**Game Design and Implementation**



**Save Magicland**

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# 1. Introduction

Our idea is to make a simple but interesting game for all kind of players. It should be easy to understand and follow the principles of learning by doing. It should not be time consuming but at the same time the player should not feel like getting bored after a few minutes.

Games like Jetpack Joyride, Super Mario and Pokémon have been inspirational source because these are games that all team members enjoy playing and also due it its simplicity and success.

In order to create a successful game we want to answer the following three questions:

1. What is the goal of the game?
2. What objects do we need in order to create the game?
3. What are the relationships between the objects?
4. What makes the game interesting?

Due to time limitations our physical result will present a simplified prototype of the first level. The report will cover the work of a first version of the whole game.

# 2. Game Overview

In order to create a successful game a backstory and audience have to be considered to make sure the game is complete and keep it interesting.

## 2.1 Idea - Backstory

The backstory of our game called “Save Magicland” is for the great wizard to save Magicland and its citizens from the evil wizard, who has concurred Magicland and captured all citizens. He has now enchanted Magicland with dark magic and creatures.

One wizard, Merlin, managed to hide in the woods from evil wizard and has now the task to save Magicland and its citizens. However, Merlin is still very inexperienced and has a long journey ahead of him to the evil castle of the evil wizard. In order to save Magicland he has to gain experience along the journey by collecting different kinds of useful resources while he has to face many different challenges on his way. He has to hide from, and fight dangerous creatures and curses on his way to the dark castle where he finally has to defeat the evil wizard in order to free magic land and all its citizens.

## 2.2 Genre and basic game concept

Our game is a 2D horizontal scrolling runner game. It will be categorized as a Role-play game *(RPG)* belonging to the fantasy category. The player will be cast into the role of the great wizard who has the task to save his country. On his journey the wizard is moving though a fantasy world including magic, wizards, witches, creatures and obstacles, which the player has to overcome.

## 2.3 Target Audience

The target audience is casual players who love the idea of fantasy and magic. The game can be played anytime and anywhere, weather you want to play for 5 minutes, 30 minutes or longer, it doesn’t matter since your progress will always be saved no matter if you have to quit during a level or after completing one.

## 2.4 Looks and feeling of the game

The look of the game is inspired by magic and fantasy. Depending on level the setting changes; it can be in a forest, desert, underwater or in the mountains with different kind of fantasy inspired vegetation. The sky is unnatural with moons, suns and stars. The main elements are different kinds of obstacles, spells and resources that all share the magic and fantasy theme. Figure 1 presents a few pictures, which are used within the game.

[FIGURE 1: PICTURES OF BACKGROUND & WIZARD]

Since an evil wizard is currently ruling the magical land there is a mysterious, dangerous and dark feeling about the place. The player should feel like he/she is in danger and does not know when or from where he/she can get attacked from. At the same time the player should feel curious and want to discover the new mysterious world with its unusual setting he is evolving in.

# 3. Game world

In order to create a game we need to define the goal and the objective of the game, and what objects are needed to reach that goal. Further the relationships between all objects need to be defined. These two aspects also set the rules for the game.

## 3.1 Objective

Objectives give the player something to strive for. They define what players are trying to accomplish within the rules of the game. Our aim is to make the goal of the game seeming challenging but achievable to the player.

The goal of out game is to destroy the evil wizard. The objective in our game is for the great wizard to free Magicland and its citizens from the evil wizard by completing all four worlds (12 levels), each of which has their own mini objectives. The objective of each level is to defeat the evil creature guarding the gate to the next level by collecting all necessary spells and recourses.

