Group name and number

Dev Fun One (GA_01)

Theme and interpretation

Strange pet, “collaborating on adventures with my strange pet.”

Game idea in about 100 words:

It’s a platformer game where you have to collaborate with a strange pet. Solving puzzles ~~and fighting enemies~~ so you can reach home safely with your newly found pet. ~~The levels vary between puzzle and combat levels. You can switch between controlling the player and the pet during the puzzle levels, this is only possible while maintaining line of sight(otherwise control of pet is lost).~~

The most important mechanic of the game is commanding your pet so he’ll help you solve the puzzles and you can escape the castle together. The difficulty will be in the limited amount of clicks you have to command your pet. When you have used all clicks, the pet will stop listening to you and you’ll have to either try and solve the puzzle all by yourself or restart the game.

~~And during combat levels, the pet will be controlled by AI while the character is controlled by the player. After all the levels are completed, the final boss battle will determine whether the pet will stay with you.~~

Student names, emails and role assignment

Name	Student Number	Email	Role
Alvin de Blieck	4557573	A.s.deBlieck@student.tudelft.nl	Game Designer - mechanics and overall feel Gameplay Testing
Qianqian Chen	4593499	Q.Chen-5@student.tudelft.nl	World Builder
Casper Teirlinck	4680723	C.Teirlinck@student.tudelft.nl	Lead Programmer

Shunqi Tang	4673530	S.Tang-2@student.tudelft.nl	Lead Artist
Shifra Lopulalan	4564383	S.A.Lopulalan@student.tudelft.nl	Game Designer - details Producer

Which features you are thinking to be implementing in your game

Total stars: 32 ★
Computer Graphics (CG): 16 ¾ ★

o 3D Models:

▪ 3D models for main character, pet, stairs, platforms, etc. ★★

Making a 3d model for the character and pet from scratch in Blender, which is a lot of work.

▪ 3D animated models for main character, pet ★★★

After creating the 3d model the movement of the main character and pet have to be created. After this is done, it still has to be implemented in Unity which can be complex.

o Textures:

▪ Textures for objects ★ Not very difficult, just a lot of work for multiple objects

~~▪ Animated Textures (such as fire, water, sparkles) ★, elements in the background that'll move like the fire of torches, the water in a pond~~

o Special effects & Juiciness

▪ Animations with eases for characters ★

▪ Audio effects ★

▪ Randomized Audio effects ★ Audio effects that can change in pitch and in sound e.g. add 2 sound effects and the audiomanager randomly chooses which one to play.

▪ Camera shakes (when interacting with gameobjects) ★

▪ Particle Systems (smoke on torches, dust when opening doors, etc.) ★

▪ Camera smoothing ★

o Rendering

▪ Play with lights and shadows ★ again not difficult, just a lot of work due to implementing, testing, adjustments, retesting, etc.

Different settings will have different light levels.

o User Interface (with new Unity3D UI tools)

▪ Main menu screen ½ ★

▪ End/results/score screen: time based scoring ½ ★

- Pause ½★
- High scores ★
- Options (sound, look at keybinds)★
- Credits ¼ ★
- UI animations ★
- Quick Start Menu ¼ ★

● Artificial Intelligence (AI) 6 ★

o Graph based A* pathfinding ★★★★

An A* shortest path algorithm runs on a graph. The graph nodes are coded so they can be placed and connected in the editor. The graph is directed, so that fall paths can be defined, and the jump force on edge node location can be set and visualized in the editor. The algorithm then finds the shortest path from one node (closest to pet) to another (closest to player click). The nodes are made so that we can manually edit all the possible locations the pet can go.

o Path following ★★

This is a separate AI system that uses the path from the pathfinding algorithm as input, and gives movement commands to the pet. This system is supposed to also detect parts of the path where the pet can get stuck, and act by jumping.

● (Web-Based) Game Analytics (GA) 6 ★

o Create your own system for storing data ★★

We got to find a service for a free remote server and learn how to use the service with Unity.

o Save relevant information from your game during play ★★

We got to determine what information is relevant and how to store it efficiently so it won't affect the game performance and we can access it easily.

o Collect and show highscores ★

o Create gamer accounts (with avatars) ★

~~o Save and share game states with others through social media ★~~

● Programming (PR) 9 ★

o Game Mechanics

- Moving platforms, pressure plates, levers, buttons, pulleys ★★ Added a star, maybe not difficult per item, but added everything up takes quite a lot of work.
- Time will be the score mechanic, measured for scoring ★
- Giving pet commands (Line of sight unnecessary) ★

Scripts that allow the player to select a location to initiate the pathfinding, and give visual indicators to the location that is clicked.

o Game loop

- FPS independent (use Time.deltaTime / Time.fixedDeltaTime) ★

- Player can load previous save, saves generated after completing level ★ ★

o Physics
- Use Unity's triggers to trigger interactive parts of the levels ★
- Use Unity's full physics simulation for all movement, collisions etc ★★

Schedule:

When?	**What?**	**Who?**
Week 3 25/11	**Adjust Core Project Document** **Game Design Document**	Shifra
	Prototypes building blocks for levels	Shifra, Alvin, Chen
	Implementing Petcommanding in player mechanics prototype.	Casper
	Player model + animations	Saki
Week 4 02/12	Finish lever	Shifra
	Finish rope swing implementation	Chen
	Build levels	Chen, Shifra
	Make stonewall model, Pet model	Saki
	Finish pressure plate, Continue with UI	Alvin
	Implement Two button system, Pulley system	Casper
Week 5 09/12	**Peer Reviews**	**All**
	Playtest level	Alvin
	Animations of pet	Saki
	Create level 3	Chen
	Continue with UI, dabble with 3D models	Alvin
	Make 3D models	Shifra

	Dabble with rendering settings, pick up key mechanic	Casper
Week 6 16/12	20/12: **Early Access Game (3 levels)** **Finish key mechanic and visualisation of path, render pulley rope** **(Moving platform) textures** **Get UI working, script count puzzle** **Finish 3D models, start level 1** **Finish level 3**	All Casper Saki Alvin Shifra Chen
Week 7 06/01	~~Create more levels~~ ~~Analyze test results and adapt levels accordingly~~ Add sound effects and music Add textures and create environment Add nodes to level 1 and 3 Finish Level 2 Update UI (add keybinds scene and quickstart guide)	 Shifra Saki Casper Chen Alvin
Week 8 13/01	17/01: **Beta Game Release** Create backgrounds and elements for levels Implement sound effects Improve level 2 and 3 Add nodes to level 2 Add decorations to levels	All Saki Shifra Chen Casper Alvin
Week 9 20/01	Improve pathfinding algorithm Update UI and Credits Add sound effects to pet and character Add story to game Make presentation Fix Rope	**Casper** **Alvin** **Shifra** **tbd** **Saki + Shifra** **Chen**
Week 10 27/01	28/01: **Release indie game** 31/01: **Final presentation**	**All** **Alvin, Casper, Chen, Saki**