Game jam log – Togetherness

16/02/2024 – 26/02/2024

## My goal

My goals for this game jam:

* Learning something new
* A game with simple graphics
* At least one level
* Around 5 minutes of playtime

## Game idea

Collect pages in a dungeon to complete a storybook. Together with a cat familiar you have to traverse the dungeon to collect them. Some spaces only a cat can get into, but a human is needed for unlocking places by using puzzles.

Once all the pages are found, an ending scene plays with the cat and the human reading together in a cozy house.

## Features

Fantasy village setting

2D

Pixelated

Cute pixelart screens when level completed/game finished

**Controls:**

* Human WASD
* Cat arrow keys
* Esc = open menu in game
* E = to interact (Human only)

**“Dungeons”:**

* Start of peaceful
* Get creepier/darker as game progresses

**Gameplay:**

* Scalable walls (human)
* Crawling in tunnels (cat)
* Progress saving per room/level
* Start menu
* Moving walls with other inputs (buttons or puzzles)
* Return to checkpoint in menu

## Game engine

|  |  |  |
| --- | --- | --- |
| ***Engine*** | *Unity* | *Game maker Studio 2* |
| **Installed?** | installed | Need to install |
| **Coding language** | C# | GML (like JS) |
|  | More options | Good for simpler games |
| **Learning** | Steeper learning curve | Easier to learn |
| **Tutorials** | enough | enough |
| **Example game** | Little Missfortune, Deepest Sword | Undertale |
| **Complexity** | Complex interface, lot of additional software | Easier to grasp interface, coding structure has problems |
| **License** | Free for students and hobbyists until project has earned $100K in the last 12 months | Free for non-commercial use |

I will be using the game maker engine because I don’t plan to make this project very big and I feel like with the time I have, GML will be easier to learn for this project. This is because it is apparently like JavaScript, a language I already know.

I did look into other engines, such as Unreal Engine and Love2D. However Unreal is a heavy engine for 3D games and would be overkill and Love2D uses a language called LUA that I don’t know.

## Notes file

✨ Done  
🌱important  
👀Need, but not nr1  
📚nice, but extra  
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✨Only cat can crouch (even smaller spaces, use down arrow)  
✨Only human can interact, human also jumps higher  
  
✨stand on button: open doors/move things  
✨Human open doors with levers (codes)  
✨Human push blocks that cat needs to get to page  
  
Collision/Movement:  
✨- scalable walls  
✨- tunnels/crawling  
  
Gameplay:  
✨🌱- progress saving per room/lvl (room\_done = true/false, ini file)  
✨👀- multiple levels  
✨👀- moving camera for bigger rooms per level  
✨📚- moving walls with other inputs  
✨🌱- menu screen on esc  
✨-- quit game  
✨-- return to start screen(room)  
  
Graphics/sound:  
✨🌱- animation action specific  
📚- adding music  
✨🌱- resolution  
✨📚- cutscenes  
  
Tutorials:  
\\ - transitions: Peyton  
✨- save & load: Shaun  
✨- parent & child objects: Shaun  
✨- menu/submenus: Peyton  
✨- pushing blocks  
✨- cutscenes/endings: Shaun  
✨- camera: Peyton  
✨- triggers, levers etc.  
✨- switches and levers  
✨- backgrounds: 1up  
✨- animation sprites: shaun  
✨- video files: shaun  
  
  
Final level ideas:  
- Start on opposite sides  
- Help each other get to the middle  
- Biggest puzzle yet  
- Have to figure out an unlock a code for the doors to open  
- Access a lectern with a book  
- End scene/video with togetherness and books

## Plan

Day 1 (16/02)

* Theme reveal
* research and brainstorming
* Learn basics ‘Game maker’ engine

Day 2 (17/02)

* Learning ‘Game maker’ engine (flex time)
* Basic Movement and Collision (back and forth, jumping)

Day 3 (18/02)

* Finish Movement and collision (scaling walls, crouching)
* Collect item mechanic & winning a level
* Dying & Checkpoints

