

Game Design Document

Dev Fun One

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1. Introduction

Peculiar Pet Adventures is a 2.5D platform puzzle game. Where you and your pet need to collaborate to escape the castle and magical forest to make it home safely.

This document describes the game design of 'Peculiar Pet Adventures'. Meetings were started on November 12th, 2019 and involving Alvin de Blieck, Qianqian Chen, Casper Teirlinck, Shunqi Tang, Shifra Lopulalan.

1.1 Target Audience

Because of the level of the puzzles and absence of any combat, the game will be appropriate and fun for anyone from 7 years and older. The complexity of some puzzles can also be fun for adults.

1.2 Platform & Controls

The game will be played on PCs with Windows using keyboard and mouse.

2. Story, Characters, Setting

2.1 Story

The player was taking a walk with his pet but suddenly the pet ran off into the forbidden magical forest. Without thinking he ran after his pet, but being so busy trying to catch up to his pet he got lost in the magical forest. He heard a strange noise and saw a dark shadow. Everything went black and he fell down.

A little later he woke up in a dungeon cell. His vision was blurry but he saw a weird shape. He then realised it was his pet, somehow the pet found him in the dungeon. They now have to escape the castle and magical forest to get home safely.

2.2 Characters

There are two different characters, both controllable by the player. We have the main character which is the little boy, and the pet as a character. There are no NPC's present in the world.

2.3 Setting

There are two different settings in the game. We start off in the castle, first the dungeon of the castle and as the game continues we see different rooms of the castle. When the player gets out of the castle, he enters the magical forest.

3. Artificial Intelligence

The pet will have an artificial intelligence component. The player can give a command to the pet to move to a certain location on the map, by clicking on that location. The pet then has to find its way to that point without any other input of the player.

A path-finding algorithm finds the shortest path, over the different height levels of the level. The pet then can follow this path, and has to know when to jump and how high.

3.1 Component Priorities

Must have:

- Path finding algorithm,
- Graph system to map out the level with way-points,
- Path following AI system for the pet.

4. Level Design

4.1 Level overview

The camera moves from left to right together with the active character of the player. The height of the camera is fixed, and all parts of the level are visible in the height direction at once.

4.2 Level settings

There are two types of levels:

- Inside levels: The castle,
- Outside levels: Magical forest.

The setting determines the aesthetic of the level assets and the look of the lighting.

For the castle levels, levels are "rooms" in the castle. The goal of each level is to unlock the door at the end of the room with a key. Key is visible from the beginning, but not accessible. A puzzle has to be solved to free the key. Then the key can be used to open the door.

For the Forest levels, they include magic particle effects. The levels are bounded by a magic "portal", which is not functional. The goal is to find a piece of a map, just like the key in castle. When the piece is found, the portal opens up and the player can progress, similar to opening the door in the castle levels. When all pieces of the map are found, the forest can be escaped and the game will be completed.

4.3 Level progression

4.3.1 Castle Level 1 (Introduction)

Only the pet command mechanic is available. In this level the player should get familiar with controlling the pet by giving it commands.

The player starts locked up in a cell in the dungeon of the castle. The pet is outside the cell in the dungeon. A simple puzzle has to be solved by the pet only by giving it commands. The key found on solving the puzzle can open both the cell to free the player and the door.

4.3.2 Castle Level 2

A slightly more complex puzzle has to be solved by both controlling the player and commanding the pet.

4.3.3 Castle Level 3

A more difficult puzzle, where the player has to fully make use of the two characters. The door then opens up to the outside into the forest.

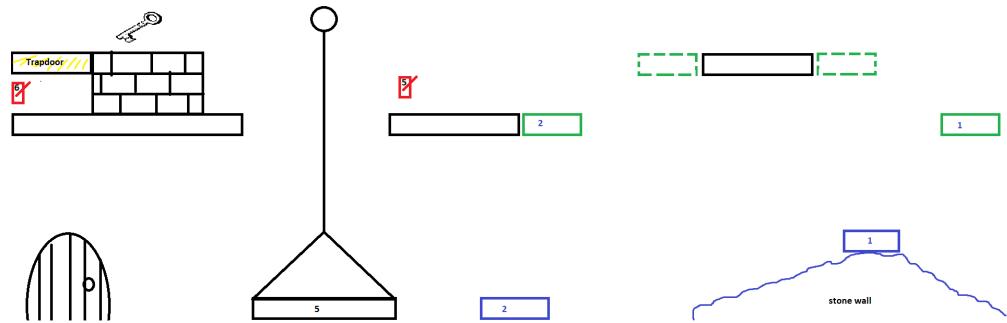


Figure 1: First part of the final castle level.

