

# Log book

For Capstone

Project title: Happiness plus 1

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# Introduction

This log book will be broken down into 2 sections. The first section will contain pictures from the log book that i used to do some planning and flesh out some project designs. It was being used from the Start of november to the current date.

## Section 1 Written Log Book

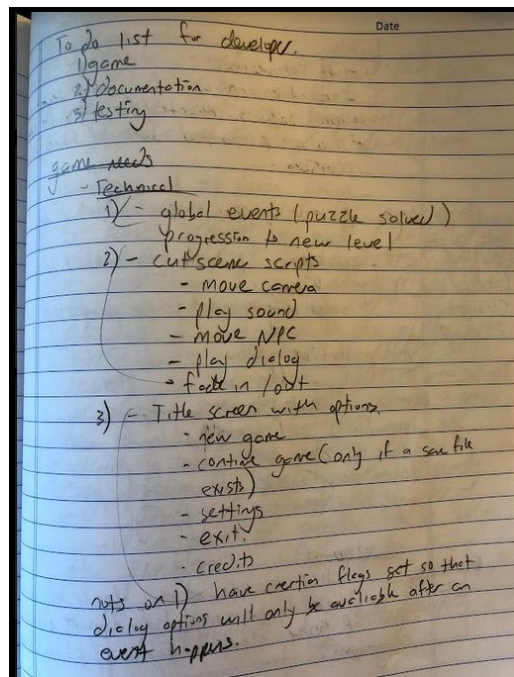


Figure 1

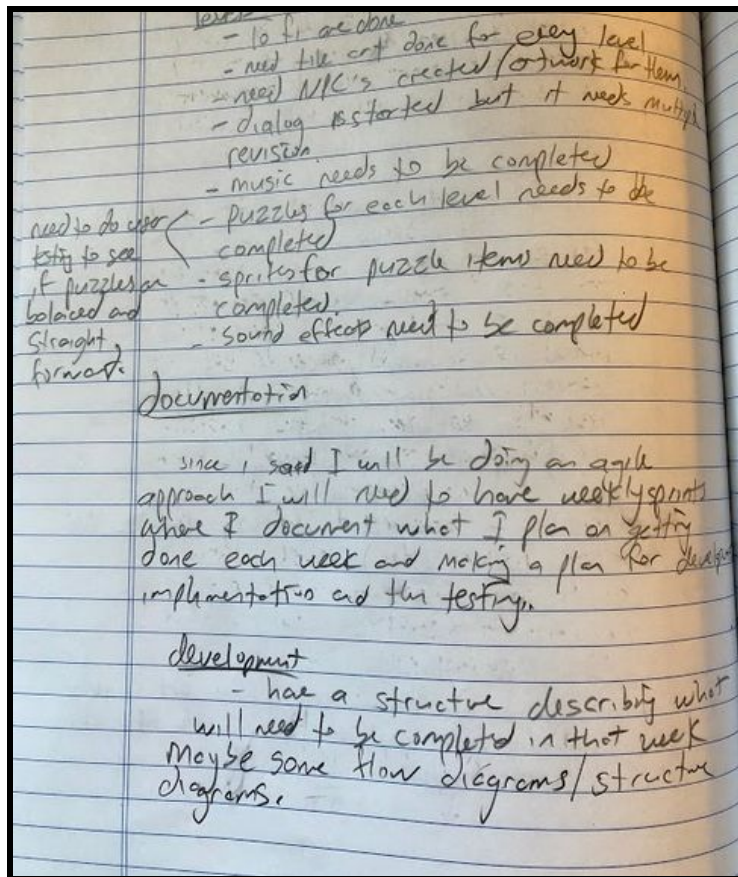


Figure 2

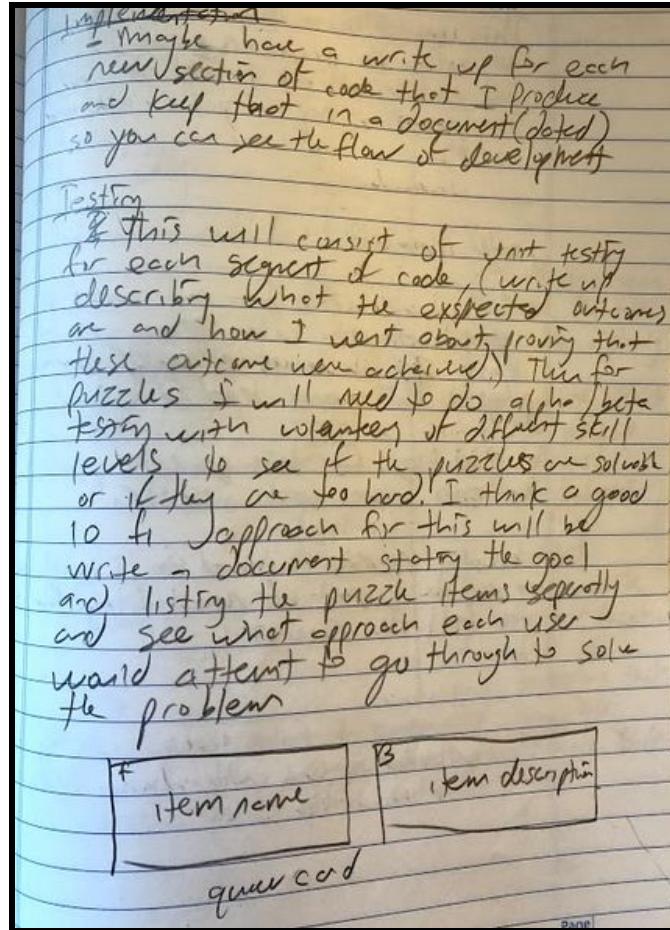


Figure 3

This would be a time consuming way to solve the problem but it should be easier to do this first and then implement everything to code and out.

---

other thoughts

I need a schedule for my week to keep activities where I can get at least 20 ish hours a week on this project this would lead to around 200 hours for this semester plus the ~ 300 from last semester.

creating music is hard so I will have a whole bunch of masked together shit to fill the quiet.

Figure 4

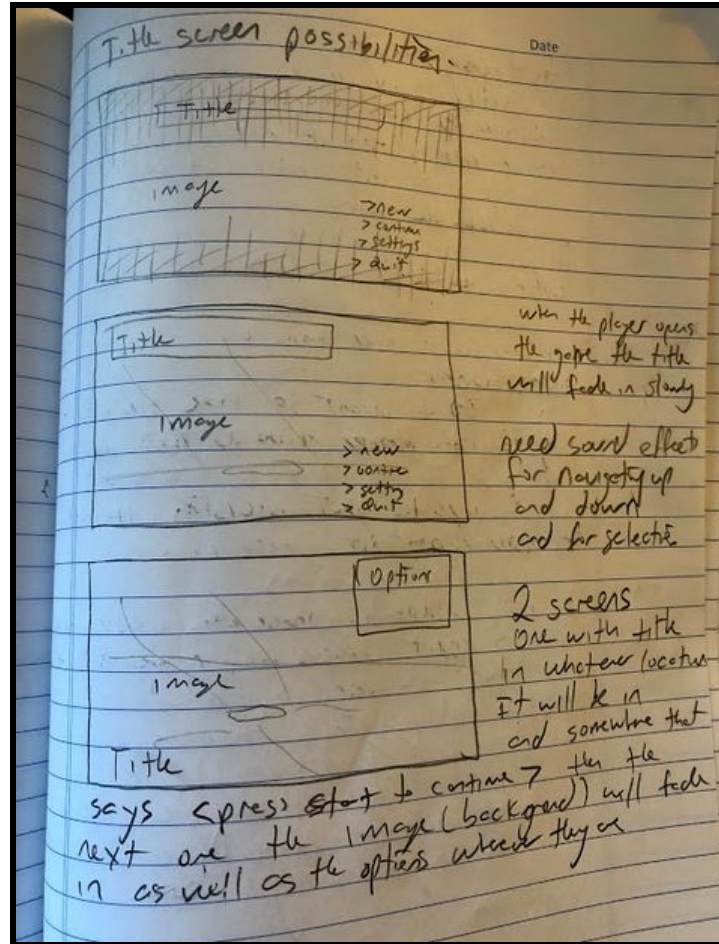


Figure 5



first play through  
have the system check if any saves  
are in memory then if not  
- go right into intro cut scene and  
start the game.  
if yes  
- go to title screen

Side thought  
- do I want to have the ability  
to let the player choose their own name?  
if yes then I need to figure out how  
to incorporate that decision into all of  
the dialog options  
possible solutions  
- global variable, each dialog  
is split where the name is and  
then the var is added in  
exmp Normal string: "How are you today, you  
look good today"  
Split string: "How are you" +  
"global var playerName" + "you  
look good today"