Day 4 – 8 (19-23/02)

* Create dungeon(s)
* Mechanics for puzzles (interaction possibilities)
* Adding transition screens
* Start screen/menu screen
* Saving game

Day 9-10 (24-25/02)

* Graphics!
* Sound?
* Submit the product

Day 11 (26/02)

* Showcasing

## Progress Log

**Day 1**

*~4.5 hours*

Kick-off and theme reveal at 13.00. I brainstormed what kind of game I wanted to make and once decided started working out the idea. I made this document to log progress, write down plans and ideas etc. Game maker is pretty easy to understand, especially with the tutorial I followed for the basics (for all referenced tutorials/information see sources).

**Day 2**

*~4.5 hours*

Today the plan was learning movement and collision. I decided to use a mix of tutorials for RPG games and platformers in my game, because I want to have the game to view like a platformer but I also want to add some RPG-like features. I also refined a few of my controls, deciding what the Human can do but the cat can’t and the other way around.

Seeing as I finished the basic collision and movement, but still had time and motivation left I also made sure the player couldn’t leave the map. The player leaving the map was an issue I found while testing, I could move the sprites off of the screen and thanks to the gravity and lack of floor they would fall and “disappear”. I fixed this by placing walls around the map, I tried something that GML calls “clamp” but found it restricted the player a little too much in the map.

After that I started on scalable walls. After trying some stuff with the knowledge I had this far I couldn’t figure it out so I looked up another tutorial specifically for this. Then I wanted to prepare for tomorrow (crouching) by figuring out how to change hitboxes so the cat can fit through even smaller spaces by crouching.

**Day 3**

*~4.5 hours*

Started with working on the crouching mechanic for the cat sprite and realised I should look into resolutions once I get to the graphics. After the crouching was done, I continued with the collecting of the item that is going to be needed to win. The win condition of one level would be: *collect all the pages within the level* and the win condition of the game would be: *Finish all levels.*

The part where a collision destroys an item was easy. The part where once the item is destroyed the level is completed, not so much. For now, I have added that once all pages are collected, it restarts the game. I got started with the checkpoints, but haven’t finished them yet.

I also realised that I should look into parent & child objects, to make sure that code applies to ex. both the player sprites.

**Day 4**

*~6.5 hours*

I started with dying & checkpoints, which was a real struggle and I still only had it half figured out after multiple tutorials. The tutorial that I have put in the sources was in the end the one that worked best, however I kept respawning inside the floor. Which in turn, would render the player useless. I will be looking into checkpoints again later, for now the player will disappear and the room will be restarted.

I tried to make a camera with the ability to switch between following the two players, so I could make bigger rooms where you can’t loose one of them. The tutorial I watched (in playlist by Peyton Burnham) for the camera also explained tile sets, which will come in handy for creating a background later. I haven’t found a solution I liked yet, seeing as the ones I tried out didn’t work and I don’t like split screen. I will try again tomorrow.

I also watched an explanation of parent & child objects by Shaun Spalding (playlist in sources). And made an array of my wall/collision objects in order to not have to repeat my code a bunch of times and keep it cleaner. I made arrays for a few other things as well.

At the end of the day, I made the checkpoints but there’s still something wrong with setting the y coordinate so they still get stuck in the floor.

**Day 5**

*~6 hours*

I realised last night what exactly messed up my checkpoints, so I started the day by fixing those, then I went on to try again with the camera. After doing that, I went to make a menu. In that menu I wanted to be able to quit the game, restart the level and go back to the start screen (even though it doesn’t exist yet.). I have implemented some hotkeys for this already with escape (restart) and backspace (quit), but I want to really make it into a visible menu.

The menu works, but I can’t open it from the game yet, thanks to the game manager instantly redirecting to the next room. It redirects because the level is “completed” because the program sees no more pages to collect. If I put a page on the title screen the game gives me the error that the camera can’t follow the player. To fix this I’m going to make the camera see that there isn’t a player to focus on and focus on its start position instead. Something the camera does still do is show the outside of the room, which I would like to prevent at some point.

