can choose to attack the opponent's pieces or stay where it is.

## **Scale**

The scale for this game is 1:1,000,000.

## **Objects**

The main objects in the battlefields would be the pieces for both players. In total, there would be eight of them: 2 Generals, 2 Colonels, 2 Captains, and 2 Sappers.

## **Weather**

In the game, it's always sunny.

## **Day and Night**

In the game, it will always be during the day.

## **Time**

The time in the game is the same as in real life.

# **Rendering System**

## **Overview**

To generate a photorealistic texture for our gameboard and the pieces, we use Blender 2D Vector Graphics Engine in the rendering process. It is a free and open source SET of 3D computer graphics software tools for creating animated movies, visual effects, art, 3D printed models, motion graphics, interactive 3D applications, virtual reality and computer games.

## **2D/3D Rendering**

Blender 2D Vector Graphics Engine is used for the rendering process. The game board itself and the eight pieces on the gameboard has the texture of plastic and wood products.

# **Camera**

## **Overview**

The camera is on the top of the game board and is perpendicular to the game board.

## **Camera Detail #1**

The camera will hold still all the time.

## **Camera Detail #2**

The camera will be turned on when the battle starts.

# **Game Engine**

## **Overview**

For the game engine, we use Unity. It is developed by Unity Technologies, and it is a multi-platform comprehensive game development tool that allows players to easily create interactive content such as 3D video games, architectural visualization, real-time 3D animation, etc. It is a fully integrated professional game engine

## **Tracking**

The game engine will keep track of everything in the world and the available positions for the pieces to move after the dice are rolled. If the invalid moves are made, there will be a tiny shake for the piece to remind the players that the operation is invalid.

## **Water**

There is no water in the game.

## **Collision Detection**

Our game engine handles collision detection really well. When two pieces collide, the corresponding shake will be performed by the engine.

# **Lighting Models**

## **Overview**

For the light source, we use directional light sources illuminating the game board. The light is perpendicular to the game board.

## **Diffuse Lighting**

For the lighting interaction, we are using the diffuse lighting to light our world. It gives direct illumination of our game board and pieces by an even amount of light interacting with a light-scattering surface.

## **Interactive Lighting**

For the lighting interaction, after light strikes the pieces and the gameboard, it is reflected as a function of the surface properties of the texture of the pieces as well as the angle of incoming light.