Figure 6



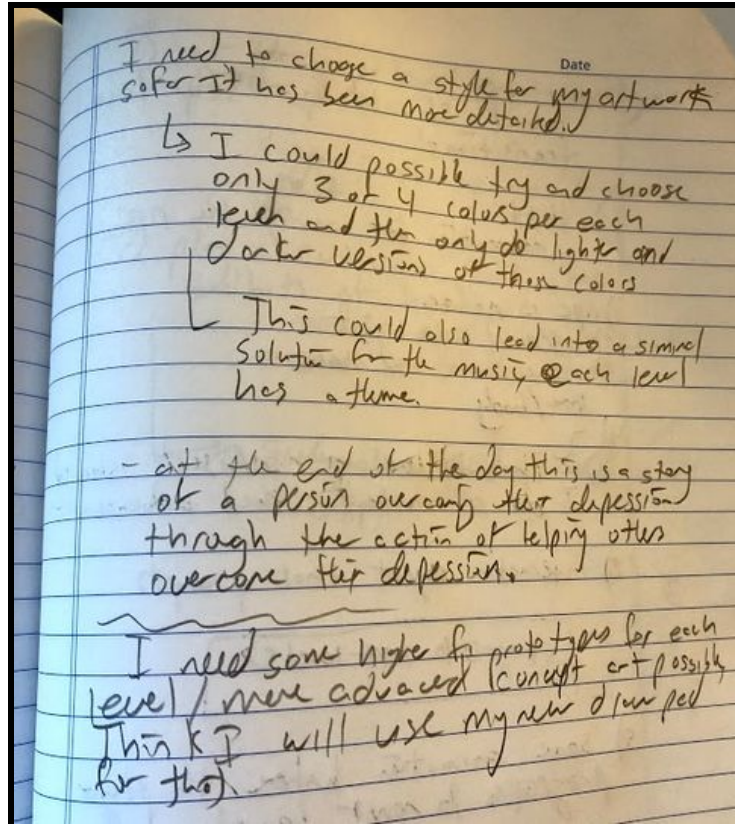


Figure 7

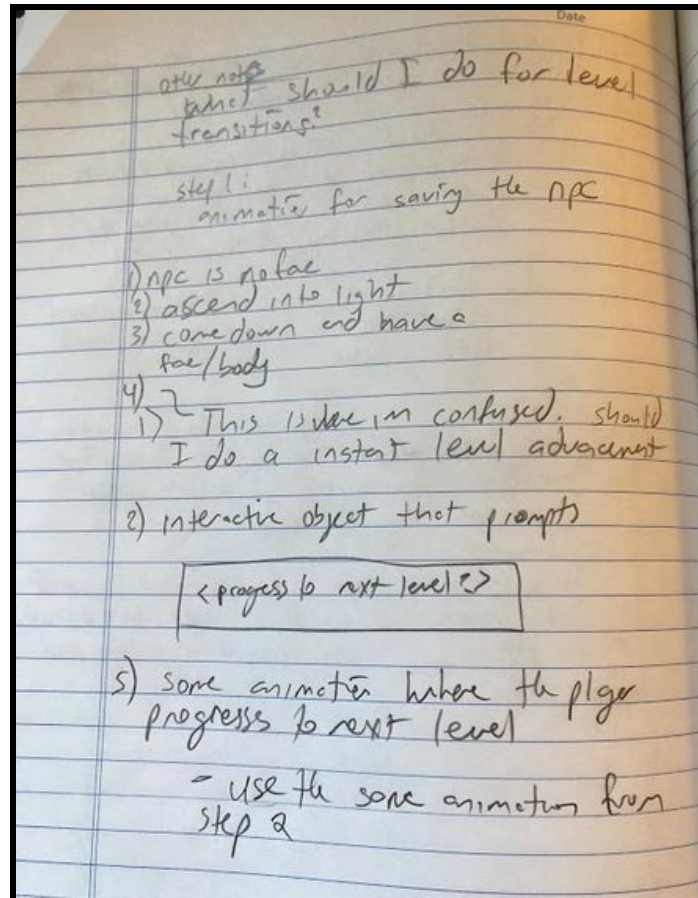


Figure 8

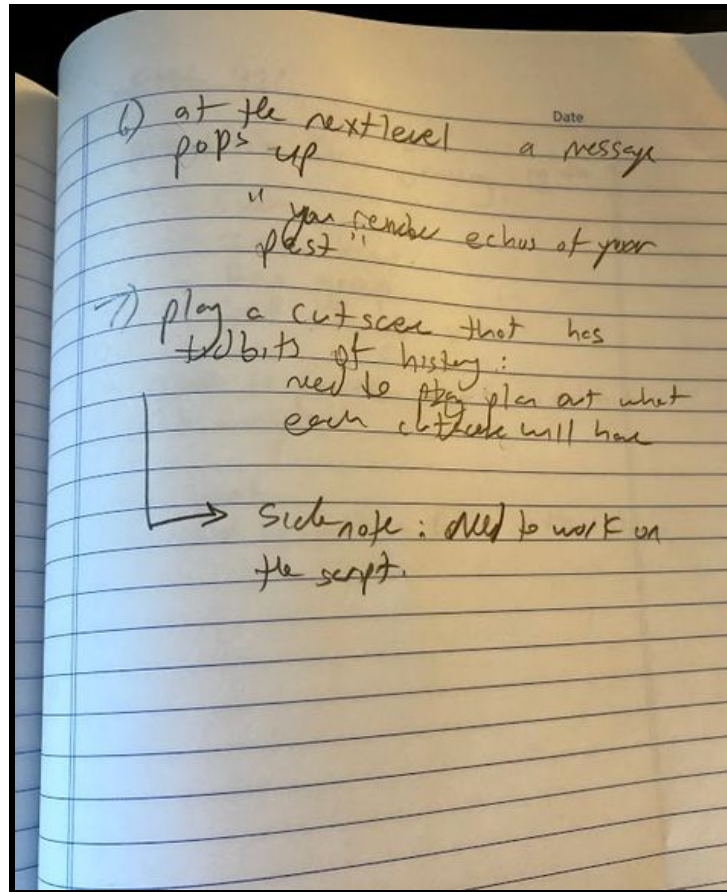


Figure 9

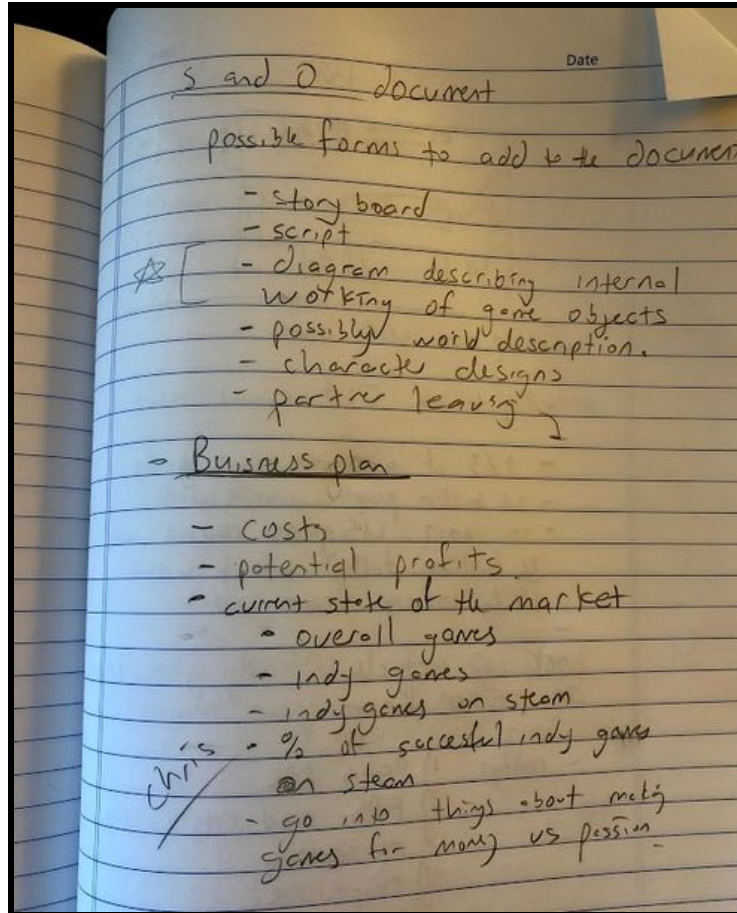


Figure 10

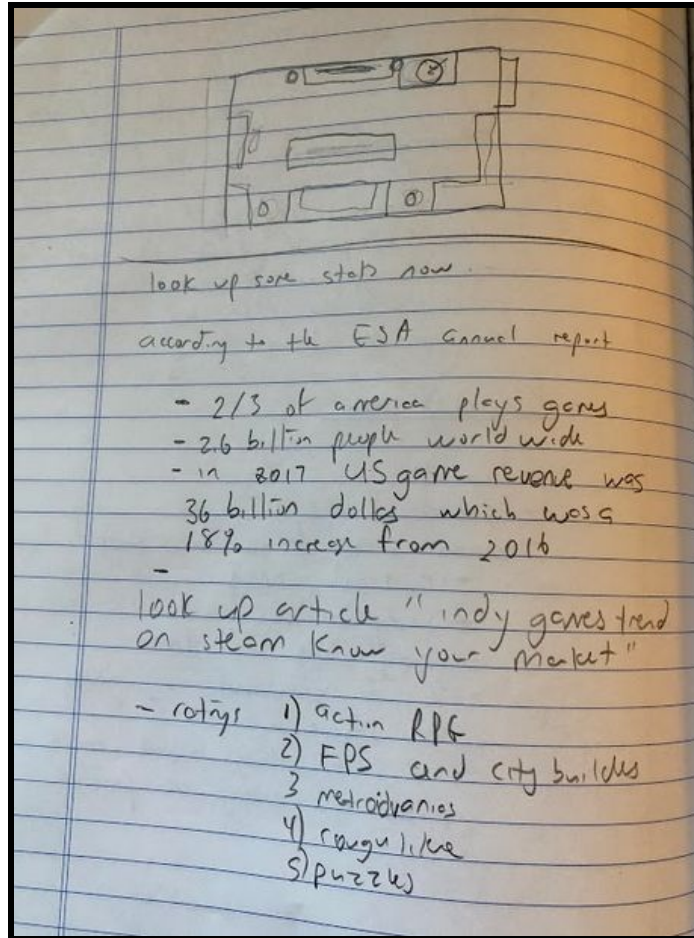


Figure 11

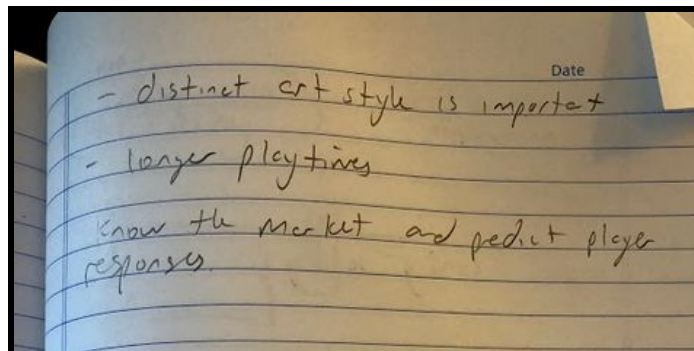


Figure 12



Coordinator cur = 100

end - config settings

stm - code setting.