I have also set up the saving and loading of the levels, meaning that now once you close the game you can continue at the level where you left off. I have one problem which is that the checkpoints have started returning an error message because ‘*global.checkpointRC is not defined before it is read’*. RC in this case stands for Room Cat and the line that gives an error wants to check if an activated checkpoint is in the room. Usually this is prevented because the game manager sets the value to 0, however the game manager get initialized in room 1 and is persistent from then on. I fixed the problem by putting the game manager in the menu screen.

A new problem has arrived: The cat is no longer dying on the spikes, but still dies on the DeathZone. Checkpoints still work, but the cat doesn’t trigger a visual change by itself. After testing, dying only works if a checkpoint has been set (for both player objects). It turns out I was missing an ‘else’ statement to have them return to the start position if there are no checkpoints in the room. The *‘immortal cat’* problem and the checkpoints visuals are now solved. The checkpoint visuals were weird because I said ‘or’ instead of ‘and’ in a statement checking the room for the players checkpoints.

**Day 6**

*~4.5 hours*

Today I started with the different mechanics I want to use for puzzles, I am starting with the ability to push blocks. I want to see if I can figure it out by myself first, without a tutorial. When I had tried some stuff that didn’t work, I found a tutorial. I was close with my own tries, but not quite close enough to build the feature by myself.

After that I wanted to code in a switch/lever, so I could move walls with those inputs. Getting the lever to move the block was fairly easy. The block was not moving correctly, but it was moving when the lever was clicked.

**Day 7**

*~8.5 hours*

I started with trying to solve my weird moving block, by adding collision in a slightly different way and making the movement go up or down until it hits a wall. After implementing that, I started working on blocks that move up and down continuously.

When I made the moving blocks, I started running into the issue that parkouring on them like I wanted was really difficult in a bad way. The players kept glitching into the walls or the blocks themselves, making it practically impossible to get through the level. In the end, I fixed the platforms and the puzzles are of moderate difficulty.

I also fixed my resolution today, at first I had a resolution someone used in one of the tutorials for a more retro look with a 3:4 ratio, but that screen was quite small and I like the one I have now a lot more. I got this resolution from one of Peyton Burnham’s tutorials. I do now have to re-build my levels that I has this far, luckily that’s only 3 and the menu screen.

After that, I started with buttons that activate specific doors/blocks. I might also want to change my lever with the moving block to be specific at a later time. When I tried to add a second button, it still responded to the button for the first one being pressed and moves to the point that I have assigned to the first block. I will be returning to this problem at a later time because I cannot figure out the problem at the moment.

After taking a break, I rewatched part of the tutorial and found I had a piece of code left that the tutorial had removed. The buttons now influenced the correct blocks, but the points where they move are still incorrect. For going to the correct point, I need to specify the x and y of the desired point, but because they are the same object I’m not sure how to do that.

I ended up using a method that I saw in a moving one-way/jump through platform tutorial that used starting and ending points. I also decided to cancel the plan for transitions, because it will become a bit much along with cutscenes and it will save me time.

After that, I started on the last puzzle feature I want to add, a switch/lever puzzle. I did not finish this yet, but will continue tomorrow morning as it is getting late.

**Day 8**

*~3.5 hours*

I started with finishing my last puzzle mechanic, the switch puzzles. I have now finished my first lever puzzle, and can get started on the more graphic side of things. This includes cutscenes, background, tile sets, better sprites (+in correct scale) and sprites turning and animating correctly. Before that, though, I made sure I could use multiple levers in one room and finished level 5. I want more levels than 5, but ill add those later as that will just be putting different objects in a room.

After level 5, I realised that I wanted more checkpoints and death moments in the levels. But I decided to animate my player first.

**Day 9**

*~6 hours*

I started the day by finishing up the player animation. Then, after fixing a few tiny things, I got started on the graphics. Specifically the cutscenes and setting up the camera so it doesn’t show outside of the room.