# The World Layout

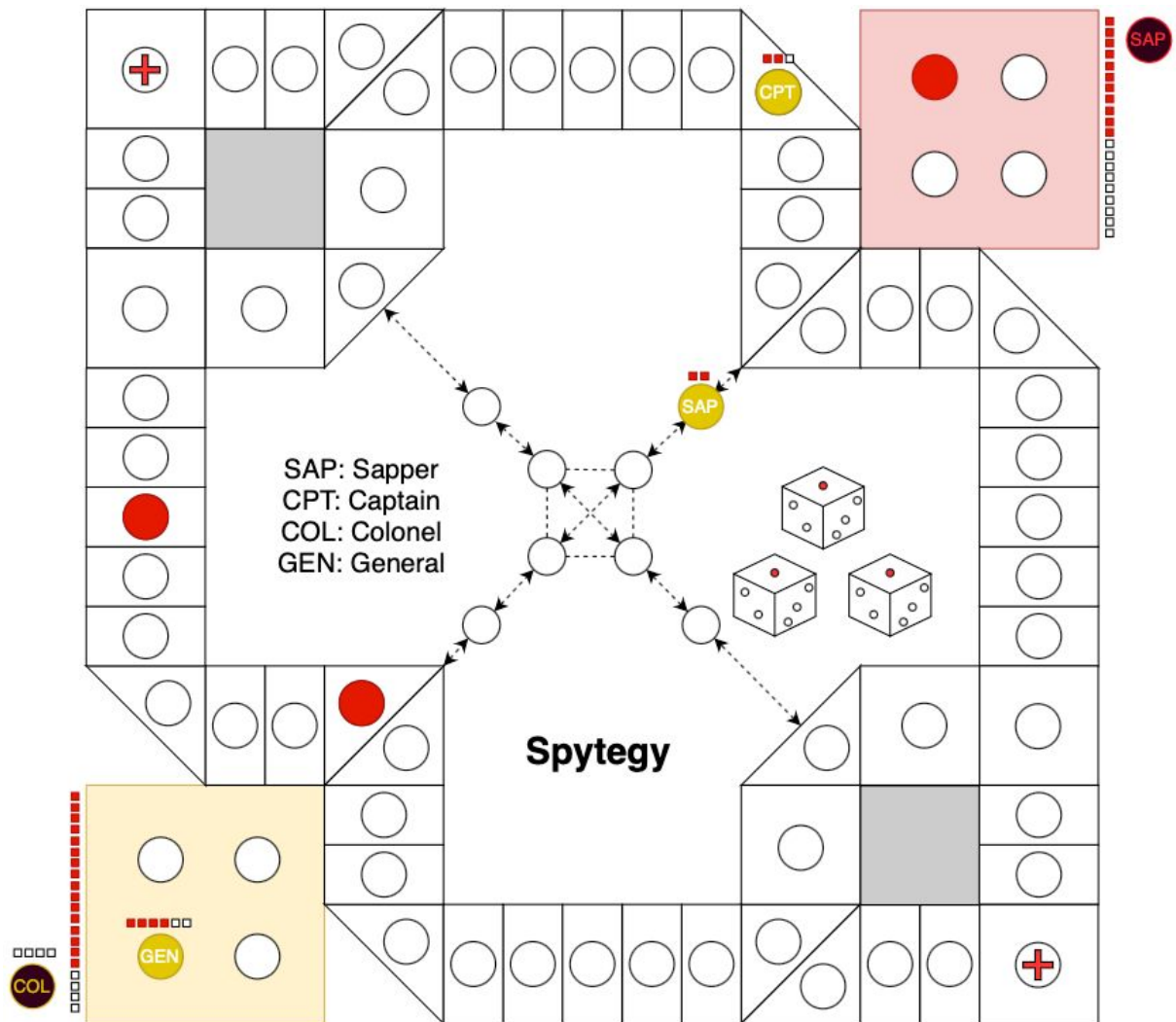
## Overview

At the beginning of World War I, Central Powers led by the Austria-Hungary Empire and Allies led by Serbia started the war on the Balkans. The major cause of the war was the hostility between Austria-Hungary and Serbia, which made some of the earliest fighting take place between them. Austria-Hungary and Serbia settled their military bases at the both sides of the island. The terrain is dominated by mountains, the south of the Carpathian Mountains is mostly hills and limestone, and the north is mostly plains. There are the Dinara-Pindus Mountains in the western part of the peninsula and the Carpathian-Laoshan (Balkan) Mountains in the central and eastern part. Two countries had opened up paths in the mountains between their military bases and their spies would use these secret paths to sneak into their opponent's base.

## The geographical map of Balkans



## In-game map



In Game

# Game Characters

## Overview

Spytegy, as a strategic board game, has no anthropomorphic game characters. However, it has various pieces with different features that the player could choose one of them each turn to complete tactical arrangement.