---

notes for our note

⇒ working on title screen

1

create → fade in → fade out → delete

2

create → fade in → fade out → delete

Figure 13



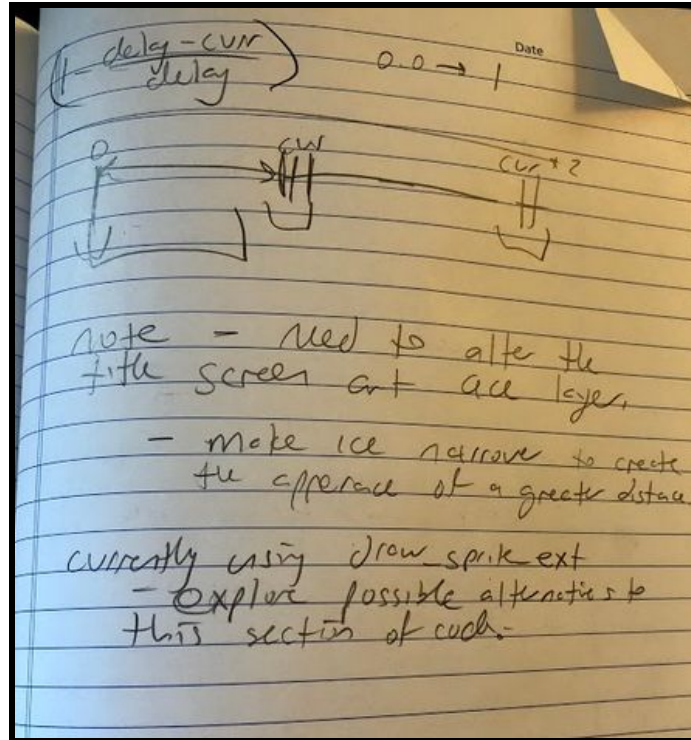


Figure 14

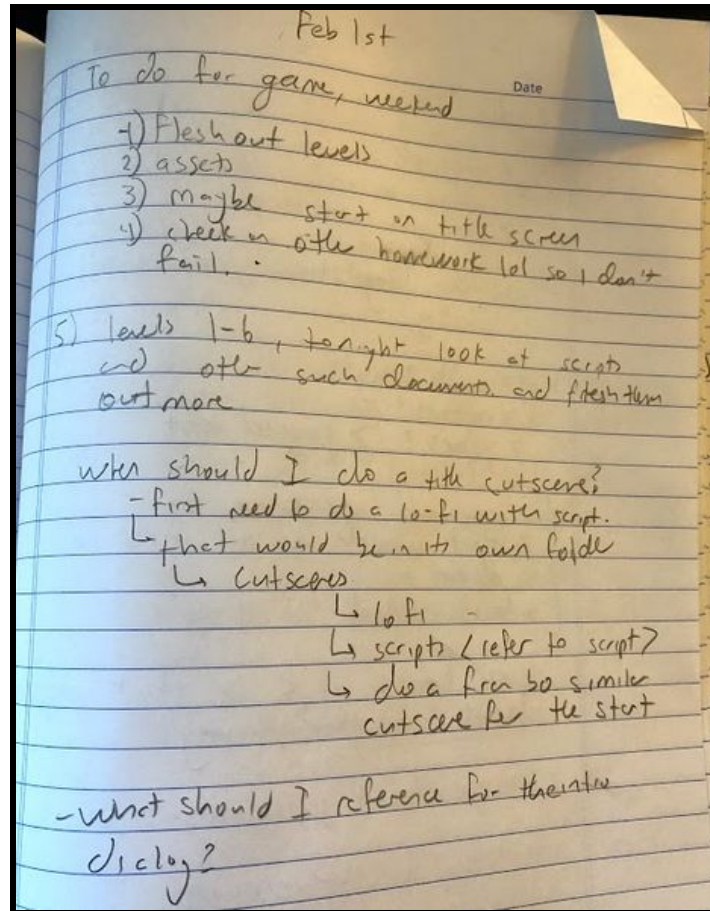


Figure 15

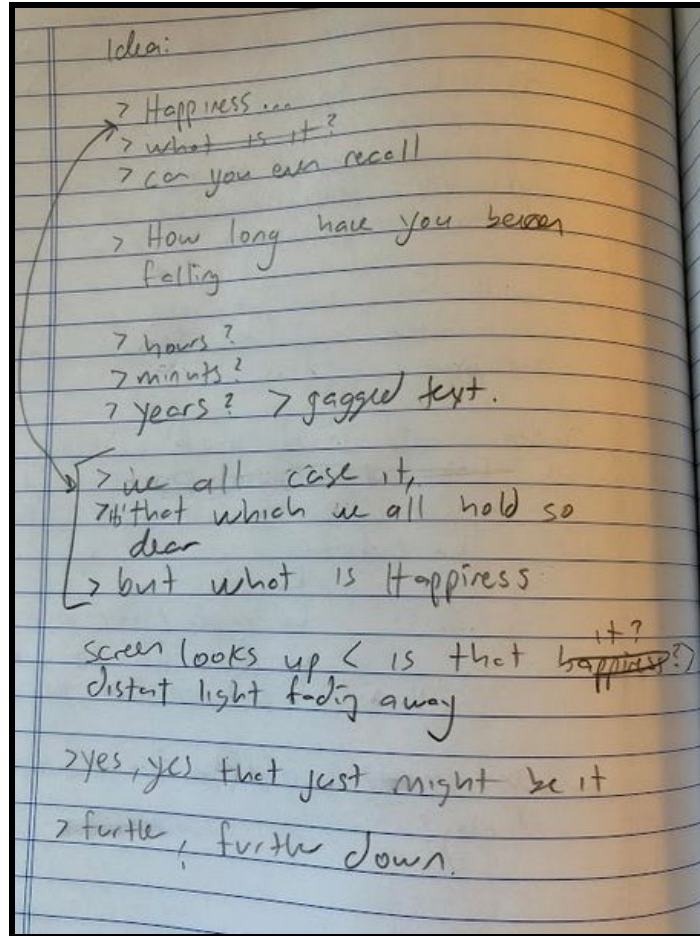


Figure 16

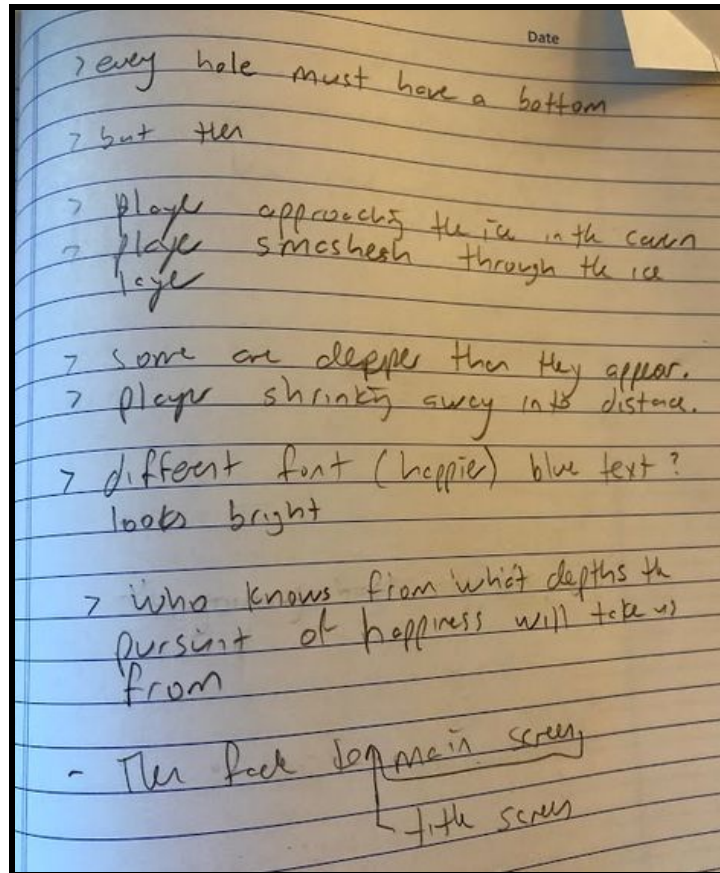


Figure 17

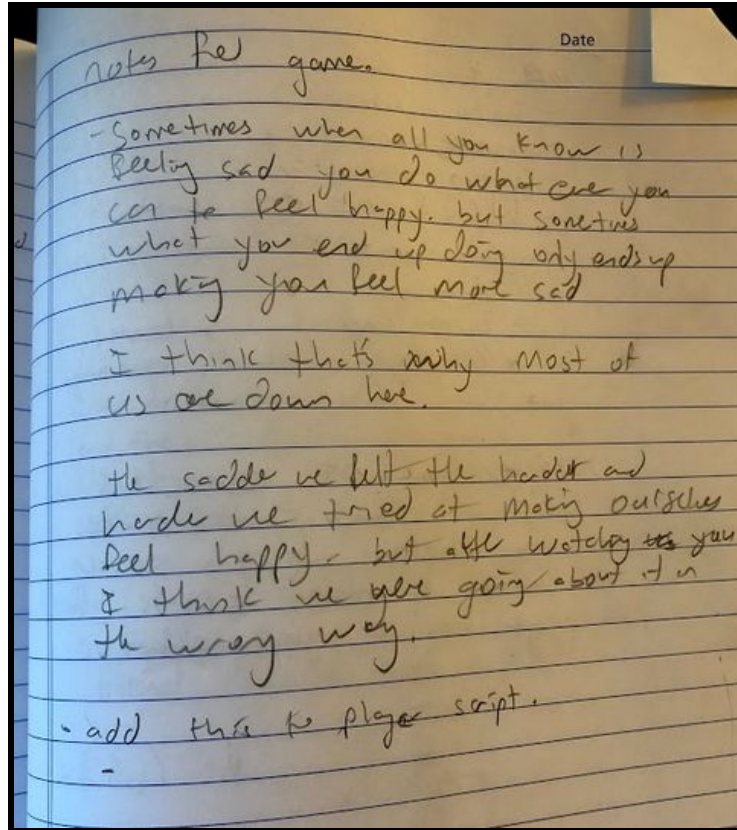


Figure 18



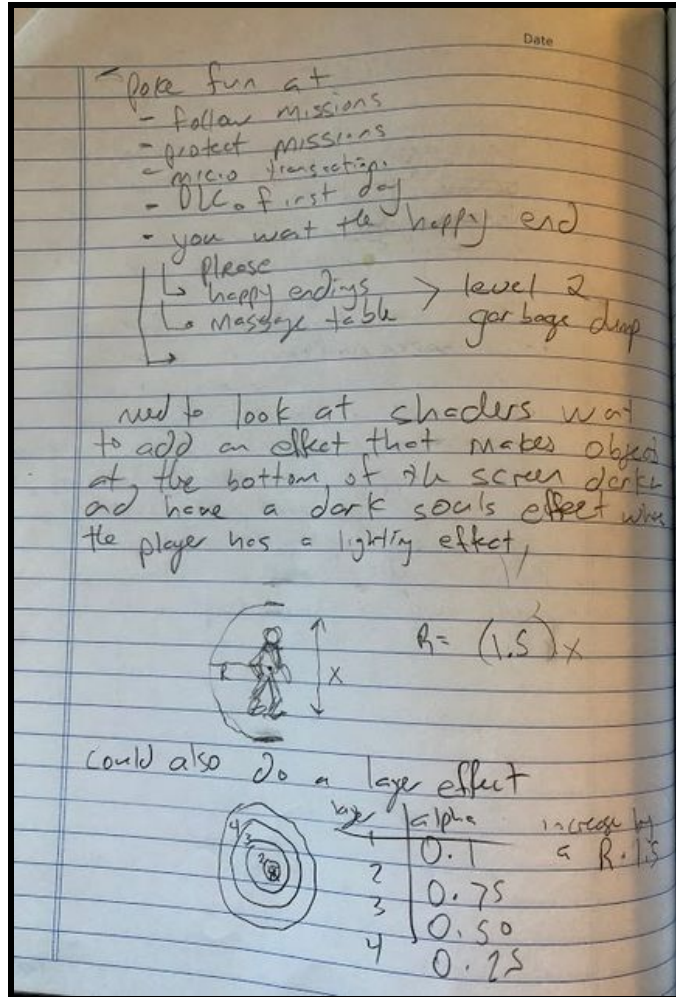


Figure 19



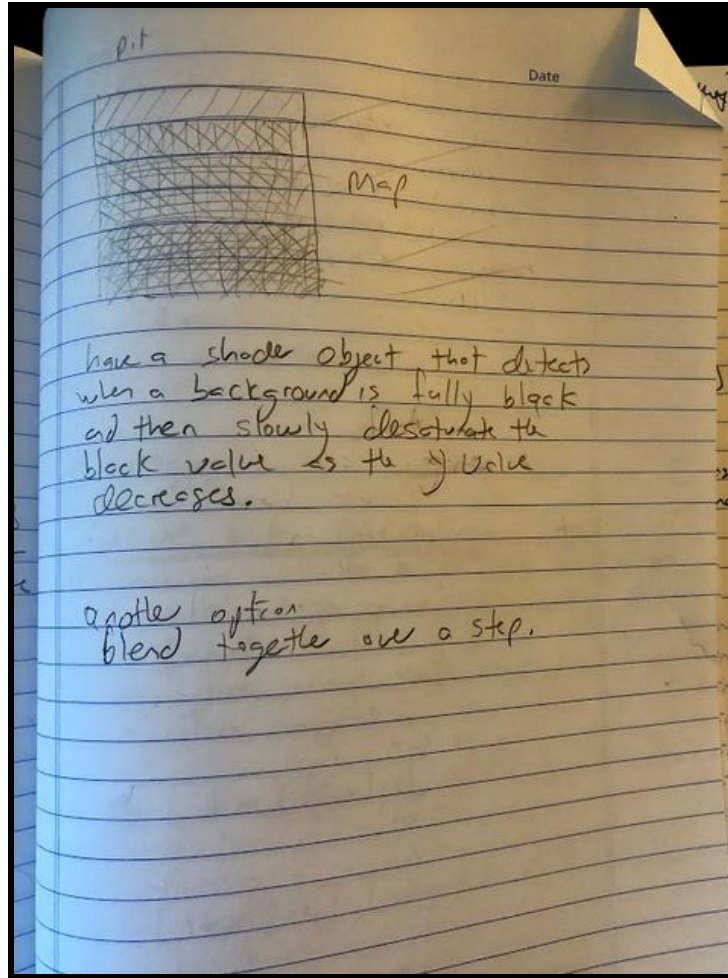


Figure 20

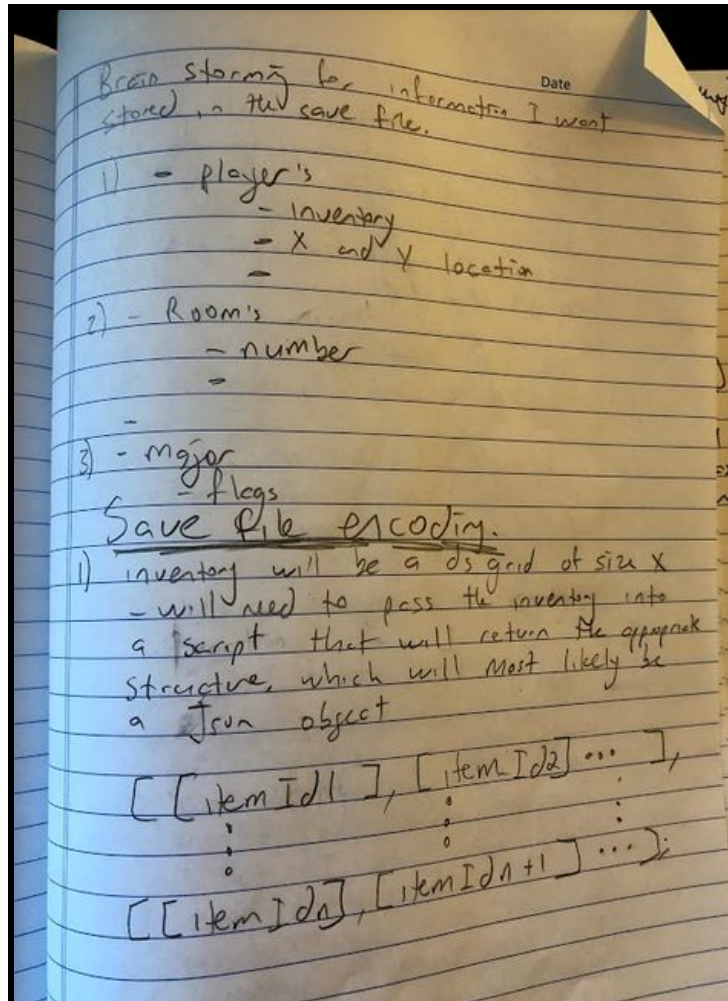


Figure 21

Date

Using this system I will be able to then use functions like `ds.get height` and `ds.get width` to find the dimensions of my returned object. To use these functions, I will need to send my object as an `ds-grid`.

The first row of the player information should be something along the lines of

```
[[player], [inv-rows], [inv-columns],
 [ "oo inventory information ooo" ],
 [playerx], [playery]]
```

The rooms object will be:

```
[[rooms], [room-Id]]
```

Flags will be similar to the inventory where I will pass an object containing all global flags to a script and from there if the flag is true then the name/id of that flag will be sent to a `ds-grid` and only the flags set true. So Hackers like guins won't be able to go in and set flags from false to true.

Figure 22

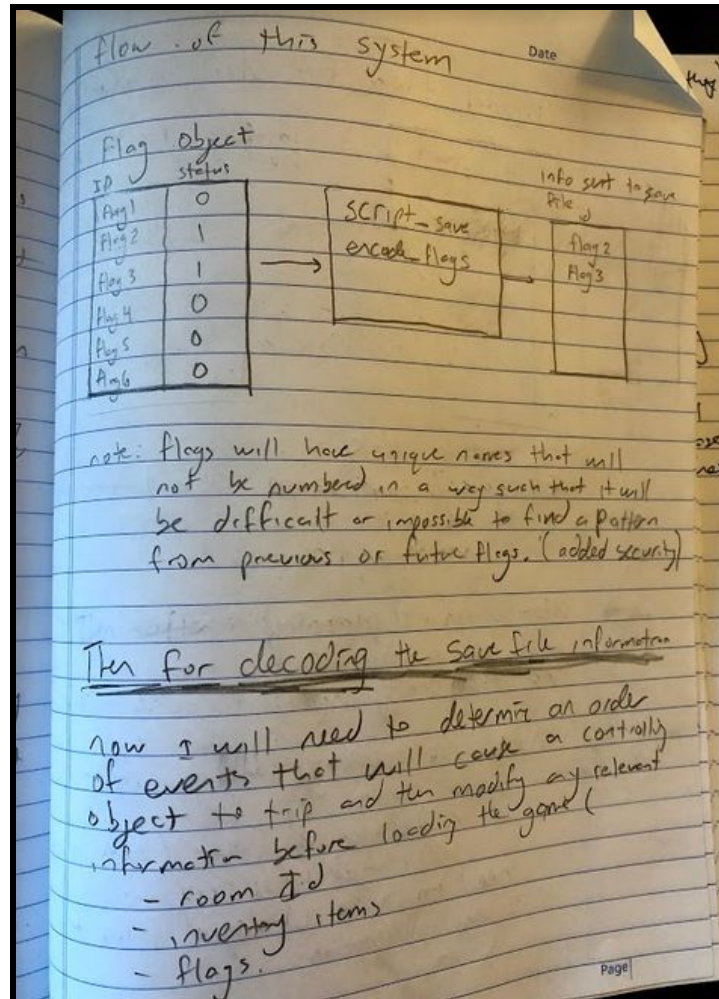


Figure 23



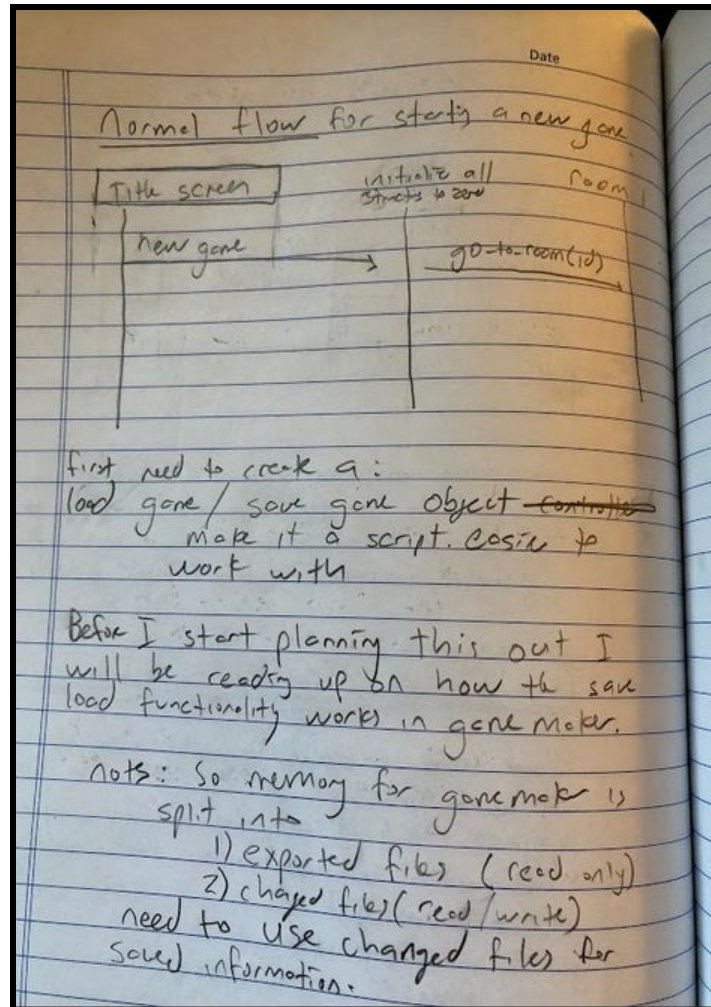


Figure 24

The first step when ~~loading~~ saving a game is to use  
Date  
Directory = creat(directory\_name);  
However there is another solution that involves saving and loading outside of the sandbox.  
after looking through some stuff I could do this  
ds\_grid → json\_encode → MD5 Hash  
→ ini file Then this ini file is used later to check the validity of the json file. IOL This would only be used for communications with a server.  
But from this I think a good way to proceed would be to put all my information into a ds\_map then use the json\_encode function to create a string to be sent to a file.