I wanted to add multiple cutscenes at first, but have since decided to only do one after the final level. This is both because of time and also because I feel like it might take away from the overall gameplay. I made the ending text an animation in 2 separate rooms which play after the final level.

After the animation, I moved on to keeping the camera view inside the room. After some searching I found a forum question that was close enough to my code that I could easily implement it. I just had to remove the zoom and shaking as I don’t have those. Then I started on giving my sprites a make-over to have a bit more depth and be better on theme. At the end of the day, the only sprites I still need to do are my collision sprites (walls, blocks and spikes).

**Day 10**

*~10 hours*

I started the day with finishing where I left off yesterday, with the make-overs for my sprites. Only the blocks and spikes are left. The blocks I need to make sure are resizable, so I will have to make them with the ability to nine-slice. That makes sure the pixels don’t stretch when the block does but instead a pattern gets repeated.

After that I started on tile sets. I wanted to make every level based on a fairy tale so I need to make a variation of tile sets but I started with a standard one for things like lava, stone and grass. I ended up with 3 tile sets that I used: standard, stone and castle. At fist I wanted to make my rooms themed after fairytales about togetherness, to play into the Jam theme more, but I don’t believe I have the time to make that many tiles and I’d want to make the puzzles actually relevant to the stories and I don’t feel like figuring that out anymore with the time I have.

When I finished all of the previous rooms, including graphics, I moved on to the final room. This room is meant to be the biggest puzzle and really require the two characters to work together.

A screenshot of a video game

Description automatically generated

This is a screenshot at the start of the process of building the last room.

01010100 01001111 01000111 01000101 01010100 01001000 01000101 01010010

Above stands the binary code for TOGETHER, I want to work this into a solution to a switch puzzle. I will be doing this by putting every letter in binary except for the Es. The code that makes up the E will be the way the levers need to be set for the big door. I did realize when explaining to my family how the last puzzles worked that I need to add another hint that E needs to be put in there. So I’m putting a big E into the wall, just like how I added hints to understand the 0/1 values linking to the position of the switch in an earlier level.

I decided to scrap the full backgrounds, thanks to time and how busy the view would become. So then all I still had to do was the ending animation. I am now finished with my game for the game jam, I just have to export and submit it.

I submitted my Game ~15 hours before the deadline, and worked on it for ~58.5 hours

## Sources

**Unity VS Game maker:**

[I Made the Same Game in 8 Engines (youtube.com)](https://www.youtube.com/watch?v=MASAqbRMnaM)

[GameMaker Vs. Unity | Which is the best game engine? - YouTube](https://www.youtube.com/watch?v=KZ-crdfApU0)

[Little Misfortune - Wikipedia](https://en.wikipedia.org/wiki/Little_Misfortune)

[Undertale - Wikipedia](https://en.wikipedia.org/wiki/Undertale)

[Deepest Sword - PCGamingWiki PCGW - bugs, fixes, crashes, mods, guides and improvements for every PC game](https://www.pcgamingwiki.com/wiki/Deepest_Sword)

[Should I use Unity or GameMaker? | GameMaker Community](https://forum.gamemaker.io/index.php?threads/should-i-use-unity-or-gamemaker.101452/)

[Gamemaker Studio 2 Vs Unity | What Is The Best Game Engine (ilogos.biz)](https://ilogos.biz/unity-vs-gamemaker-what-to-choose-for-game-development/)

[GameMaker Vs. Unity | Which is the best game engine? (youtube.com)](https://www.youtube.com/watch?v=KZ-crdfApU0)

[GameMaker Pricing](https://gamemaker.io/en/get)

[Unity Plans & Pricing | Unity](https://unity.com/pricing)

**Game maker manual & courses:**

The game maker manual can be opened by middle clicking or pressing F1 when hovering over ex. a function. It includes explanations and how to use for the GML code language. They also have a youtube channel with a lot of tutorials.