## 3.2 Objects and their relationships

In order to create the game and the game rules we need to define all objects that are part of the game and their relationships with each other. The following objects are found in the game:

* **The great wizard**, which will be played by the game player. His task is to defeat all evil and save Magicland.
* **Enemies:** the greatest enemy is the evil wizard who controls Magicland from his castle. Within each level there will be evil creatures to defeat. To win the game the player has to defeat the evil wizard in the last level.
* **Obstacles:** In each level static and dynamic obstacle will be present. These can be represented as part of the environment or as an act from evil creatures: stones, holes, animals or spells from enemies.
* **Resources:** These are objects needed to defeat evil creatures or to give the great wizard advantages throughout the game. These are represented as either *life saving potions, coins* and *spells.*
  + **Coins:** By collecting coins the great wizard can earn special resources, which are helpful tools to overcome different task throughout the level. These are a shield, an invisible coat and superpowers that are handy during the duel and to avoid obstacles by not only jumping.
  + **Spells:** There are three types of spells; *fire, water* and *wind spells*. In order to defeat the evil creatures the wizard has to choose the right spell as different creatures react differently to the different spells.
  + **Potion:** If the wizards gets hit by an obstacle or a spell and has a life saving potion in his belongings he will survive and carry on the level instead of dying and having to replay the level.

The relationships between all objects are presented in table 1. There are four states the obstacles can interact with each other:

1. *Surviving an attack/obstacle* (S)*,*
2. *Dying in an attack/obstacle* (D),
3. *No effect of an attack/obstacle (NE)*
4. *A resource is collected* (C)
5. *No interaction* (-)

The name of each object is shortened; see below:

|  |  |  |  |
| --- | --- | --- | --- |
| Great wizard = GW | Fire spell = SFire | Water Spell = SWater | Wind Spell = SWind |
| Stones = S | Holes = H | Animals = A | Shield: SH |
| Invisible coat = IC | Superpower = SP | Potion = P |  |
| Enemies weak to fire = EFire | Enemies weak to water = Ewater | Enemies weak to wind = Ewind | Spells from Enemies = Senemy |

Table 1: Relationship between objects

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | GW | SFire | SWater | SWind | EFire | Ewater | Ewind | S | H | A | Senemy | SH | IC | SP | P |
| GW | - | C | C | C | S/D | S/D | S/D | S/D | S/D | S/D | S/D | - | - | - | - |
| SFire | - | - | - | - | S | D | D | - | - | - | - | - | - | - | - |
| SWater | - | - | - | - | D | S | D | - | - | - | - | - | - | - | - |
| SWind | - | - | - | - | D | D | S | - | - | - | - | - | - | - | - |
| EFire | S/D | D | S | S | - | - | - | - | - | - | - | NE | NE | - | NE |
| EWater | S/D | S | D | S | - | - | - | - | - | - | - | NE | NE | - | NE |
| EWind | S/D | S | S | D | - | - | - | - | - | - | - | NE | NE | - | NE |
| S | S | - | - | - | - | - | - | - | - | - | - | - | - | D | NE |
| H | S | - | - | - | - | - | - | - | - | - | - | - | - | - | NE |
| A | S | - | - | - | - | - | - | - | - | - | - | - | - | D | NE |
| Senemy | S | - | - | - | - | - | - | - | - | - | - | D | - | - | NE |
| SH | - | - | - | - | - | - | - | S | - | S | S | - | - | - | - |
| IC | - | - | - | - | S | S | S | - | - | - | - | - | - | - | - |
| SP | - | - | - | - | - | - | - | S | S | S | S | - | - | - | - |
| P | - | - | - | - | S | S | S | S | S | S | S | - | - | - | - |

## 3.3 Game rules

The game contains to main stages; *moving along the journey* and *duel against evil creatures*. In order to fulfill the objective of the game the player has to:

* **Avoiding obstacles**: In order to proceed in the game the player has to avoid all obstacles during the stage *moving along the journey.*
* **Collect resources:** By collecting resources (spells, potions, coins) the player gains a greater arsenal; tools to survive and to defeat all evil. This is also done during the stage *moving along the journey.*
* **Winning duels**: By winning the fight at the end of each level the player unlocks the next level, hence moves on the to a more advanced level. This occurred during the second stage *duel against evil creatures*.

**The general rules for the first stage of the game are:**

* **Life:** The player has one life to start with. If a spell or an obstacle hits the wizard, he loses his life and you have to start from the level’s beginning.
* **Obstacles:** During the game the wizard has to avoid either static or dynamic obstacles.
* **Resources - Potions:** By collecting potions you collect *“life saving potions”.* This represents a spare life. If a spell or an obstacle hits the wizard he will automatically use his potion to survive and keep on playing.
* **Resources - Spells:** There are three different kinds of spells to collect: *fire spells, water spells* and *wind spells****.*** For each level the player has to collect four of each spell.
* **Resources - Coins:** During the game coins can be collected. When at least 50 coins are collected the wizard gains an advantage during the game by receiving a special recourse (shield, invisible coat or superpowers).