Figure 25



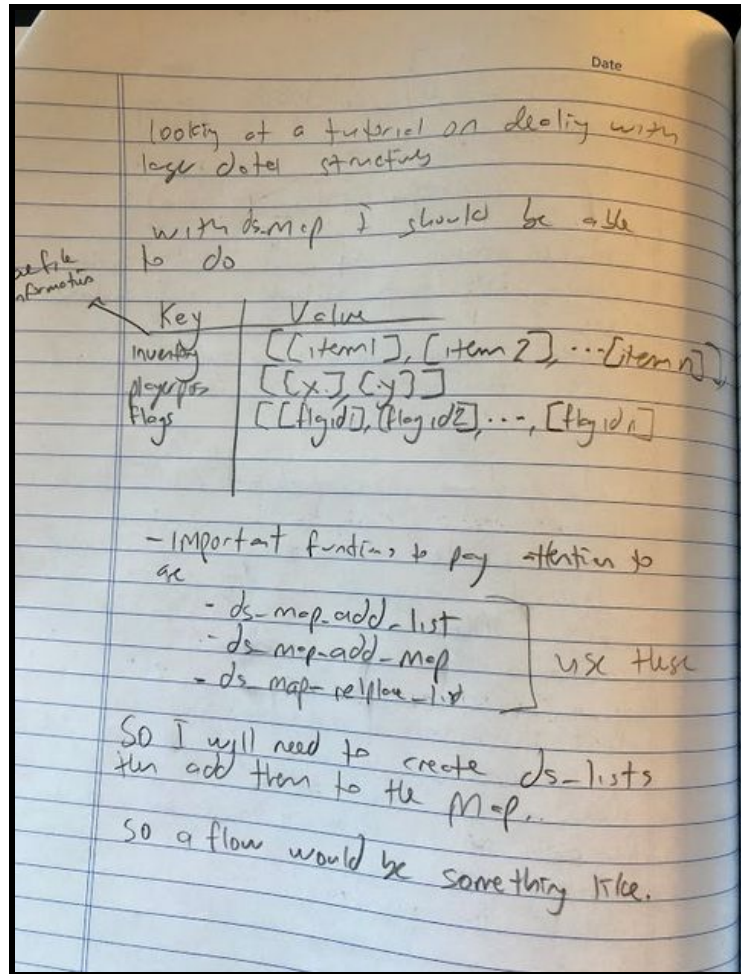


Figure 26

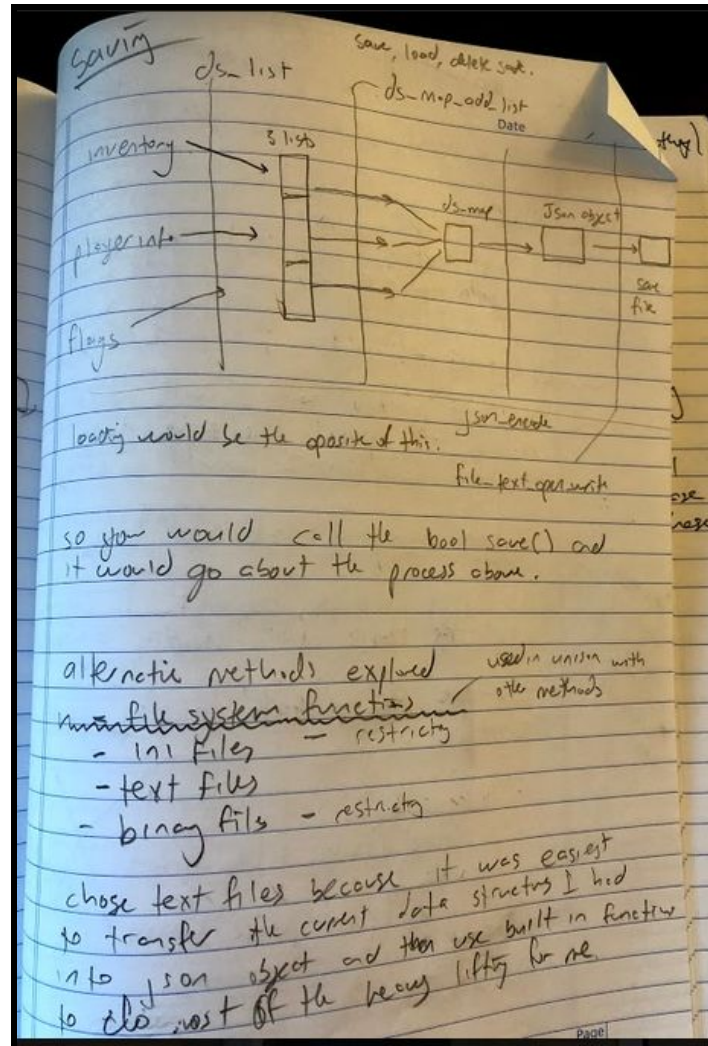


Figure 27

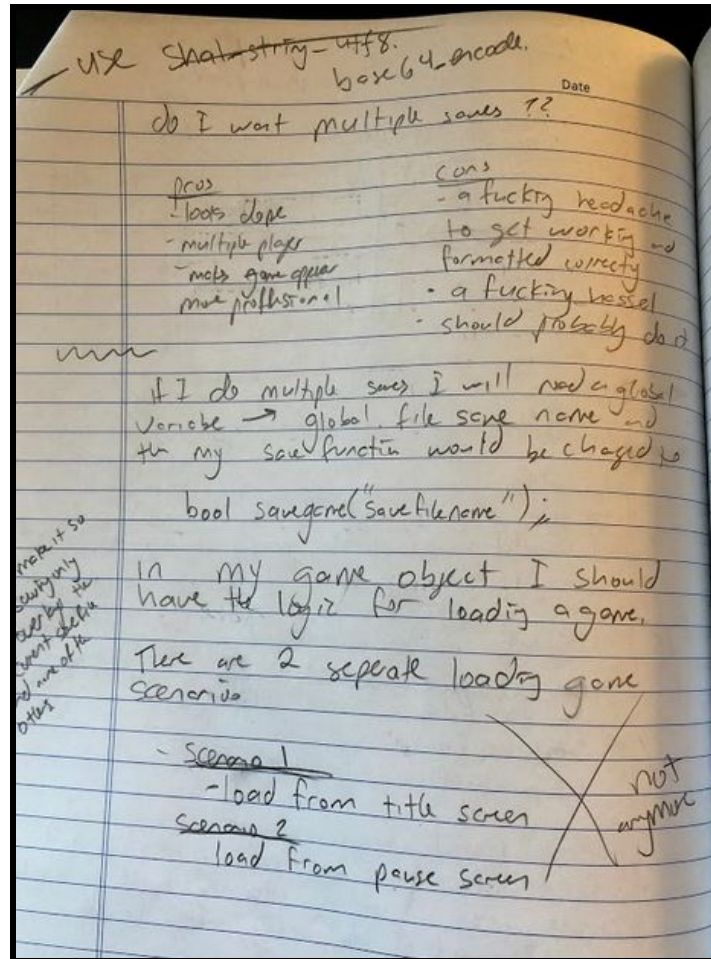


Figure 28

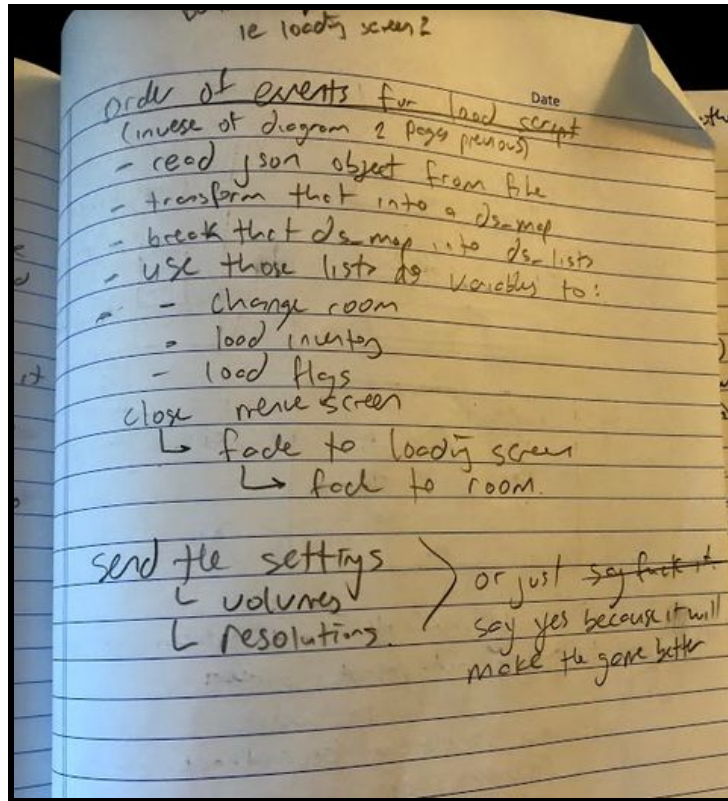


Figure 29

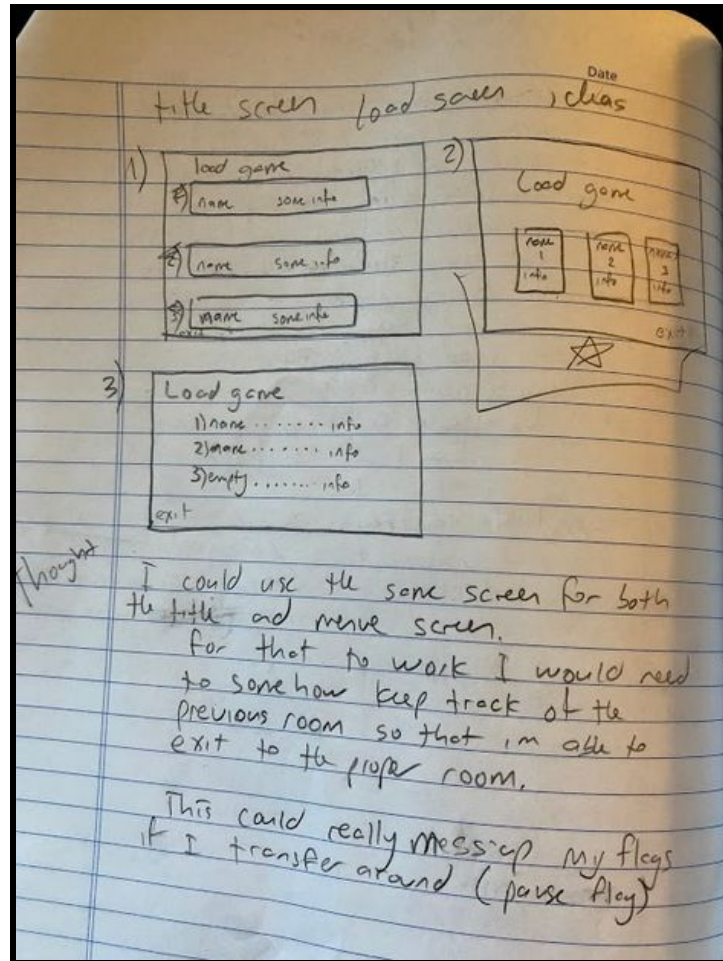


Figure 30



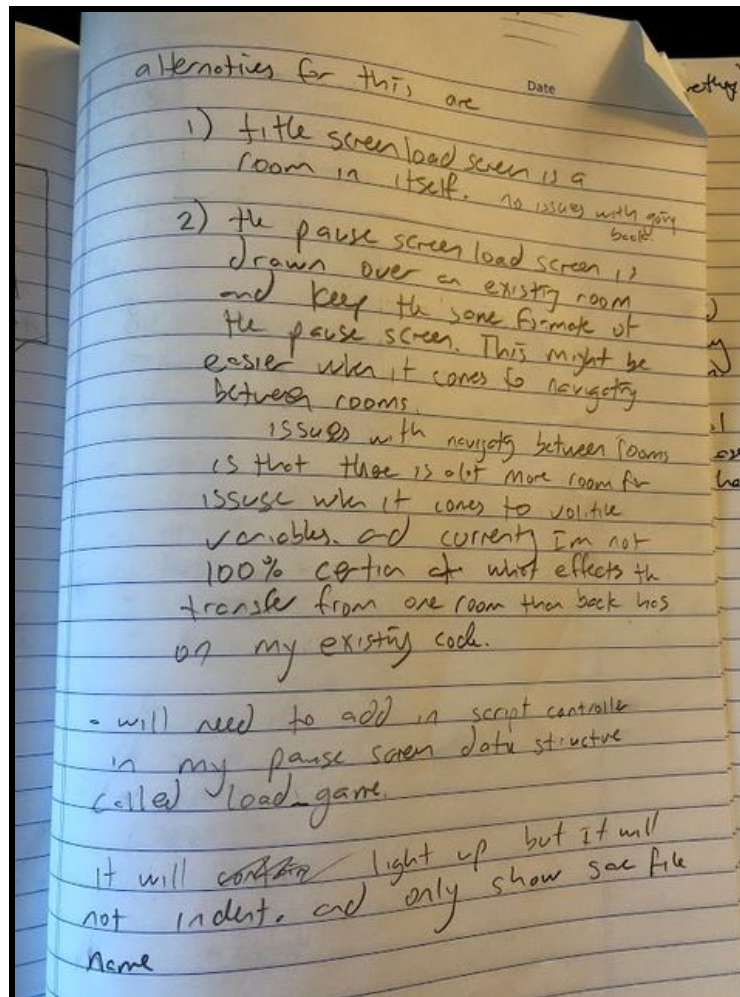


Figure 31



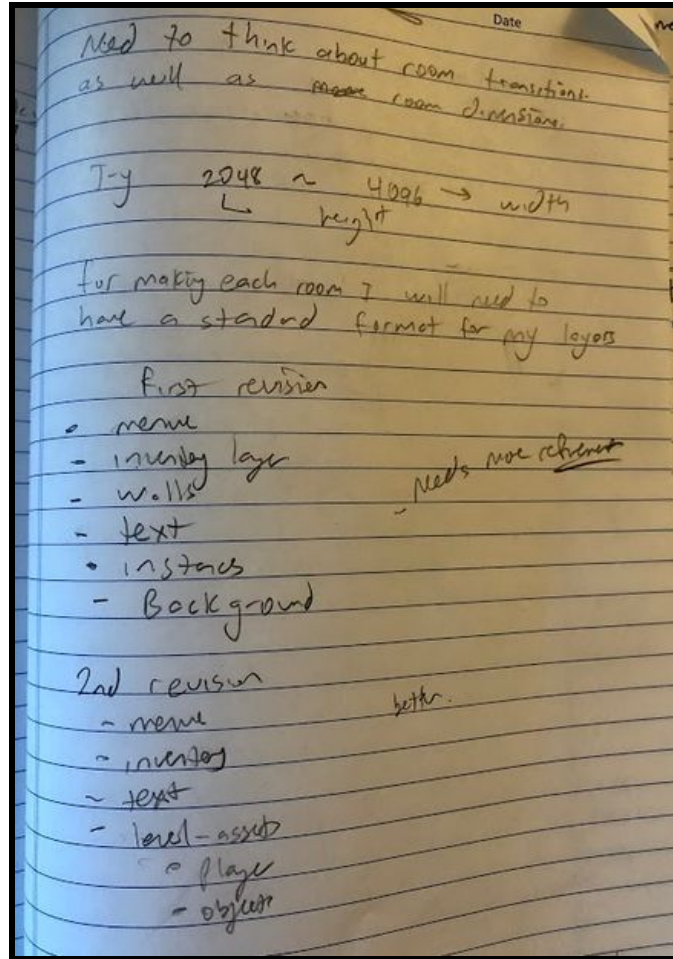


Figure 32

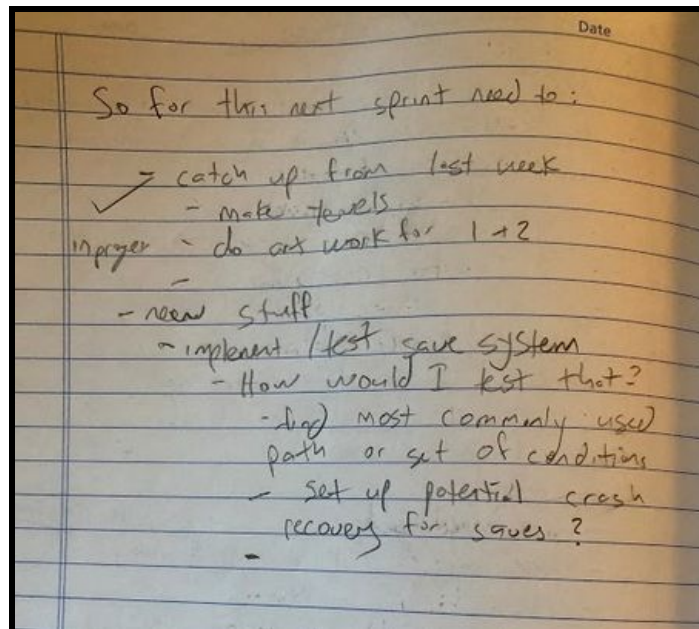


Figure 33

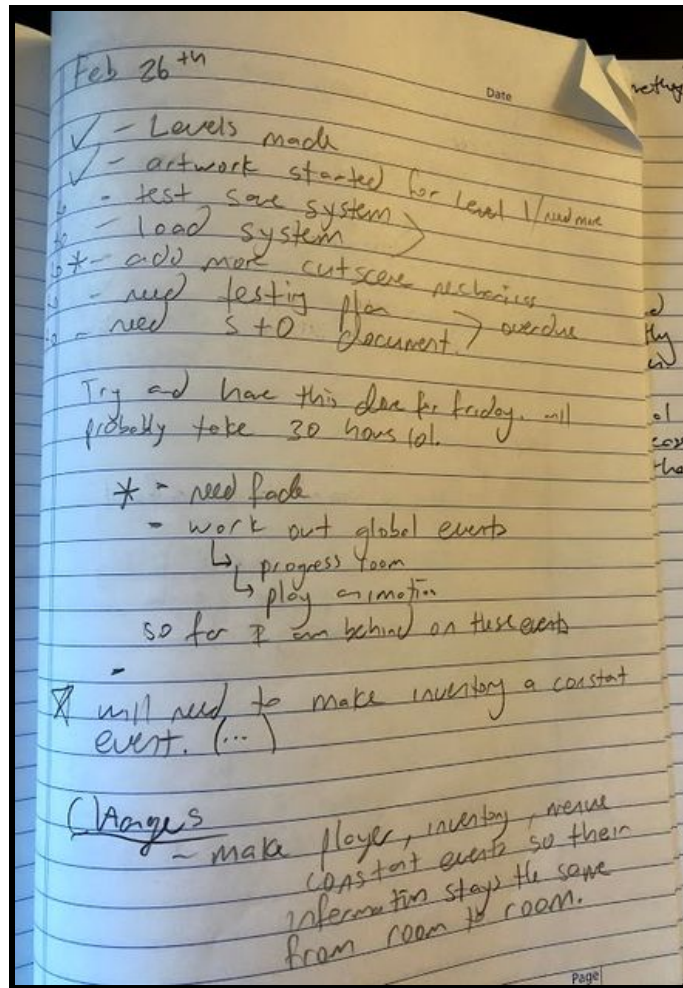


Figure 34

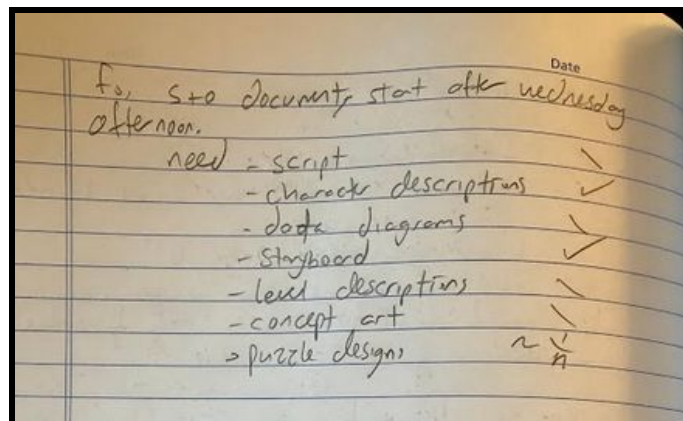


Figure 35

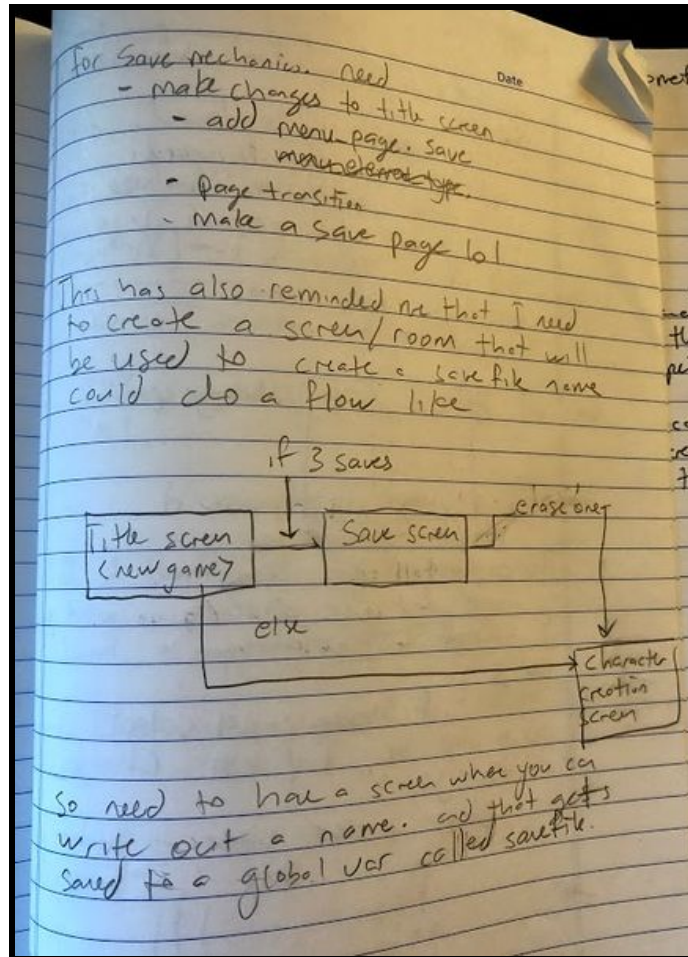


Figure 36

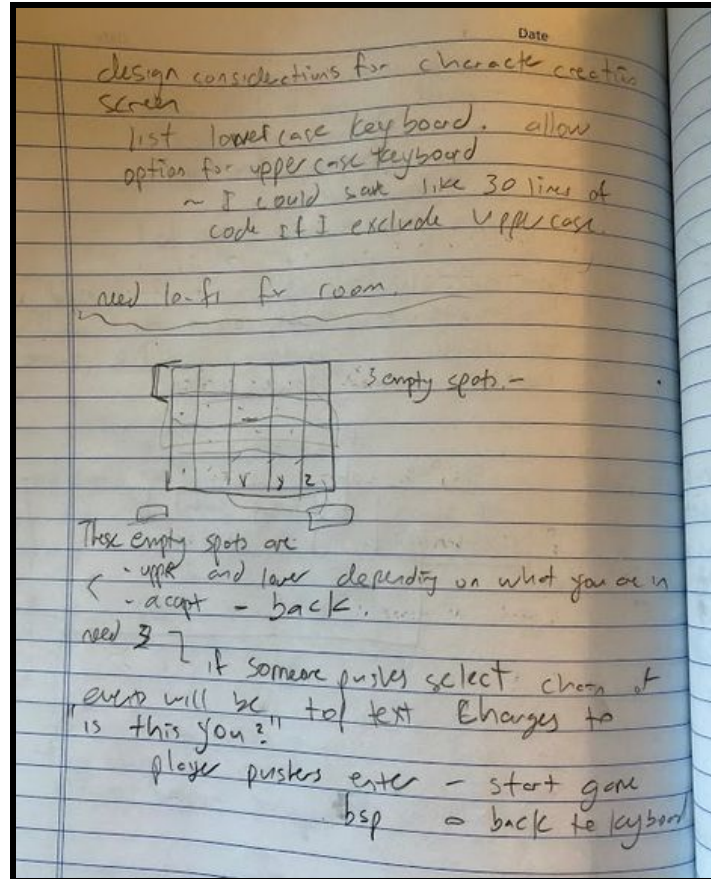


Figure 37



need DS Get width and string width  
 $(width/2) = (Stringwidth + DS Get width)$   
 a is written over b  
 272 need more cases for step  
 262  
 6 empty spaces  
 3 of them will be buttons  
 L or upper / Back  
 Back upper accept

Figure 38



Testing  
 - any automation tests?  
 - could get a npc object with a Hella janky movement controller

order of events  
 1) enter room with (debug obj)  
 2) start in top left corner, check perimeter to see if any locottas to clip through side wall.  
 - set max speed = chase framerate

Wait.  
 - Most of the events in game maker are limited to what the fps is set to (30fps) for my game. If I was to build an object to check collisions it would be slow. I would ideally want an object that runs at CPU speeds so I would be able to test rooms in mili seconds vs minutes.