## Pieces Features

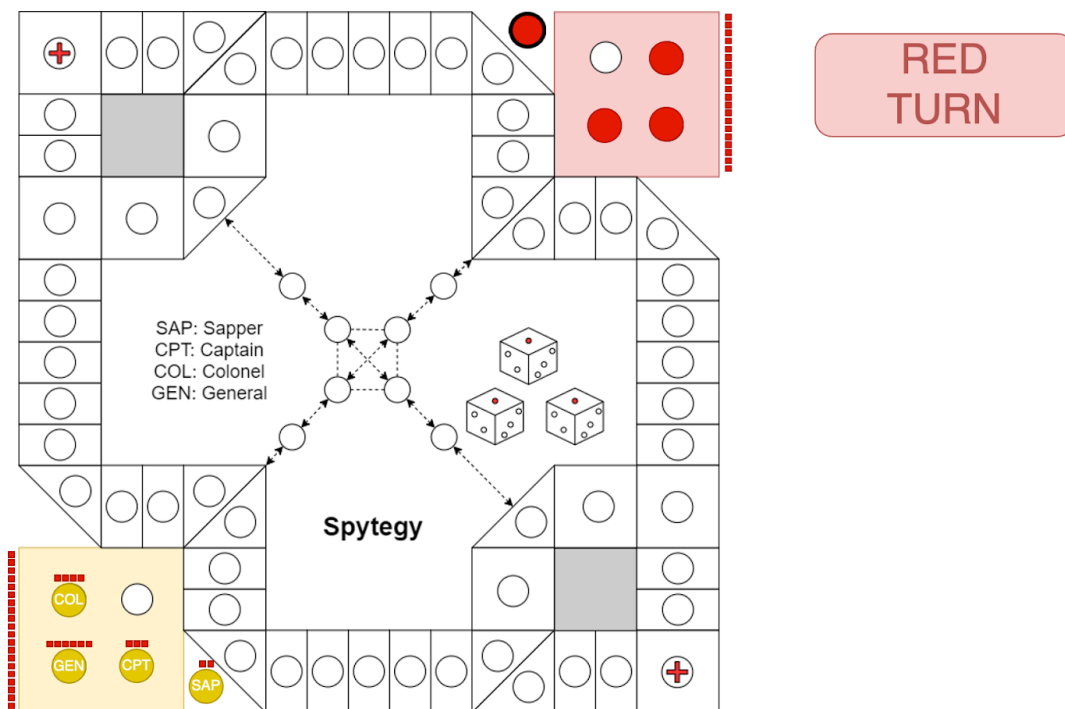
General is the highest level piece who moves slowly and attacks within a small range with highest damage power. Colonel is the second highest level piece who moves a little bit farther than the General and attacks within a normal range with second highest damage power. Captain is the second lowest level piece who moves faster and attacks more weakly than General and Colonel. Sapper is the lowest level piece but with huge potential functionality, which has the fastest movement and can discover the identity of opponent's pieces when attacking.