[GameMaker Manual](https://manual.gamemaker.io/monthly/en/#t=Content.htm)

[GameMaker - YouTube](https://www.youtube.com/@GameMakerEngine/videos)

**Tutorials:**

I decided to pick and choose whichever tutorial seemed to fit best (information wise and time wise) from the playlists seeing as I didn’t want to make my game exactly like one or the other.

[Beginner's Guide to GameMaker (youtube.com)](https://www.youtube.com/watch?v=nBCDzE9MDbk)

[How to Make an RPG from Scratch in GameMaker Studio 2 - YouTube](https://www.youtube.com/playlist?list=PL14Yj-e2sgzySnBUlQLhq2VJXRLi66gFf) (playlist)

[GameMaker Studio 2 - Complete Platformer - YouTube](https://www.youtube.com/playlist?list=PLPRT_JORnIupqWsjRpJZjG07N01Wsw_GJ) (playlist)

[Game maker studio - Basics - YouTube](https://www.youtube.com/playlist?list=PLhvuXCmibF5rGtNHIDkqjS12fU079f8i6) (playlist)

[GameMaker Platformer 06 Wall Climbing - YouTube](https://www.youtube.com/watch?v=gB_yxLGcgJw)

[How To Make Collectables And Pickups In GameMaker (youtube.com)](https://www.youtube.com/watch?v=L76PpUvCn_s)

[Game Maker Studio: Checkpoints Tutorial [Platformer] (youtube.com)](https://www.youtube.com/watch?v=eqDpIVi1QCs&t=24s)

[GameMaker: Checkpoints - YouTube](https://www.youtube.com/watch?v=UpLjdGczscE)

[Game Maker Platformer Part 7 - Pushable Blocks (youtube.com)](https://www.youtube.com/watch?v=wUg61XP8_X0)

[Game Maker Tutorials - how to make blocks moving (youtube.com)](https://www.youtube.com/watch?v=7z19rmKZJD4&t=359s)

[Moving Platforms in GameMaker | Jump-Through / One-Way Platforms (youtube.com)](https://www.youtube.com/watch?v=m2K1dAtWxDs)

[Tigger, button, lever [Game Maker Studio 2 | Advanced] - YouTube](https://www.youtube.com/watch?v=r7Jd5ImorTo)

[How do I: Make switch puzzles? (youtube.com)](https://www.youtube.com/watch?v=PqXeahu6l6U)

[How To Export Your Game | GameMaker - YouTube](https://www.youtube.com/watch?v=bdKFVO7a3l4)

**Forum questions and articles:**

[Gml movement with WASD | GameMaker Community](https://forum.gamemaker.io/index.php?threads/gml-movement-with-wasd.21822/)

[What is the best way to make detailed hitboxes for stuff? : r/gamemaker (reddit.com)](https://www.reddit.com/r/gamemaker/comments/p2oh3s/what_is_the_best_way_to_make_detailed_hitboxes/)

[GameMaker - How to change sprites | GameMaker Community](https://forum.gamemaker.io/index.php?threads/how-to-change-sprites.22764/)

[How to end the game after the player has defeated all the enemies in Game Maker? - Game Development Stack Exchange](https://gamedev.stackexchange.com/questions/116448/how-to-end-the-game-after-the-player-has-defeated-all-the-enemies-in-game-maker)

[One variable to = multiple objects? | GameMaker Community](https://forum.gamemaker.io/index.php?threads/one-variable-to-multiple-objects.25657/)

[Make the camera switch from character1 to character 2 when I switch between them. : r/gamemaker (reddit.com)](https://www.reddit.com/r/gamemaker/comments/4ghkcx/make_the_camera_switch_from_character1_to/)

[Code for animation end | GameMaker Community](https://forum.gamemaker.io/index.php?threads/code-for-animation-end.46830/)

[game maker - GameMaker Studio 2 - Center + clamp camera on zoom - Stack Overflow](https://stackoverflow.com/questions/53038162/gamemaker-studio-2-center-clamp-camera-on-zoom)

[Uploading HTML5 games - itch.io](https://itch.io/docs/creators/html5)