- standard code that is executed take place in the step event (executes once per frame)  
 - I could get greasy and bypass

Figure 39

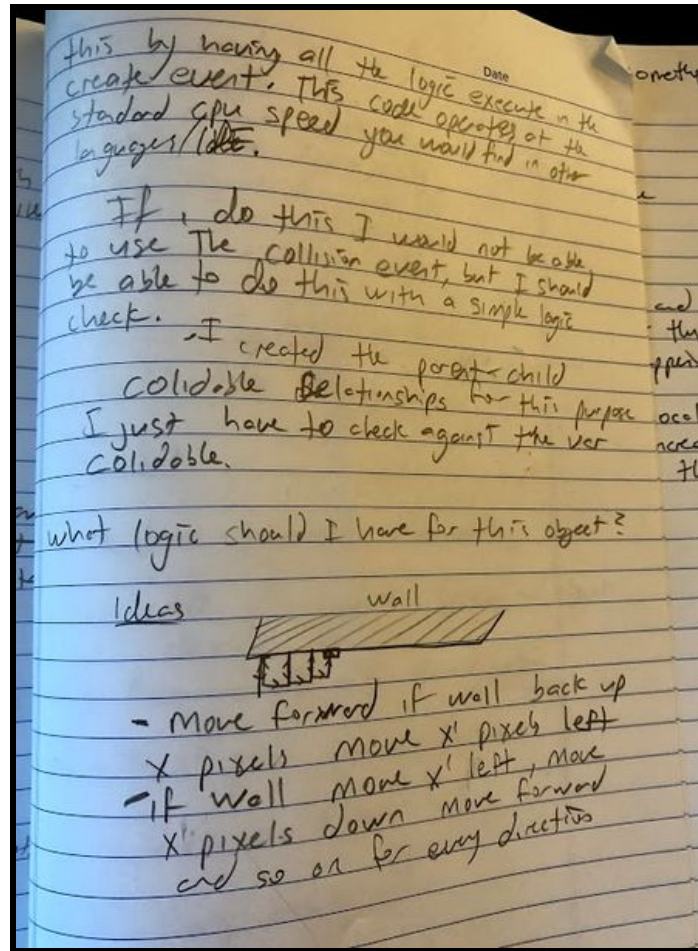


Figure 40

## Section 2 OneNote Development Log Book

The following section was notes taken during the implementation of the designs and during weekly sprints. All these notes were taken in a oneNote document.

### Notes 1

September 17, 2018

5:21 PM

Today i worked a bit on the intro cutscene and some organizational stuff

List of things to do

1. Story needs to be fleshed out some more
2. Mechanics need to be finalized

3. Art work needs to be done
  1. Sprites
  2. Backgrounds
4. Implement 2d/platformer/topdown
5. Music needs to be done
6. Game needs to be slip into chapters

Start 5pm -

Its now 645, my pixel art program pyxel crashed and i lost all my progress. Gonna die

Was able to recover the picture and started working on the second image of the intro

Started to work on my project proposal

I've decided that I need to go back and change my current prototype into a top down style and not a platformer.

However I should be able to keep using the current sprites i have now and just freshen them up a bit

## Notes 2

October 20, 2018

11:54 AM

Goals for today: item interactions

Level 1 design completed

Also need storyboarding done

Currently the triggers for going to another room are built so that when the player object collides with a box then a new room is loaded that is connected to that box.

Now i think i will have it so that there will be a object that the player will have to interact with to teleport to the next level. But to navigate within the current level i will use a boundary method.

- Map is size x by y and broken up into n parts, navigating within a part the camera will follow you around. But once the player goes beyond the boundary of a part they will be teleported to another part of the level.

I did this because it will be easier to keep track of level and using a collision event for all the in-between room movement will become cumbersome as the game becomes more complex and larger in scale.

## Notes 3

October 21, 2018

3:12 PM

Today goals

- Finish a working porotype of item integrations and managing the inventory of items
- work on script, get at least 1 more level done
- I now know how to do signposts, so maybe get a working prototype inserted into the game

Coming up on the Gantt chart

Level one needs to be completed

Inventory

A working puzzle

Item combining

Note: when making sign post and want to change what the text is in the room editor, make sure to change the text in the creation code tab and not in the variable tab.

## Notes 4

November 3, 2018

11:41 PM

Last weekend Bryce and i spent 4 or so hours working together on game maker

He worked a bit on sprites and i worked a bit on the story board

That was the weekend of the 27th

Spent around 5 hours this week working on the storyboard

As well today i worked on:

- main character sprite
- pixel effects on the main character
- item interactions
  - Now the character can pick up items and a message pops up that says something
  - And then the item disappears
- Trying to get a grid of boxes to appear on the inventory screen,
  - Issues:
    - but so far that is not working,

- The item box objects are not being created so i need to look into what functions work best for creating object and then drawing them in certain locations.
- 

i might need to redo what i have done: right now i have a DS list created in the player object and then when a player interacts with an item that items id and name are added to the DS list. Then the inventory object draws a background over the viewport, next it is suppose to create a 2d array of inventory item slots on the screen that is 3 by 3 squares. It then passes in the information needed for the inventory item slot object to draw the proper sprite in its square. I feel that this should be a good way to display the inventory and crafting menu. But i will try to fix it in the morning with fresh eyes

Overall i worked from 1 - 12 today so 11 hours

Coming up on the gantt chart, level 2. but need to finish item interactions before that can happen and i need to finish level one.

Level one needs:

- To be doubled in size
- Populated with sprites
- Populated with puzzle items
- Walls/floors/backgrounds need to be finished
- Holy shit

Total number of hours spent working in the last 2 or so weeks would be approximately 25 hours.

## Note 5

November 17, 2018

11:42 AM

Got the inventory working and it will display the contents of what is in the inv\_ds\_grid





What i had been thinkin for awhile was to allow the user to navigate the entire page using the arrow keys, So they would be able to select any of the inventory slots or the slots used for crafting.

However after displaying the contents of the inventory to the left grid I believe that it will be easier (code wise) to only allow the user to navigate the grid on the left. And then allow the user to push enter on any of the items in the inventory and have an option appear that says "craft?"

If they push enter then the item will appear in the available crafting slot on the right side of the screen. As soon as both of the crafting slots are full the combine button will light up the user can either push enter to attempt to combine or push exit and go back one step.

Next step is then to create a `ds_grid` that contains two item ids that will result in a successful combination and the id of the item that will be created by combining the two items.

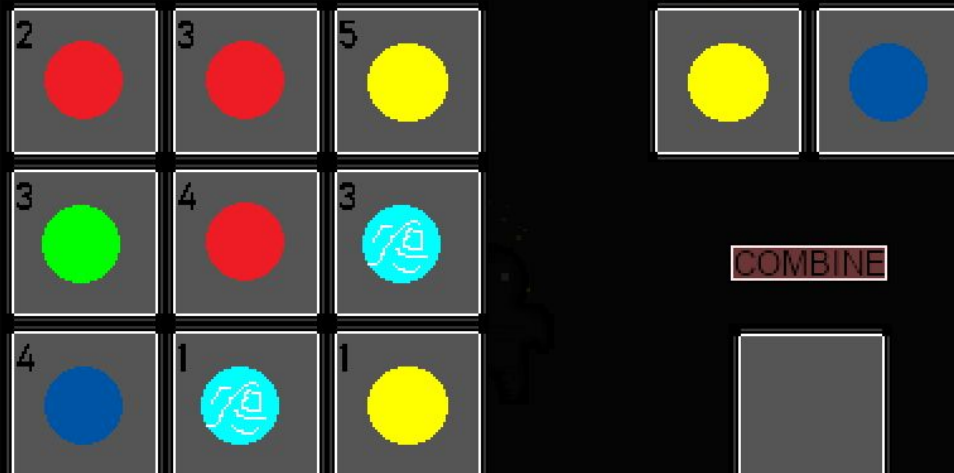
## Note 6

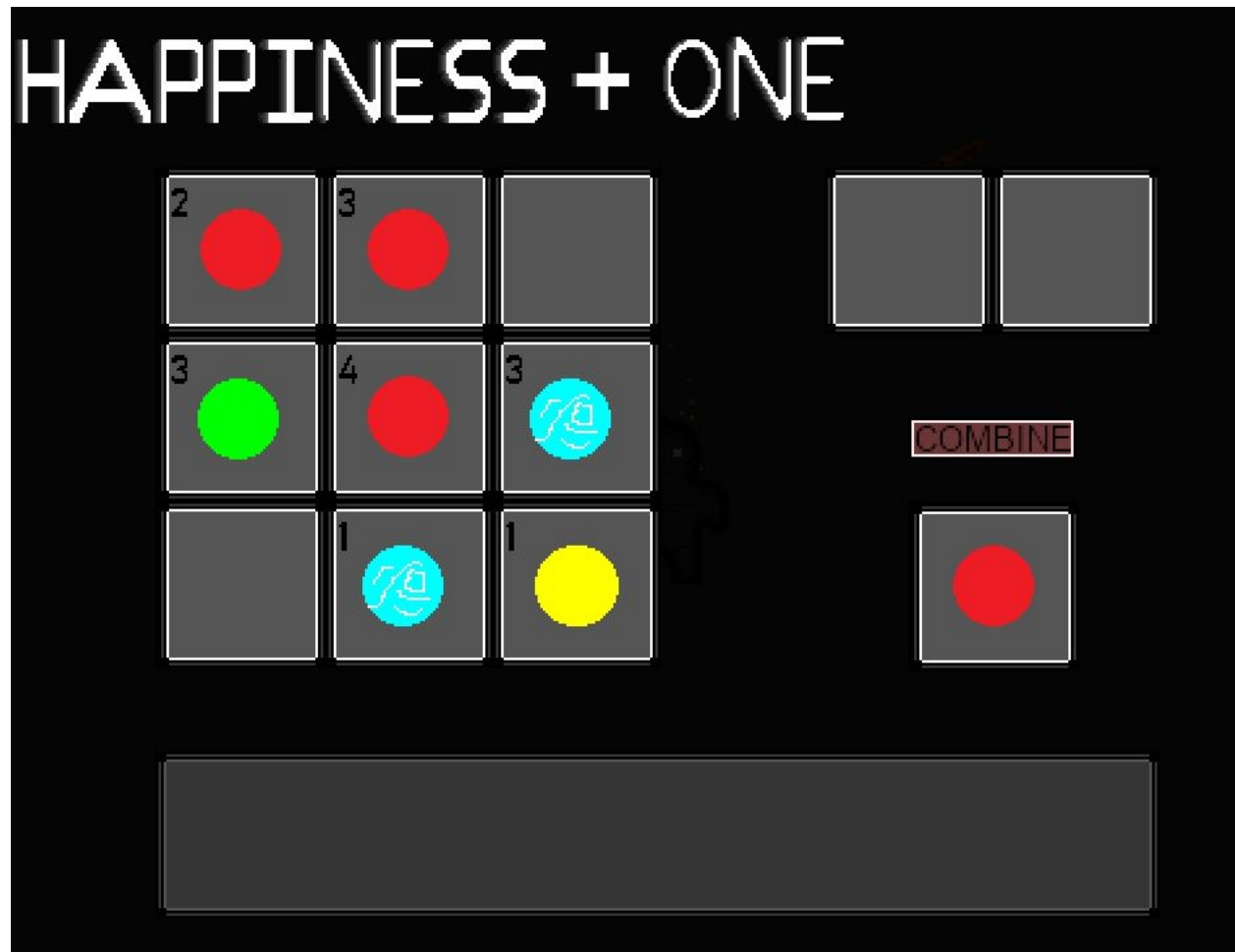
November 21, 2018

5:57 PM

Spent the last 3 days working on the inventory! Now it works. I can craft two items together and have a result display in the inventory box.

# HAPPINESS + ONE





Now the next step is to have the name/descriptions of the objects appear in the lower text box.

So the layout will look something along the lines of:

1)hover over an object in the inventory

<name> : <description>

craft?: press enter

2)new item is crafted

you have crafted

<name> : <description>

Next step I will need to have something happen where I will have a option that will say

- Use <name> ?

○ Options after this are:	○ Item appears in the characters hands
○	○ A dialog option pops up and says cannot use this item yet

Spent 8 ish hours working on this today on and off and around 10 hours in the last few days

## Note 7

November 29, 2018

5:57 PM

Been working on the project the last 3 or 4 days.

Have completed since last notes:

- Had to fix the crafting screen
- Crafting screen working now
- Created a textbox system that displays dialog
- Created a set of base characters and accessories
  - Did this in a way that was similar to how the inventory sprites were set up
- Created NPC objects and a NPC parent that contains all of the logic and drawing events

### BUGS

Description of the error/bug with the crafting system.

when crafting objects 4 and 5 the result would be 6 which was the expected result but when items 1 and two were crafted the end result would be 6 as well, the expected result was 3.

Description of solution.

The flow of what was going on logically was this:

1. Crafting slots are full of crafting slots
  2. Person presses enter
  3. Go into crafting phase
  4. Check data structure containing list of viable crafting solution and results
  5. If crafting slots contained a viable solution draw result in result square
- 5.5) else clear slots and exit crafting phase

The error was discovered in step 4

The data structure being used was a ds\_grid (data structure specific to gamemaker).

The layout was

x	0	1
0	[1,2]	3

1	[4,5]	4
---	-------	---

Where the first column contained the viable combinations and the second column contained the result (these numbers correlate to item ids).

Due to unfamiliarity with gamemaker syntax when i attempted to assign the first column to a variable to be referenced with the current crafting slots the system set that array as a integer.

To fix this I just added another column to the ds\_grid and changed how the checking function worked. So it changed to this:

```
var ii = 0, zz = 0;
ds_inventory_crafted_combos[# ii++, zz] = item.item1;
ds_inventory_crafted_combos[# ii++, zz] = item.item2;
ds_inventory_crafted_combos[# ii++, zz] = item.item3;
var ii = 0, zz = 1;
ds_inventory_crafted_combos[# ii++, zz] = item.item4;
ds_inventory_crafted_combos[# ii++, zz] = item.item5;
ds_inventory_crafted_combos[# ii++, zz] = item.item6;
```

And the checking function changed to this:

```
repeat(crafted_item_combos){
    if((crafting_check[# 0, 0] == cur_ds_grid[# 0, j]) && (crafting_check[# 0, 1] == cur_ds_grid[# 1, j])){
        SUCCESS = true;
        craft_result = cur_ds_grid[# 2, j];
    }
    if((crafting_check[# 0, 0] == cur_ds_grid[# 1, j]) && (crafting_check[# 0, 1] == cur_ds_grid[# 0, j])){
        SUCCESS = true;
        craft_result = cur_ds_grid[# 2, j];
    }
    if(SUCCESS) break;
    j++;
}
```

This fixed the crafting problem.

Upon further reflection I think that how the ds\_grid was set up initially could have worked. But I think that I had made a mistake in initially declaring the ds\_grid and that was what was causing the error.

Here are some screenshots of the dialog system.