# User Interface

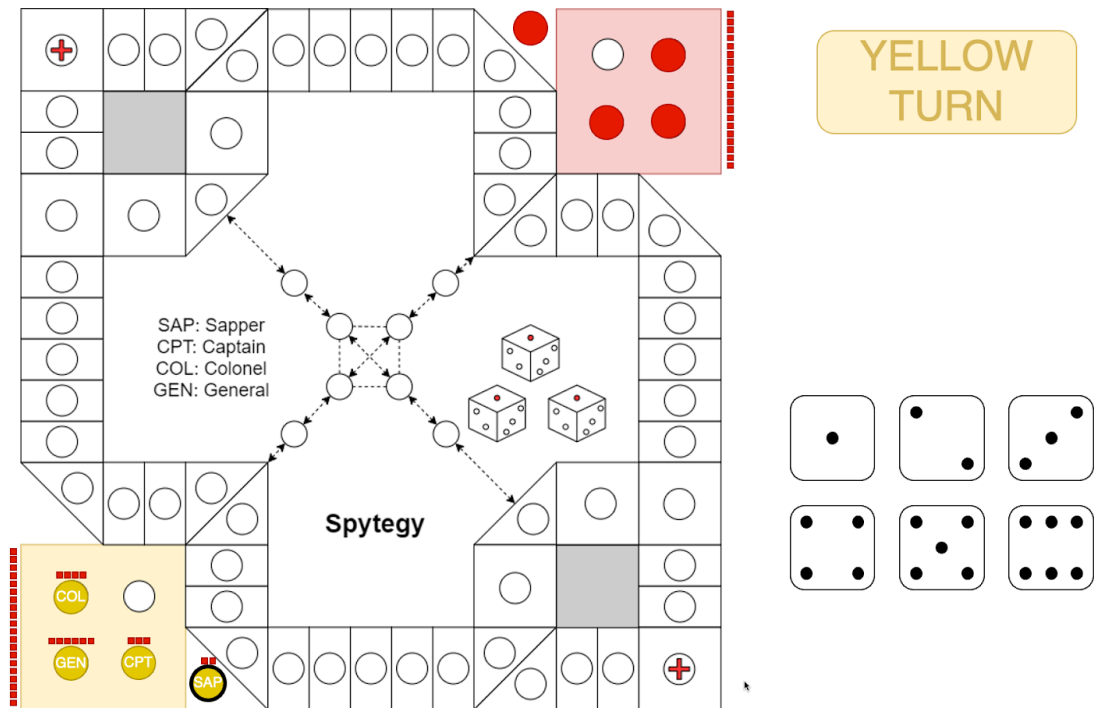
## Overview

The user interface is composed of three parts: the game board, the dice roller, and the information board. The game board is designed in 2D world and made of several blocks and circles. The information board updates the current game progress to players and provides a prompt to propel the game forward. When the information board shows the change of turn, there would be a dice roller on the right side and the player could choose a value to roll.

## In-game 1



## In-game 2





## **Weapons (N/A)**

# Musical Scores and Sound Effects

## Overview

1. [Musical Scores: Victory - Two Steps From The Hell](#)
2. Sound Effects: extracted sound effects from 《Red Alert 2 Yuri's Revenge》

**Disclaimer: The above audio resources are from the Internet and are for learning and communication purposes only. The copyright belongs to the original author. Please consciously delete it within 24 hours after downloading. For commercial use, please purchase the original or contact the author.**

## Red Book Audio

We may not use red book audio because it's easier for us to obtain audios in MP3 or AAC format nowadays. For background music, we prefer online streaming that avoids copyright dispute outside of the U.S.

## 3D Sound

Currently, we don't need 3D sound effects in our game. We may use Steam Audio if needed in the next version.

## Sound Design

- Loading Game:
  - [“Establish Battlefield Control, Stand By.”](#)
  - [“Reinforcements Ready.”](#)
  - [“Force Shield Ready, On Hold.”](#)
- Opening Game:
  - [“Battle Control Online...”](#)
- After Rolling Dice:
  - [“New Objective Received.”](#)
- When Player's Pieces Under Attack:
  - [“Our Ally is Under Attack.”](#)
- When Player's Base Under Attack:
  - [“Our Base Is Under Attack.”](#)
  - [“Tech Building Lost.”](#)
- When Player's Opponents Has One Health Point Left:
  - [“Don't Mess With Me!”](#)
  - [“This Will Be Easy!”](#)

# Single-Player Game

## Overview

The player takes on the role of a commander who controls his army on the board and defeats the aggressor. The AI opponents in the single player game have three different difficulty levels, easy, median, and hard.

## Easy & median mode(Single Player Game Detail #1)

The easy version of the AI opponent will only attempt to attack the player's base all the time. It will not attempt to resupply the pieces at the depot, which is intended for beginners to familiarize themselves with the game. AI opponents of medium difficulty will select attack pieces or bases based on the status of their pieces, and will also move pieces to the supply depot to restore at the appropriate time.

## Hard mode(Single Player Game Detail #2)

In hard mode, the AI will use the characteristics of each piece to make the most advantageous move at the moment, and will use some special tactics to try to defeat the player. Players can experience the excitement of playing against the best players in hard mode.