During the game obstacles, resources and coins will occur randomly. To simplify the randomness we used dice numbers during our first prototype, which are defined below:

**1-2:** Obstacles occur; the wizard has to avoid it by jumping or flying.

**3-4:** Spell occurs which the wizard has to avoid by jumping or flying.

**5-6:** Resources occur: the wizard has to collect these in order to defeat the

evil creature at the gate or in order gat advantages during his journey.

**The rules for duel at the gate**:

After collecting all necessary spells the wizard will arrive at a gate to the next level. Before he can enter he has to fight the evil creature guarding the gate.

* **Life and duration:** You have three lives and 60 seconds to defeat the evil creature by aiming spells at it.
* **Spells:** You have to choose the correct type of spell in order to defeat the evil creature. You have to hit the creature three times while it can avoid your spells and send spells back at you.

The dice numbers used during our first physical prototype are:

**1-5:** regular spells from evil creature; if you get hit you lose one life.

**6:** powerful spell from evil creature; if you get hit you lose two lives.

These rules will also be used in the virtual prototype, thus the dice numbers are going to be replaced by a *mathematical Random() function*.

# 4. How to make the game interesting

In order to capture the interest of the player, and keep him/her in the game flow, the player will, from the beginning, be subjected to a clear variety of information and choices that represent the purpose of the game. This will be displayed by clear graphics and with the purpose of giving the player a sense of control.

## 4.1 Screen flow

The screen flow tells you which buttons are needed on every screen and how all screens relate to each other. When opening the game the player arrives at a home screen, which firstly displays the title of the game for three seconds and then showing a map of the virtual journey of the wizard. The player interacts with **buttons on the map.** He/she has the ability to choose at which unlocked level he/she wants to start playing. These buttons will be displayed on the map picturing the journey the wizard has taken so far and what is still ahead of him until he reaches the dark castle. The buttons will be displayed as numbers representing the different levels. Locked levels will be visible but faded to indicate that they are not accessible yet. By clicking the desired **level button** the game will start. This way the player is informed and by giving him the choice of where to start playing his/her interest is kept – maybe the player would like to replay a level because it was very fun last time. This structure of the screen flow is visualized in figure 1 where each square represents a screen and the arrows represent actions taken by player leading to a new screen.



Figure 1: Screen flow of “Save Magicland”

## 4.2 Game flow

Game flow is about creating difficult situations for the player that are rewarded when completed. If good game flow is present the player will be motivated to carry on playing.

While playing the game there will be different ways for keeping the player’s interest; these aspects are:

* **User-friendly interaction:**

When playing the game there will be no specific buttons to interact with to control the wizard. The wizard moves in terms of running, jumping or flying. He will start running by himself when the game starts. The player controls the wizard’s movements by:

* + Clicking the screen for jumping
  + Press and hold for flying

Resources are chosen by clicking on the symbol of the type of resource you want to use at the time. All resources in your belongings will be presented in a toolbar at the top of the screen.

This is a simple interaction between human and the computer, which the player will learn quickly by simply playing. If it is an experienced player he/she will recognize the structure from other games.

* **Information:**

At the start of each level the player receives a written task displayed as a letter in the middle of the screen. The letter includes an introduction of the level and requirements for completing the level, hence defining the minimum amount of resources and the amount spells, which have to be collected. To start playing the player presses the “ok” button at the end of the letter. This information will keep the player informed and avoid confusion during the play and in this way keep him/her interested.

* **Choices**:

*Navigation alternatives*: The player can choose alternative paths depending on the location of different resources.

*Resources:* The player can collect different resources and sometimes he/she has to prioritize which ones to collect at the time. Depending on collected resources the player can in later levels chose different defense mechanisms depending on already collected resources. All choices taken by the player will determine the rest of the game flow.

* **Rewards**:

From the beginning on the player will easily be rewarded and be given positive feedbacks. Rewards will be used to guide the player through the game and to capture the player’s interest.