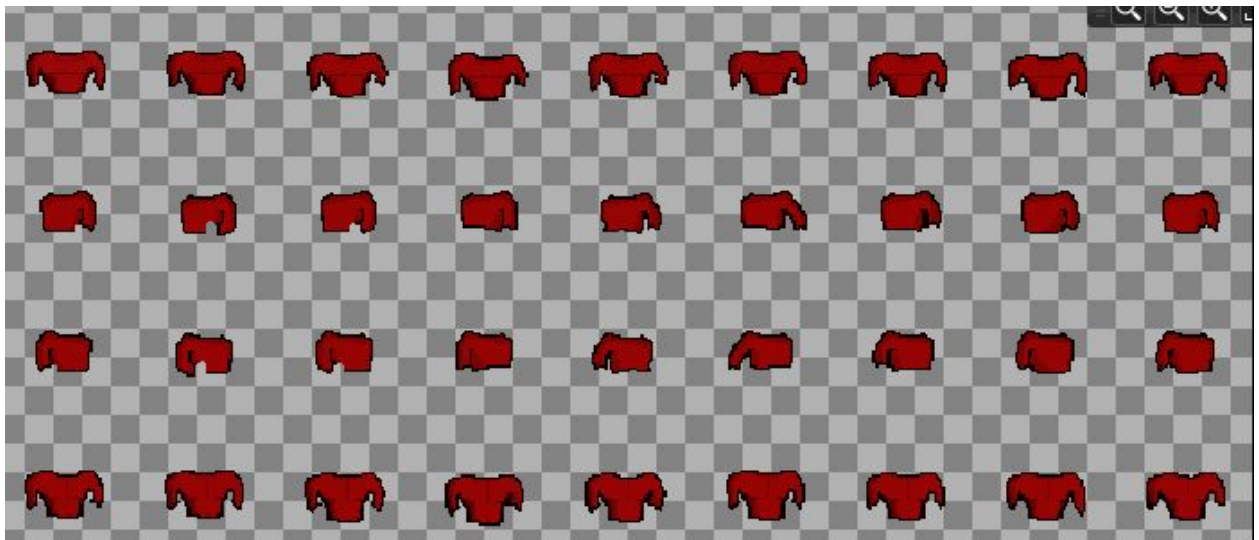
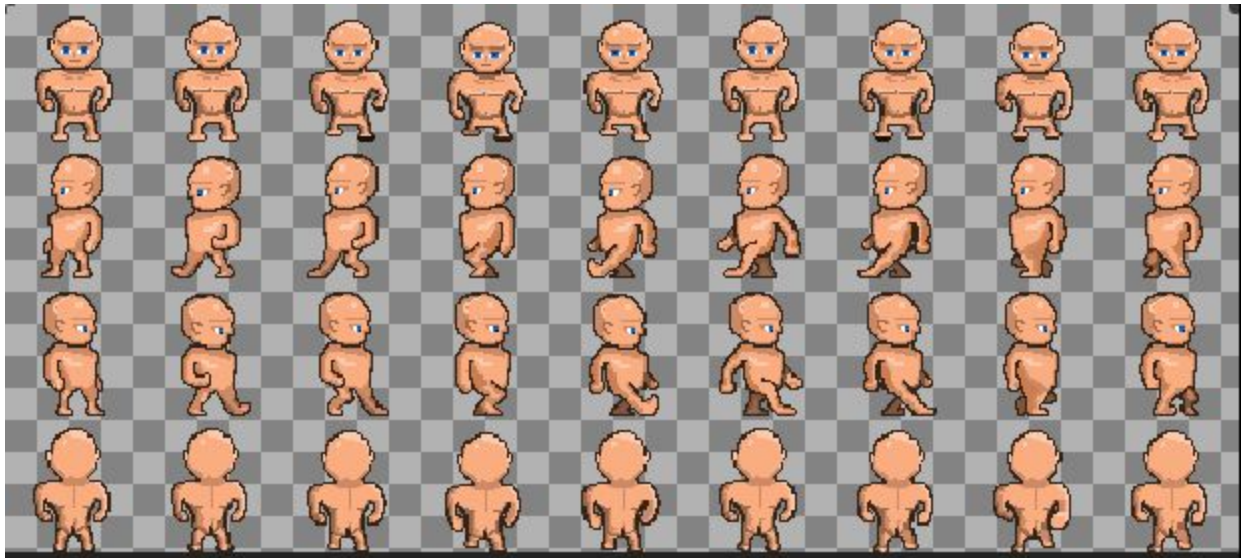
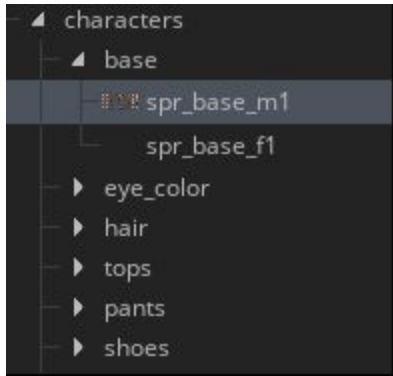


The dialog system works by drawing out the text character by character and plays a voice for each separate character. As well i implemented a textwrapping script that allows a developer to put any string into the dialog array and then the program will format it properly to fit on each line.

The next step is to create a dialog system that lets the player and a npc to talk to one another.

Set of base characters and accessories:

The way this works is similar to how the inventory sprite system works. All the sprites related to one subject are drawn in their own image and then the player object takes parts of the image and draws specific sprites in regard what part of the animation the object wants it to display

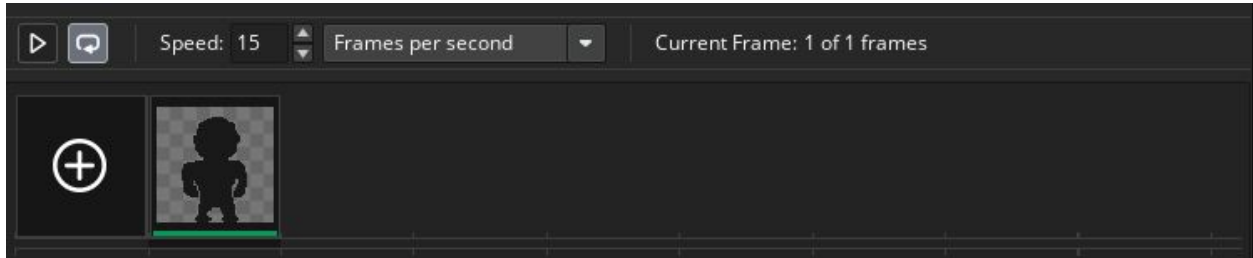


And each accessory (i.e. Shoes, pants, hair etc.) have similar images. So when the sprite is getting drawn on the screen each accessory is layered on top of the base.

Justifications for doing this:

Initially this is time consuming to set up and draw all the sprites but then the act of creating new npcs with variation of accessories is trivial. As well using shaders to modify things such clothing further simplifies this process.

Alternative to this



The alternative to what I am doing is to have sprites for each animation. So instead of one image/sprite containing the images used to animate walking in 4 different directions each direction of walking would require its own strip of frames (shown above) as well each frame would have the character accessorised according to how the developer would want.

Currently for a completely drawn character I need to know of 6 sprites vs traditional method i would need to know 4. but if I wanted to change up how the character looked (new clothing/armour) i would need to create a whole new set of animations.

My current progress has taken be around 16 hours.

Next steps: work on dialog between characters, then global events (puzzles have been solved)

## Note 8

November 30, 2018

2:58 PM

Bug report:

Found( November 30th at 3:30)

Solved(November 30th at 3:50)

Bug description:

When players communicate with a npc, the npc portrait is not updating and only shows the player portrait

Solution description:

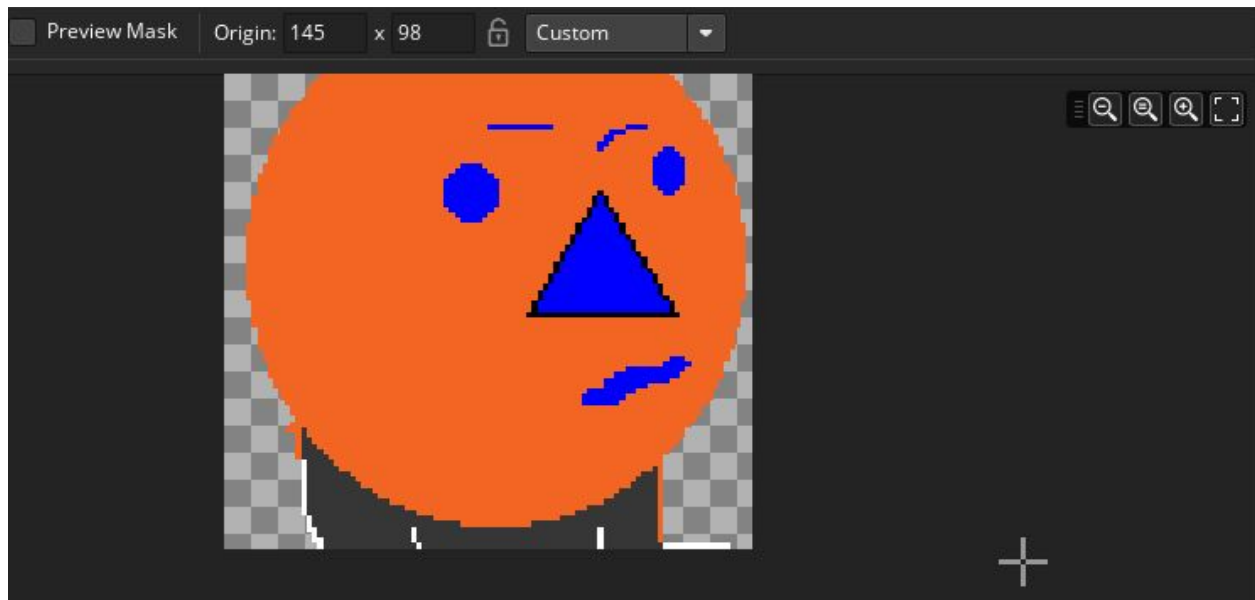
This bug is in the process of being solved.

Thought it was a spelling mistake. Fixed apparent spelling mistake. Now no portrait is being displayed.

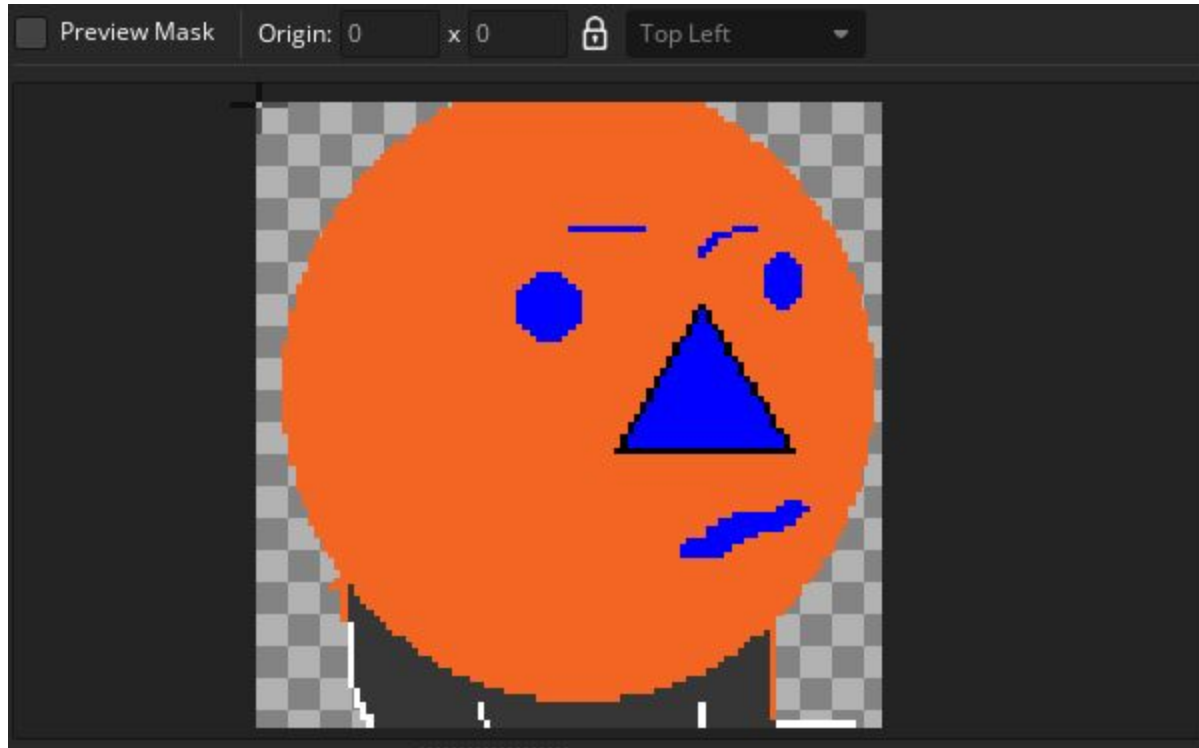
Fixed

Turns out that it is essential to lock the origin location on each and every sprite. In this case i was perusing through my profile pictures and clicked. Since the origin was not locked it changes out of screen so then when the text box object attempted to draw that sprite it drew the empty space that I had selected.

Wrong



Correct.



Bug:

Found (November 30th at 4:45)

Solved (November 30th at 5:00)

Bug description

Found out that if the player interacts with a sign post then interacts with a npc the text being displayed to the screen is drawn out from the right to the left into the wrong position.

Solution:

I just had to reset the default drawing alignments for each text

```
11 //drawing text
12 DrawSetText(c_white,font_sign, fa_center,fa_top);
13 draw_text(x,y-h-border,text_current);
14 draw_set_halign(fa_left);
15
16
```

Then that fixed the problem.

## Note 9

January 14, 2019

11:23 AM



Meeting to lay out what i want done in the next week

Coming up:

- On Friday need to present what i have done
- Need to update my game description to display on the project day ur courses page
- I need to update my github with all of my current relevant data
- Need to provide yesser with a link to that information

To do for this sprint

- Get title screen finished
- Need to get cutscenes working
- Flesh out some more of my puzzles and create some tests to see if they are possible
- Global events

Plans for today:

- Do a first draft for the game description
- Start the presentation
- Update github and organize my information that I currently have on my drive

Notes from today:

Tried to get the main screen working. What i was trying do was to get a light effect to fade in and out for the title screen the way that i attempted to do this was to initially was to get the program to fade individual layers

## Note 10

January 17, 2019

11:32 AM



Don't forget this sound effect. Tis pretty good

## Note 11

January 28, 2019

7:40 PM

Before this I spent the last few day working on sketches and some music just as filler while i was focused

Got the visual effects working the main title screen. And built them in such a way that i have an array containing the values/id for different sprites. So in the future if i want to add in more effects it will be as simple as just adding a new element to the array.

Took the internal workings from the menu screen and repurposed it.

The main menu will need only need a bit of functionality.

- play game (room transfer)
  - send to room 1 level one
- load game (room transfer)
  - this could be its own room or i could do something similar to how the inventory screen works where i just create a overlay and then
- credits (room transfer)

## Note 12

January 29, 2019

12:26 PM

Continuing to work on title screen, also added functionality in the game controller object that allows the player to toggle between full screen and smaller screen.

How i want to set up the data structures for title screen:

I have decided that i am going to put my first cutscene code into the creation code for room one.

So now whenever i want to create a cutscene for entering a room i can just insert the cutscene data structure into the creation code for that room and it should keep thing a bit cleaner.

Ran into a error / bug

Found at 8:50 pm

Description

After navigating to the initial game room from the title screen all instances of the player/npc object are not loading. They are there but not displaying.

Possible reasons for issues.

-I think that i am modifying some gpu settings in the title screen and i am not setting them back to their original settings by the time i navigate to the next room.

-that's about it for ideas. I will run debug and keep my eye on the gpu variables to see if anything looks off.

Will this get solved? Yes /high priority

Note: this did not take an hour to fix i spent 45 minutes watching my roommate chow play league of legends while i thought of a solution. It took around 15 minutes in total to fix it.

Solved at: 10:06

Solution

- Well it turned out that it had nothing to do with the draw event in my title screen. It turned out that during my development process i had situated my title screen first followed by my initializing controller object page. To circumvent this initializing object page i just put the controller object into my title screen as well. Then have my play game option in the title screen navigate the game to the first room. For some odd reason this caused the npc / player objects not display in the first level.
- So the current set up is as such:
- So the game init object is only in the rm\_init room and then once everything is set up the game navigates to the title screen. From there the player can navigate to their desired room. (play, credits, load screen)

Other than that i just put some placeholder rooms in the loading screen and the credits

## Notes 13

February 7, 2019

6:19 PM

Spent the last bit of time working on requirements and specifications. Also did some writing on the script in my to go book.

Other than that i have been wasting time working on other school work as well as messing around on FL studio every now and then. So since my last notes ive spent around 5 ish hours working on project stuff.

So today i want to start getting my head wrapped around the room creation.

- Im going through my concept art/lofi booklet and seeing how many rooms i that i have to create for this current milestone

#### Level 1

- My original lo fi sketch only had one room created, my next version that is currently in my google drive was broken up into 4 rooms

#### Level 2

- 6 rooms in total

#### Level 3

- 6 rooms outside
- 2 inside rooms

#### Level 4

- 12 outside rooms
- 5 inside rooms

#### Level 5

- 25 rooms
- 8 inside rooms

#### Level 6

- 25 rooms
- 0 inside rooms

So this was my initial design for the game where each room would be a square. However after working more and more with game development and game maker i could also just have each level split into two room. Where each room is a rectangle ish shape.

The layout about has it so that each room is a height  $x$  and a width  $x$ . With my new design i could make is so that for example level 4 has 2 rooms, the top one being height  $2x$  and a width of  $4x$

The reason that I had decided to make the rooms this size at the beginning of the project was because in earlier projects that I had created in game maker experienced large amounts of lag if my room size was too big. I now know that the reason for this lag was due to the fact that the code I created in earlier projects for detecting collisions with other objects was very inefficient. The collision controller that is now currently being used is much better. I will now be able to create larger rooms with more objects without the concern of suffering from performance issues.

#### New level design

##### Level 1

- 2 rooms

##### Level 2

- 2 rooms in total

#### Level 3

- 2 rooms outside
- 2 inside rooms

#### Level 4

- 2 outside rooms
- 5 inside rooms

#### Level 5

- 3 rooms
- 8 inside rooms

#### Level 6

- 3 rooms
- 0 inside rooms

## Notes 14

February 28, 2019

10:50 AM

The last few weeks of notes have been kept in a notebook for ease of writing.

- Possibly transfer those notes into onenote and go from there

But for now i need to lay out what i plan on getting done today

1. Work a bit on some documentation
2. Work on the save system.
  1. Need a page in new game that will allow the player to create a name for the save file
    1. Keyboard
    2. Name field
    3. Select name
  2. Create a save file and see how it is formatted
  3. Pull information from parts of the game and turn them into ds lists
    1. Inventory
    2. Player location
    3. Room number
    4. To start for now, add info later
  4. Merge all those ds lists into a ds map
  5. Send those to a file

3. Keep working on art work so the game doesn't look so empty

I plan on working on all of these for this session.