## Story

You were a commander in the Austro-Hungarian army. Recently, your country is at war with Serbia. Unfortunately, the commander of the Southern Legion was assassinated by the enemy, and this commander is your most respected mentor. As you are good at mountain warfare and spy warfare, you have been appointed by the king to replace your mentor. All you have to do now is use your wisdom to defeat the Serbian army and avenge your mentor.

## Hours of Gameplay

The duration of the game depends on the player's proficiency and the difficulty of the AI opponent. According to our tests, a game typically lasts between 20 and 60 minutes.

## Victory Conditions

The player's ultimate goal is to destroy the opponent's base. Both sides of the base have a certain amount of health, the player needs to protect their own base while attacking the opponent's base. If the health of the opponent's base drops to zero, the player wins.

# Multiplayer Game

## Overview

Players can buy board and pieces offline to play against family or friends, or play against players from around the world online. Each side's goal is to win by destroying the other's base.

## Max Players

Two

## Servers

Peer-to-peer

## Customization

After logging in, players can choose to enter a room created by a friend or create their own room, and then play with friends online. Also, players can enter public rooms created by unknown players and play against them.

## Internet

Players can log in to the game hall on the official web or cooperate web page, and then choose to enter the existing room in the game hall or create a new room of their own.

## Gaming Sites

The multiplayer version of this game is P2P, players need to purchase the function “creating room” to create a new room for multiplayers to play. The game client hall and game gateway use the TCP protocol based on connection to communicate, to ensure the reliability and stability.

## Persistence

The persistence of this game is none, as the game is over as long as one side wins, and the expected time to play a round is about an hour.

## Saving and Loading

Since this is a board game, the game cannot be saved in the middle. And if one side decides to quit the game, the other side is automatically declared as the winner.

# Character Rendering

## Overview

The characters in this game are different pieces. Each type of piece has two different colors, yellow and red. Players can buy physical pieces in the real world or use virtual pieces when playing online.

## Physical Pieces

The real pieces have two different versions. The first version, made of plastic, is cylindrical, about the size of a 50-cent coin and about half a centimeter high. The upper half of the piece is a knob. The center of the knob is the type of piece, and the side is the corresponding health value of the piece, which are both stable. On the side of the knob is a black pointer, which is used to point to the health of the piece in its current state and is turnable.

The second version is made of wood. It has the luster and feel of wood and is about the same size as the first version. But the sides are curved, and the height becomes 1 centimeter. The upper half of the pieces is still a knob, similar to the first version, except that the second version has a raised little triangle on the side of the knob.

## Virtual Pieces

The online version of pieces are a 2D circle that has two states, hidden and exposed. There is no information on the pieces when in hidden state, while the exposed state has the type of pieces in white color. Exposed pieces will also have health values displayed as small squares above them. They will start out red and turn white when attacked.

# World Editing (Map Editing)

## Overview

There are two main elements in our map, the first is the green-based part representing the jungle, and the second is the earthy part representing the road or ground. Both bases are rendered in camouflage, and in the middle of the map we use some white to represent the snow on the mountains.

## Side of Map

The paths on the edge of the map for moving pieces are made up of rectangular and triangular blocks with a circle in the middle for placing pieces. The background color of these blockers is a gradient from green to soil color, which is used to represent different mountains. There are also two treatment stations in the upper left corner and the lower right corner, each represented by a tent with a Red Cross.

## Center of Map

In the middle of the map is an X-shaped road that only Sapper can be placed. This road is made up of circles and arrows. A circle is a place where pieces are placed, and the arrow indicates the direction in which they can be moved. The background color in this part is changing from green on the side to soil color, and finally changes to white in the middle. This is used to show the highest peak in the map. White is the snow on the top of the mountain.

## **Extra Miscellaneous Stuff (N/A)**

### **Overview**

N/A

## **“XYZ Appendix”**

N/A

## **“Objects Appendix”**

N/A

## **“User Interface Appendix”**

N/A

## **“Networking Appendix”**

N/A

## **“Character Rendering and Animation Appendix”**

N/A

## **“Story Appendix”**

N/A