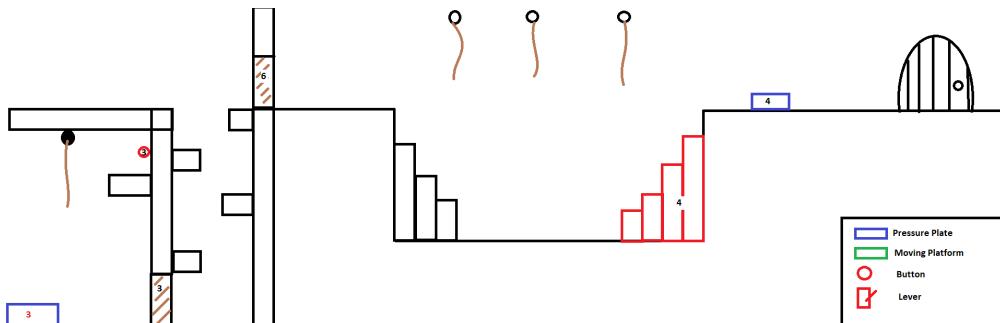


Figure 2: Second part of the final castle level.

4.3.4 Forest Level 4

Full control of the pet is introduced. During this level the player should get familiar with fully controlling the pet. The puzzle will again be a bit simpler

4.3.5 Forest Level 5

A more complex puzzle where the player has to make use of the full control of the pet and player. This final level results in getting the final piece of the map to escape the forest.

4.4 Component Priorities

Must Have:

- Level building block assets,
- Interactable level blocks,
- Pickup items: keys and map parts,
- Level complete detection mechanic,
- Level progression tracking system.

5. Gameplay and mechanics

5.1 Gameplay

The main gameplay consists of controlling the character and the pet to solve puzzles per level. However there is a rule to the player being able to control the pet; The character and the pet must have line of sight to each other.

The puzzles require the player to make the player and pet character work together. Challenges can come from the limitations given to the control of the pet, while the pet is necessary to solve the puzzles.

Solving the puzzle rooms in a shorter amount of time will yield a higher score.

5.2 Mechanics

There are three main mechanics for the pet throughout the game:

- Pet command: # of pet commands is limited.
- Pet control: The time you can control the pet is limited.

- Pet control: Line of sight between the main character and the pet is necessary to maintain control of the pet.

For both the pet and the player a simple interaction mechanic is present to be able to interact with elements in the world.

The time it takes to solve a puzzle room is the basis of the score. The score mechanic keeps track of the time spent per level and presents a score to the player.

5.3 Component Priorities

Must have:

- Be able to command the pet to a spot on the level,
- Be able to fully control the pets movement,
- Interacting with elements in the level using a single interaction action,
- Save system on completing level.

Should have:

- Keeping track of the time it takes to solve a level,
- Presenting score based on level time.

Wont have:

- Local/Online multiplayer,
- Dynamic difficulty based on player skill.

6. Art

6.1 Main style

The game has a low poly cartoon style, which fits the target audience very well. The main colors of the game are black, blue, green and orange/red. The cold colors are mainly chosen because they are not overpowering, and they make a space seem larger. However, there are a lot of elements with a red/orange color in the game world. The red color may provide the player with a strong feeling of danger and urge to escape from

this area, which fits the goal of the game. Besides that, the background of each level is blurred, in order to create a depth of field. Also, the background should fit every level and not bother the player during solving puzzles.



6.2 Models animations

	Models	Animations
Player	Boy & girl	idle, run, jump, interact with object
Pet	Dog	idle, run, jump, interact with object

6.3 Textures

Level background	Textures	Colors
Dungeon cell	Rough rock wall	Dark blue, red
Castle room	Castle wall	Blue, brown
Magical forest	Trees and strange plants	Green, blue, orange

6.4 Component Priorities

Must have:

- 3D models of the main characters,
- Animations of the main characters,
- Background for every level,
- 3D models of the objects.

Should have:

- Be able to customize the color of the clothes of the player.

Could have:

- Choices of pets.

Won't have:

- Fully customizable characters.

7. Sound and Music

The music will be implemented after some levels are finished. This way we can see what sounds are necessary and will be a useful addition to the game.

8. UI and Game Controls

8.1 UI

The game will use simple and clear menu systems which are easy to use for everyone. There will be a main menu where you can create a new game, load a previous saved game, check the options menu and quit the game. The pause menu will have a similar layout as the main menu. When new game is selected, the player is directed to the character screen where the player is able to enter the character name and choose the gender of the character. In the options menu there will currently only be the option to change the volume of the game, for when sounds are implemented.

8.2 Game Controls

The following game controls will be used throughout the game:

Action	Keybind
Player movement	A (move left), D (move right)
Sprint	Shift
Jump	Space bar
Pet Command	Left Mouse Click
Switch character	Q
Interact	E

8.3 Component Priorities

Must Have:

- Main Menu,
- Pause Menu,
- Options Screen.

Should Have:

- Score Screen,
- Character Creation Screen.

Could Have:

- UI animations,
- Graphics settings.

Won't Have:

- Playable main menu,
- Custom Keybinding.