Creating the room that will be used to set character names now

For this to be considered done need to

1. User in on title screen presses play
2. Room changes to character creation screen
3. Keyboard displayed
4. User can navigate up down left right
5. User can change from lower to uppercase
6. When enter is pressed the letter pressed shows up in space for name
7. When accept is pressed the name is saved to the global var and player is transported to room one.

Development notes

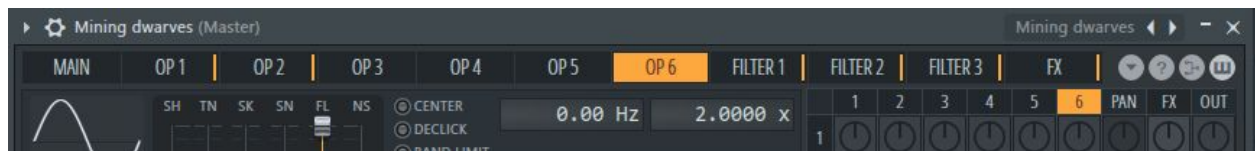
- Ds grids for keyboards are being loaded properly
- Can transfer to the room

Side note



Note: use in level 6, has a forest feel to it





Level 1

## Note 15

March 9, 2019

3:22 PM

Got the save system working. I had designed a script that would look into the:

-inventory object

-player object

-game object

And then get some info

For inventory:	Item ids for each element
Player object	<ul style="list-style-type: none"> <li>○ X position</li> <li>○ Y position</li> <li>○ Cur room</li> </ul>
Game:	Any important flags
	See what puzzles are solved

So the original design was built to insert those elements into a ds list and from there

Create a ds map of ds lists. After that was completed the ds\_map could be encoded as a json object and saved to file.

I found out that this was a little unintuitive when accessing the information afterwards because the ds lists only had an index and the data. So i did some research and found a few examples of a more robust method of indexing and saving the information.

I used these ideas to create a new save load system that first creates a ds list. Then all the information stated previously are loaded into ds maps. The a function called ds\_list\_mark\_as\_map is used to flag the list showing that the ds\_list is holding a previously created ds\_map. I did this because I would then be able to use json\_encode on the ds\_list (usually only works on ds\_maps). As well i would be able to use other ds\_map functions

I then wrap my ds\_list of ds\_maps to a ds\_map and turn it into a string using the json\_encode function.

The other thing I changed as well was to use a buffer system when saving and loading from the save file. The reason I did this instead of just directly saving the string to the save file was because I heard through some more experienced gamemaker developers that this is a good way to avoid issues in the future when porting the game to systems other than the PC. Such as Xbox, PlayStation and Switch.

The load systems work the opposite of the save system but right now I am currently having issues with the room selection process. I think I will need to implement some checks and other logic:

1. See what current room the player is in
2. If i) save file current room is equal to any room that is not a level room (player creation room) or ii) if the save file current room is equal to the current level that the player is in the program will
  1. Go to that room but do not execute any of the other initializing events (inventory, set player position and flags)
  2. Don't transfer rooms but execute the other initializing events.

The reason for this check branches from using the loading feature for the first time and when the player attempts to load when the previous save was in the same room it would cause the game to black screen and die.

So right now the save and load work through the pushing of the buttons S and L. And the plan for today is to:

1. Fix loading bug mentioned above
2. Add the saving and loading functionality to the menu screen
3. Add any other important save points
  1. Need to decide if I should add in saving to the menu or if I should just have certain objects in the game act as save points.
4. Create the load screen in the title screen.

Decided at this point I will just add that to the menu screen since it will be the easiest

## Notes 16

March 10, 2019

11:15 AM

Today I am working on adding load to the title screen. Yesterday I fixed the loading problem and added the loading and save options to the menu screen.

The issues with the load were:

- 1.
2. All in all it was just little issues on formatting data in the save.
3. The I had to change the order of operations of when the loading screen selected the room they were in. The first iteration had it so that the room the player was currently in was saved into the

file last. So then when the game loaded the last thing that happened was the room would change. This caused the game to black screen. (soft lock)

1. To fix this i added in a check that would only change room if the save file room was different than the current room
2. Moved the location of the current room in the save file so that it would execute before player variables (x, y) were loaded.
3. That reminds me that i need to go into my inventory object and make it persistent so that i don't have issues when travelling from one room to another.

So in getting the load system to work for the title screen I need to add some stuff into the game event

- Need to have the game event look and see if any save files exist and get some information (player name, progress id for picture, total time)
  - Then if the save file does not exist load in the default variables. (name:Empty, other information will not display and the name will just sit in the middle of the space)

## Notes 17

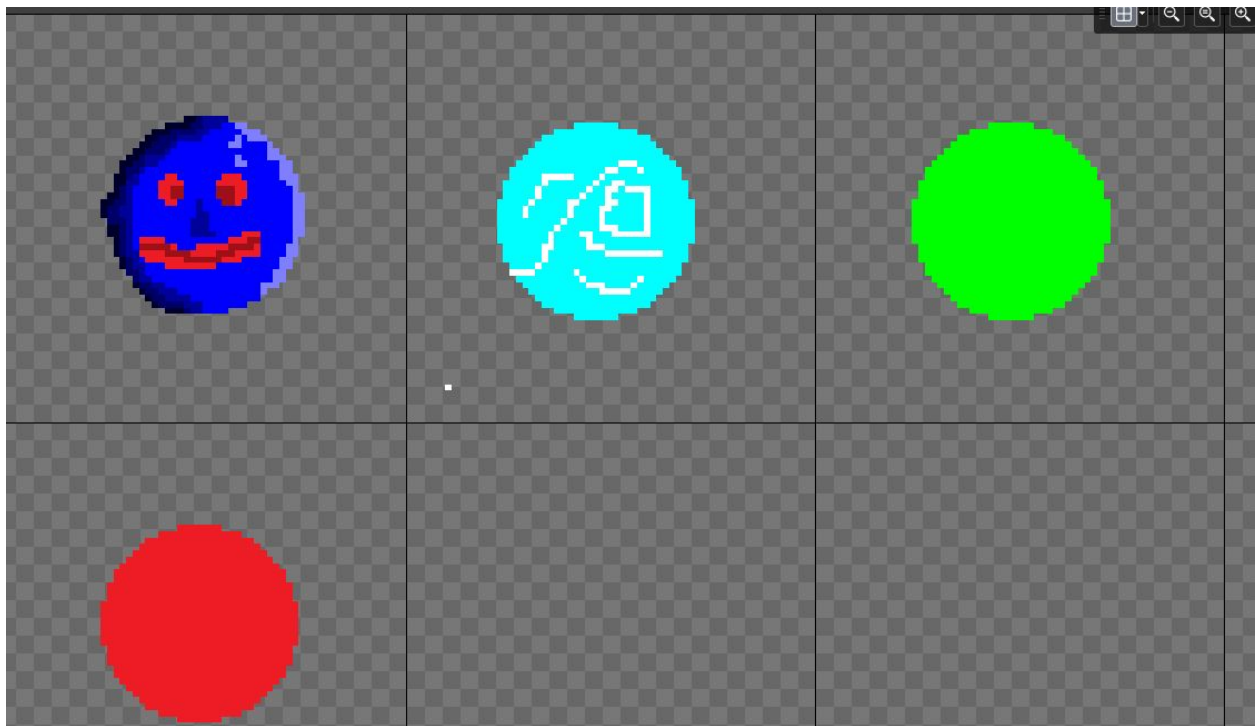
March 13, 2019

10:32 PM

Plans for today:

1. Work on character sprites
2. Work on puzzle item sprites
3. Work on the tile set
4. Work on the cutscene

Do all this for level 1



For old times sake here is the first filler items i used to test out the inventory

What also came up was that i had the puzzle items and descriptions written down on queue cards back from when i was testing them. So i created a excel sheet that now contains all that information so it will be easier to reference them as i input the information for them into the game. So i guess ill start with the puzzle items

This also makes me realize that i will need to add some modifications to the game systems.

1. Certain items in the environment will be able to be displayed and interacted with. And a different item other than the one being displayed to screen will need to be added to the inventory. So i will need to work out how to modify my existing systems to achieve that goal.
  1. I'm thinking of a object that will be a child of the depth object, it will contain a sprite id, a message that will be displayed with the interact text display, and the id of the item that will eventually be added to the inventory after interaction. As well i will need to keep track of if the parent sprite id will need to be changed to something new or if the sprite will need to be destroyed. 2 variables should suffice in doing this

## Notes 18

March 14, 2019

5:50 PM

Error reporting:

The game is not properly drawing one of the items displaying on screen.

Description of issue:

One of the puzzle items in the game is drawing itself over top of the player when the player is walking below the item (greater value of y). This should not be happening, i have a depth controller object in place that should draw everything to screen in a order depending on the y value of the object.

Bug found at 5:30, priority to be solved: high

Notes on debugging: the depth controller object was ordering the objects in the room properly and displaying them in the correct order. But after the depth controller object was done the items draw events would execute over again, thus displaying them over top of everything.

Solution found at: 6:30

Description of solution: I just had to go into the settings of the item object and change it so that it was set to be invisible, thus it would no longer execute its own draw event. The only thing that would be able to do that would be the depth controller object. I should have set this right off the bat but its been a long time since i completed the depth controller object and had forgotten what settings needed to me changed when adding new objects to it.

Now i need to work on character sprites, (dark from of varying degrees. Ash, chow, player)  
Tilesets, intro cutscene)

## Notes 19

March 15, 2019

4:37 PM

Today I'm working on the tile sets

Things i need to think of:

1. Walls
2. Floors
3. Ice

Keep the first floor very simple. So stick to only a few colors

Black outlines

005D99

002E4C

Stick mostly to these colors and then just use varying alphas of white and black to dilute and darken.

## Notes 20

March 18, 2019

1:53 PM

Ran into a issue where when the player loads from the main menu the player object is not being placed into the proper locations within the map. But when the player is loading from within the same room the problem is fixed. So need to fix that

Description of solution:

Turns out that when the load script is ran from the title loading screen it causes issues because it is attempting to change the values of x and y for the obj\_player after the room is changed. However that does not work because the order of events for that section of code was change room, execute the rest of the loading file and then go through the creation events for everything in that room. This was then trying to set variables for a object that had yet to be created. To fix this problem i just had to create some temporary variables in the game object and then when the game was loaded from the main menu the game would keep track of these variables and then once the player object was created it would use the values from the game object to set its starting position. And this would only happen when loading from menu.

Other issue is popping up with new modification made to the room transfer object. Tried to make it so that you could pass in a desired room as well as an x and y coordinate. This worked initially. However the player then loses their ability to move their character around. They have control but the values for x and y are not updating.

Description of solution:

Completed a complete overhaul of the order of operations for the room transfer object.

- Before the way that I had attempted to get things working was by letting the room transfer object handle everything. I
  - It would check for collisions
  - In the event of a collision it would transfer the room to the one i designated.
  - Then i tried to pass it an x and y coordinate and change what the player x and y position was after the room change had occurred

Cons: inefficient, and it didn't work with passing it x and y coordinates.

- Changes i made to get things working.
  - The room transfer object would only contain the next room and the next room x and y coordinates.
  - In the step event of the player object i added a instance place check, which would check to see if there had been a collision with the room transfer object and if so it would return the instance of that room transfer object. Then it would set a transition variable to true.
  - The player would then transfer that information to the game object and the game object would make the game fade out to black, change room and then fade into the next room. When the next room was started it would set the player x and y coordinates.
- This system worked very well and i was able to beef it up a little bit.



- The other things i added to it was the ability to list what the needed direction for entering the transition object was and what the desired exit direction for the player was.
  - To do this i just added some new variables that kept track of the player directions in the game and the player objects.
  - Did some modifications to the drawing event of the player object so that the direction the player was facing was used to determine the desired animations for the player.
  - Then the information is initiated in the room transition object and passed to the player. The player would then pass that information to the game object and it would place the player facing a certain direction after the room transition had finished.

Plans for the rest of the day working on the game.

1) figure out what the hell is going on with my output always saying grid 16 is having a heart attack. I think it might have something to do with my inventory. So i will go fix that.

1. Work on the base player skin
2. Work on the second layer of level 1 tile set. (crystals, trees, more background spooky things)
3. Place puzzle items in the map
4. Work on the object description object lol, small peaceable object that will pop up item descriptions and can also be configured to allow interactions with objects (break branch off tree).





## Notes 21

March 19, 2019

5:51 PM

1. Work on the base player skin
2. Work on the second layer of level 1 tile set. (crystals, trees, more background spooky things)
3. Place puzzle items in the map
4. Work on the object description object lol, small peaceable object that will pop up item descriptions and can also be configured to allow interactions with objects (break branch off tree).

7:42 just finished the base player skin starting to work on the second layer of the tile set.

Finished up at around 1:30

## Notes 22

March 20, 2019

9:07 AM

1. Work on the second layer of level 1 tile set. (crystals, trees, more background spooky things)
2. Place puzzle items in the map
3. Work on the object description object lol, small peaceable object that will pop up item descriptions and can also be configured to allow interactions with objects (break branch off tree).

The tool object that i was going to make for the third task needs to be modified. It will be easier to implement if i break it up into two separate objects. Object item interaction and object item description.

Object item description will:

- Not have a sprite
- Be peaceable anywhere
- Take in a text variable
- Display that text to screen when interacted with

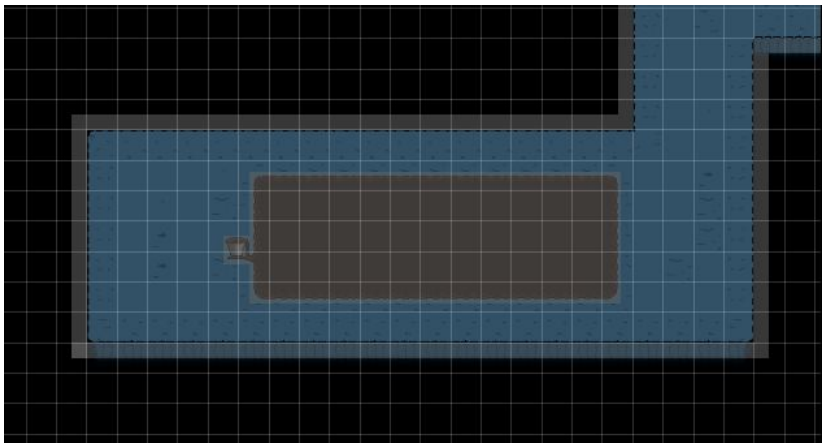
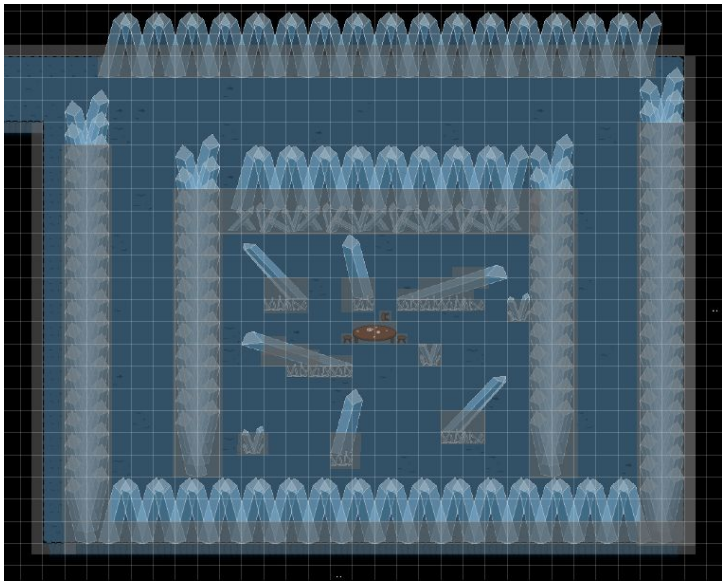
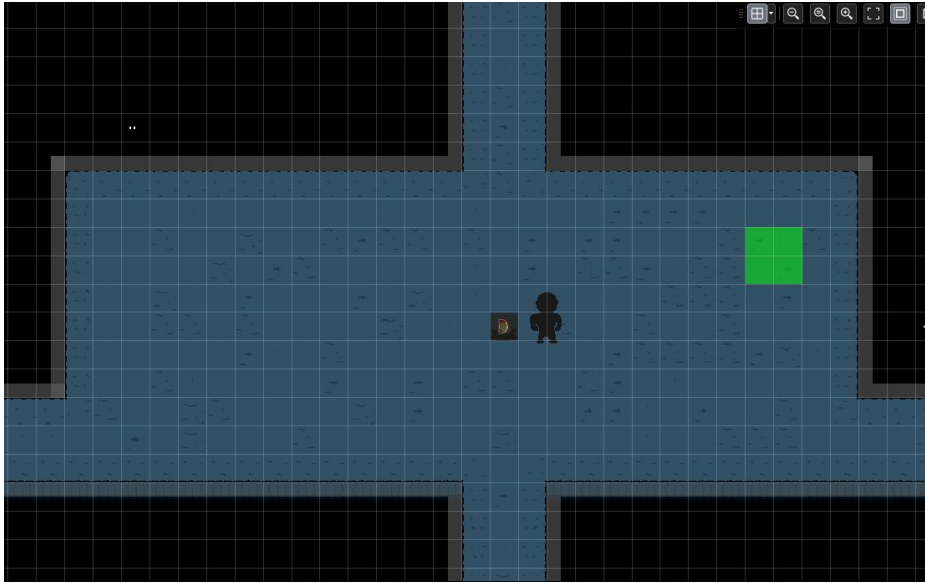
Object item interaction will:

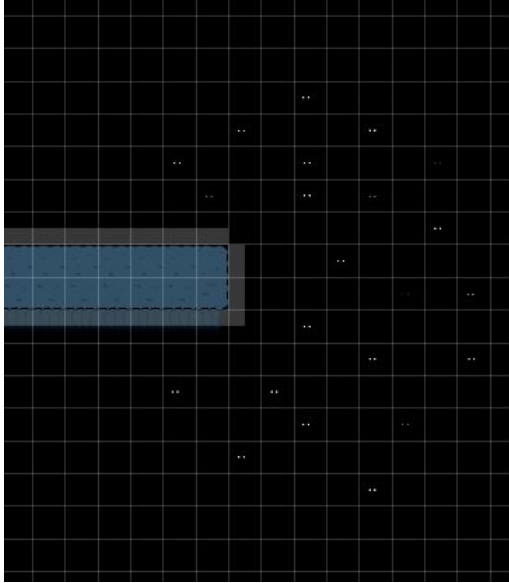
- Have a sprite
- Be peaceable anywhere
- Take in a item index variable
- Take in an optional requirements variable (inventory will be checked to see if the necessary item is possessed)
- Upon first interaction: display the description: "this is a ..." next message will be "interact?" and underneath will read yes vs no
  - Yes: the game will check to see if the inventory contains the right items necessary
    - No item needed " You picked up a <item>"
    - Carrying right item: "you used the <inventory item>, now you have <new item>"
    - Not carrying right item: "you are not carrying the necessary items to do anything"

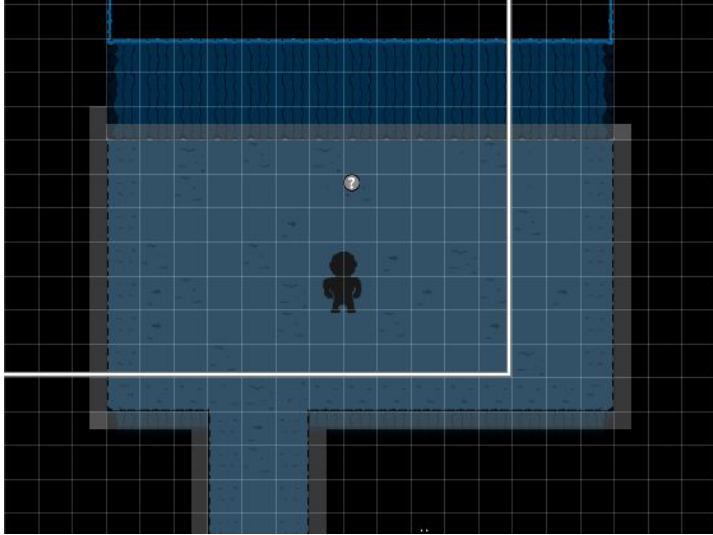
Each of these will probably need their own version of the obj\_textbox that was created earlier :  
obj\_textbox\_item\_description and obj\_textbox\_item\_interaction.

Okay it is now 11pm worked for around 15ish hours today. Part one of the lvl1 map is done. I also got the item description object working. All i need to do is make a few minor adjustments to it because it is little too small. Tomorrow i will get the object interaction working. It will probably be quite a bit grosser but what can you do when you live in a shoe.

Some screen shots of the rooms i finished today







Did some extra polishing on the cutscene events. Now they are objects that can be inserted into the map and have their information modified. (change the commands) .

## Notes 23

March 24, 2019

11:40 AM

From last day i will be working on this object

Object item interaction will:

- Have a sprite
- Be peaceable anywhere
- Take in a item index variable
- Take in an optional requirements variable (inventory will be checked to see if the necessary item is possessed)
- Upon first interaction: display the description: "this is a ..." next message will be "interact?" and underneath will read yes vs no
  - Yes: the game will check to see if the inventory contains the right items necessary
    - No item needed " You picked up a <item>"
    - Carrying right item: "you used the <inventory item>, now you have <new item>"
    - Not carrying right item: "you are not carrying the necessary items to do anything"

After i ran into some issues in my level one: my inventory was not working i decided to set up some test cases for myself to check against

Test cases for each level



Test case	Expected results	Actual results	Notes
Can the player move around	pass	pass	
Does the pause screen work	pass	pass	
Does the inventory work	pass	pass	
Does saving in the room work	pass	pass	
Does loading from within the room work	pass	pass	
Does loading from title screen to room work	pass	pass	
Can all the puzzle items be acquired in the desired way	pass	pass	

Do the puzzle items craft into the desired objects	pass	pass	
Do all the cutscenes work	pass	pass	
Can the player progress to the next level?	pass	pass	
Does the inventory stay clean after each level	pass	pass	
Can the player interact with all interactable items in the level	pass	pass	

**Found a bug in the first level:**

Description of bug: The inventory screen is not working, when the player pushes the inventory button the player loses control of the player object and the inventory does not appear.

Bug found out at 11:30

Priority: high

Bug fixed at:

Description of solution: the problem was that I was an idiot. During some point when I was optimizing the layout of the all my instances and tile sets in my room editor I must have accidentally deleted my inventory object out of the instances layer. Or maybe it has something to do with me updating gamemaker today. Either way the problem took around 45 seconds of using the debug tool to realize what was going on.

Okay I'm now working on the item interaction object

Development notes:

Order of events for the object textbox item interaction

First display the description of object

This can be any number of lines

Second after that message is displayed go into interaction phase

Display interact? Yes or no

If interaction conditions is equal to item.none then allow interaction immediately

If item interaction condition is equal to a value other than item.none check inventory for item with the same value as the interaction condition. If there isn't that item display message.

If there is that item set item\_in\_inventory to true

How to test this object:

Test case	Expected results	Actual results	Notes
Interact with inventory room and no inventory requirements	pass	Pass	
Interact with inventory room and successful inventory requirements	pass	Pass	
Repeat 1 with full inventory	pass	Pass	

Repeat 2 with full inventory	pass	Pass	
Interacts with missing inventory requirement	Pass	Pass	
Interacts with missing requirements and full inventory	Pass	Pass	

Note:

Also was looking through my game object controller and realized that there were some discrepancies with the checks for game state ( inventory and pause screen) where control could permanently be taken away from the player if they were to push the pause button while in the inventory and vise versa as well there were possible chances of there being issues when the player is observing a text box or item description box. So i also put a few if statements to check for that as well.

The item interaction is completed but is having a few issues. It is getting rid of the proper items from the inventory however it is not adding the new one. So I will look into what is going on there.

This is now all fixed:

There was a issue popping up when the initial message was over the length of one messages (page) but it was just a easy fix of resetting the page value when overwriting the text value.

Now I am.... Definitely forgot what i was doing. Oh right there was another issue

Problem with the game time resetting for a new save file.

Fixed it. Just had to make sure that I initialized the time to zero when a new game is created.

Almost done putting everything playable into the first level. But before i finish that I'm going to go through and make a few changes with the inventory system.

There was an old bug I recorded probably around 10 notes ago. Where if you pushed backspace too often in the inventory screen things would get stuck and messed up. So i will look into that and see if i can make some changes to that.

I'm going to create an event manager system to keep track of when certain objects have been picked up and then i can use that event manager to set certain flags. The reason that I am doing this is because i

need a system in place to increment npc dialog once certain flags have been triggered and then once all of that is done i need a way to trip the final cut scene for each level.

Before starting to work on this i added a script to the cutscene scripts that would check to see if a certain item was in the inventory. And if so change a variable, so this could be a work around that i could use to set important flags.

## Notes 24

March 25, 2019

11:15 AM

Plans for work today:

1. Make it such that you can change the text arrays for the characters by using cutscene trigger objects. So I could either use a system that stores the arrays of dialog in arrays then from there when a script is called the text value will be written over with the new array of dialog.
  1. So this will need to be done mostly in the parent object of the players will need a ds\_list of text arrays
  2. Need a script to increment the dialog as well as copying over the contents of the array to text variable
    1. This will need the id of the player who needs to have their dialog increased
    2. Should create a user event that will reset the current text array and initialize the new one as text.
    3. Also set up a case in the dialog text boxes that listen for a string only containing "|" this will cause the dialog array to increment.
2. Work on the cutscenes and finish level 1
  1. Check for a condition and have the npc being talked to disappear
  2. Activate the happiness plus one overlay and increment to the next level.

What I've gotten done so far is

The npcs can have multiple different text options. Right now there are 3 ways to change the current text options for an npc.

1. Insert a string consisting of "|" for a quick transition to the next dialog option.
2. Call the increment NPC dialog script - goes to next dialog string
3. Call the change to NPC Dialog script - goes to a dialog state that the caller specifies.
  1. Need to create a cutscene version of this so the cutscene event will be able to end properly. (done)

So went off on a tangent when i realized that when the player exits out of the game after picking up an item then restarting the game they could dupe items. As well there was no way to keep track of what player dialog states were.

So added some stuff to the load and save and game object

Save saves this new information:

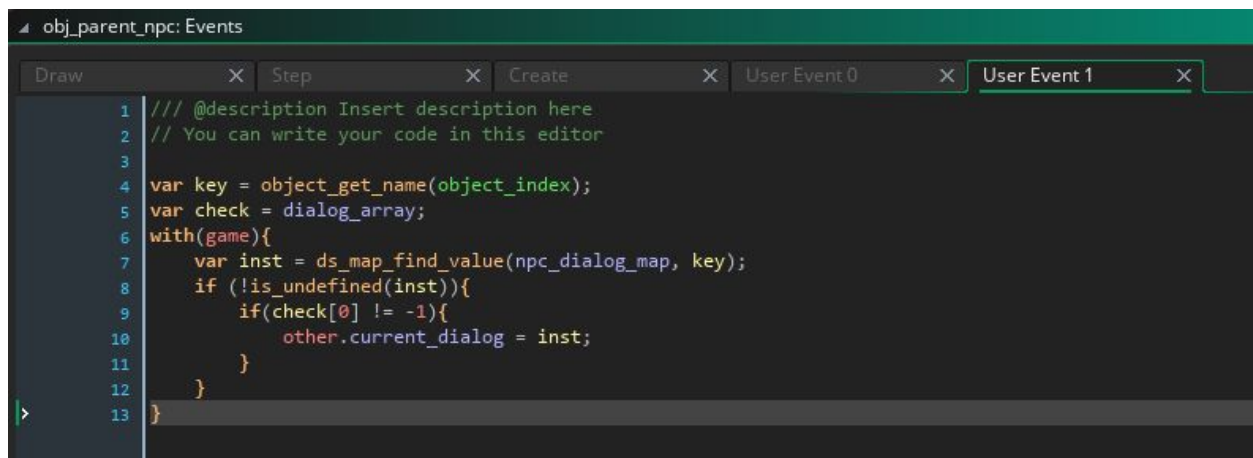
- Each npc current dialog
- Each interactable item
- Instance id
- Sprite index
- If it has been picked up

The load functionality will check to see if the game is being loaded from the title screen. If so then the information mentioned above will be temporarily stored into a buffer in the game object and when the other items are being initialized upon room creation they will check the game object to retrieve any relevant information for themselves

The item interaction object does this upon its creation, and i created a user event for the npc parent object to run whenever one of its children are initiated

Also had to do a similar fix to the inventory. Every other test case I have used with it i have loaded the inventory with pre set values. So the first time i had it empty i realized that after loading the game it was completely empty. So i did the same fix where i kept a buffer in the game object .

Here is some filth (the user event in the obj\_npc\_parent)



```
1 /// @description Insert description here
2 // You can write your code in this editor
3
4 var key = object_get_name(object_index);
5 var check = dialog_array;
6 with(game){
7     var inst = ds_map_find_value(npc_dialog_map, key);
8     if (!is_undefined(inst)){
9         if(check[0] != -1){
10             other.current_dialog = inst;
11         }
12     }
13 }
```

Here is the code for transferring object interaction information to the game buffer.

```

case(obj_item_interaction):
    if(instance_exists(obj_item_interaction)){
        with(_map[? "instance_id"]){
            has_been_picked_up = _map[? "has_been_picked_up"];
            sprite_indx = _map[? "sprite_indx"];
        }
    } else {
        with(game){
            var map4 = ds_map_create();
            ds_list_add(item_interaction_list, map4);
            ds_list_mark_as_map(item_interaction_list, ds_list_size(item_interaction_list) -1);

            ds_map_add(map4, "has_been_picked_up", _map[? "has_been_picked_up"]);
            ds_map_add(map4, "sprite_indx", _map[? "sprite_indx"]);
            ds_map_add(map4, "instance_id", _map[? "instance_id"]);
        }
    }
    break;

```

This game has been one non stop bug fixer

But was popping up where if the player tried to load in from in the game from one room to another the game would transport the player to the new room but keep the same x and y coordinates. I added this

```

case(obj_player):
    var curr_room = _map[? "room_name"];
    var rm = asset_get_index(curr_room);
    if(rm != room)
    {
        room_goto(rm);
        game.playerx = _map[? "x"];
        game.playery = _map[? "y"];
    }
    if(instance_exists( obj_player) && rm == room){
        with(obj_player){
            x = _map[? "x"];
            y = _map[? "y"];
        }
    } else if (!instance_exists(obj_player)) {
        game.playerX_title_screen = _map[? "x"];
        game.playerY_title_screen = _map[? "y"];
        game.loading_from_title = true;
    }
    break;

```

When i first added this i had the player check on their create event if these values were not -1 and if they were non zero i would set the player x and y to these values and set them back to -1. it should have worked but for some reason it was not doing anything.

So what i ended up trying was just taking my check and putting it into the step event of the player object and that ended up working.

Also here is a cute little snapshot of a terrible work around



```

with(obj_player){
var inst = collision_rectangle( x - radius, y - radius, x + radius, y + radius, obj_item_interaction, false, false)
with(inst){
    has_been_picked_up = true;
    if(orig_sprite != noone){
        sprite_idx++;
    }
}
}
}

```

I did this in the obj\_textbox\_item\_interaction. feel ashamed about this. But it was the only thing i could think of to make it work.

There is a issue where before the player saves and then picks up an item it will say the item name twice and in one case it says it THREE TIMES. I don't know what is going on. But after i save and exit and try to pick up an item it will not do it anymore.

Solution:

```

//with (obj_inventory){
//other.text += ds_inventory_item_description[# 0, in];
//}
text += Get_Inventory_Description(in);

```

So in all the old cases i would go into the inventory object in whatever object i was currently in. I would then get what the description was.

But for some reason this was causing the issue. But if i let a script go into the inventory and then return the string it works perfectly. So i'm not sure why it fixed the problem but i don't care at the moment.

Done coding around 1 am

## Notes 25

March 26, 2019

10:34 PM

I created the poster for the game today and finished it



## Notes 26

March 27, 2019

11:38 PM

Today was spent working on documentation, still need to polish everything and complete the s + o document

Also was working on the interactable objects that will be used to tell the player how to play the game (how to use )

When i was doing this i made a modification to my item description object where you could pass it an array of text options and have the player progress through that. I felt this was appropriate for whenever there was a very long item description. And for some of my items that describe the world to the player it adds a bit of character to them.

Example:

```

InstanceCreationC... X
1 text_array = [
2 [
3     "I am the magical floating tutorial tile",
4     "I contain a vast wealth of knowledge that the other tiles could not even fathom",
5     "'Such as' you ask?!?!",
6     ".....",
7     "ummmm Avacados are an excellent source of fiber",
8     "what do you mean avacado is spelled with an O?",
9     "... oh my goodness",
10    "I've never felt so embarrassed in my whole existance",
11    "|",
12 ],
13 [
14     "<The floating tile appears to be blushing now>",
15 ],
16 ];
17 ];
18
19 event_perform(ev_other, ev_user0);

```

So once all of these object are created i will take screen shots of them and put them into a document. I should also have a pop up right after new game is selected that says something along the lines of:

- Press Z to interact with objects in the world.

And other than that i just feel that i need to say something about the inventory, and the menu screen.

The talk about the inventory screen should be simple. Just say that selecting two items and crafting them might result in new items. However if they do not combine together nothing will happen. If you try to combine an item with itself the world will not break... Instead nothing will happen.