* **Game progression**

The player will also be subjected to a feeling of advancement during the game by increasing difficulty and changing the environment continuously in order to prevent the player from getting bored.

## 4.3 Rewards

Practical rewards are one of many strategies of keeping a player interested in the game; in this game these are:

* **Evolve**:

The player will evolve visually over time while completing levels. For instance, the player will grow and gain strength, skills and tools. Depending on how fast and how many coins he/she has collected during the entire game the player will be given rare and special resources. (Note that completing a level doesn’t necessarily mean there will always be a visual or a physical reward).

* **New game modes:**

The game will include new game modes, upgrades and unlockable levels and tools throughout the whole game. This can be gained by completing certain levels, collect special resources or defeat certain powerful evil creatures.

## 4.4 Game progression

Another aspect of keeping the game interesting is to proceed in the game such that the player doesn’t get the feeling each level is the same. The player has to be surprised by new features and looks continuously during the game. Therefore the game will progress in:

* **Difficulty**:

The game will get harder with each level progression.

* + Increasing obstacle frequency, its size, shape and appearance. Obstacles can in later levels be creatures chasing the player, or coming from above and beneath.
  + Increasing running speed of the wizard such that the player has to increase his ability to react on obstacles and resources.
  + Collecting resources will get more difficult such that the levels might increase in length and therefore more opportunities to get hit by obstacles and spells.
  + Special resources are offered but will have the player taking more risks to collect them.

* **Environmental progression:** different levels are set in different environments, for example in a forest, desert, underwater or in the mountains, such that visual effects are created depending on location and level difficulty. This implies that new obstacles and creatures can occur in different levels such that the player might not know how to fight them or from where they are attacking such that the player has to be alert constantly during the game.

## 4.5 Balance of the game

Game balance is the concept of tuning a game’s rules in order to prevent the system to have any inefficiencies or undesirable components or relationships between objects. It is rather impossible to create a perfect balance, but in order to keep the player interested in the game it is an important thing to strive after. In order to make “Save Magicland” balanced the following aspects are considered:

* **Balancing fairness:**

Although balancing a game does not necessarily mean making the game fair, it is still considered as an important factor. This means the task is to balance the acceptance of unfair scenarios within the game. This potential for unfairness creates uncertainty, leading to the tension and excitement. In our game fairness will be balanced at the duel. The great wizard will have more advantages during the first levels in order to be able to win against the enemy easier such that he/she doesn’t lose interest in the game. Along the journey the levels will become harder, hence it will be harder for the wizard to win the duels.

* **Difficulty:**

The player will be challenged throughout the game buy making higher levels more difficult and unpredictable as previous levels. This is done by randomization such that there is no pattern to learn when obstacles or resources occur. In higher levels obstacles are also able to attack from behind, below or above the player such that the player has to improve his awareness of his surrounding and reaction time.

* **Pacing:**

Since “Save Magicland” is a player versus environment game the game will be balanced by regularly challenging the player’s ability by changing the obstacles shape, frequency and appearance. Resources will be placed in more difficult ways and the environment will changes continuously in order to make the player more alert. Also the running place of the wizard will increase in order to challenge his reaction ability.

# 5. Summary and Conclusion

The game we designed is called “Save Magicland” and is a RPG fantasy game in 2D. The backstory of the game is that an evil wizard has concurred and enchanted Magicland and captured all citizens but one. Now it’s the great wizard’s task to free Magicland and its citizens from the evil wizard. Therefore the goal of the game is for the great wizard to get to the evil castle and fight and destroy the evil wizard.

The objects that are needed in order to create the game are: *the great wizard, enemies (evil wizards and all his evil creatures), obstacles* and *resources (potions, spells and coins)*. As this game is a player versus environment game all objects have a relationship with the great wizard, which is casted by the player. But there is no direct interaction between obstacles, resources and enemies.

In order to make the game interesting there has been a focus on making the interface user-friendly and simple such that the player follows the principle of learning by doing. Additional information about game rules and different levels will be displayed at the start of each level to keep the player informed. Also choices, rewards and game progression in difficulty and environmental is considered to keep the player’s interest.