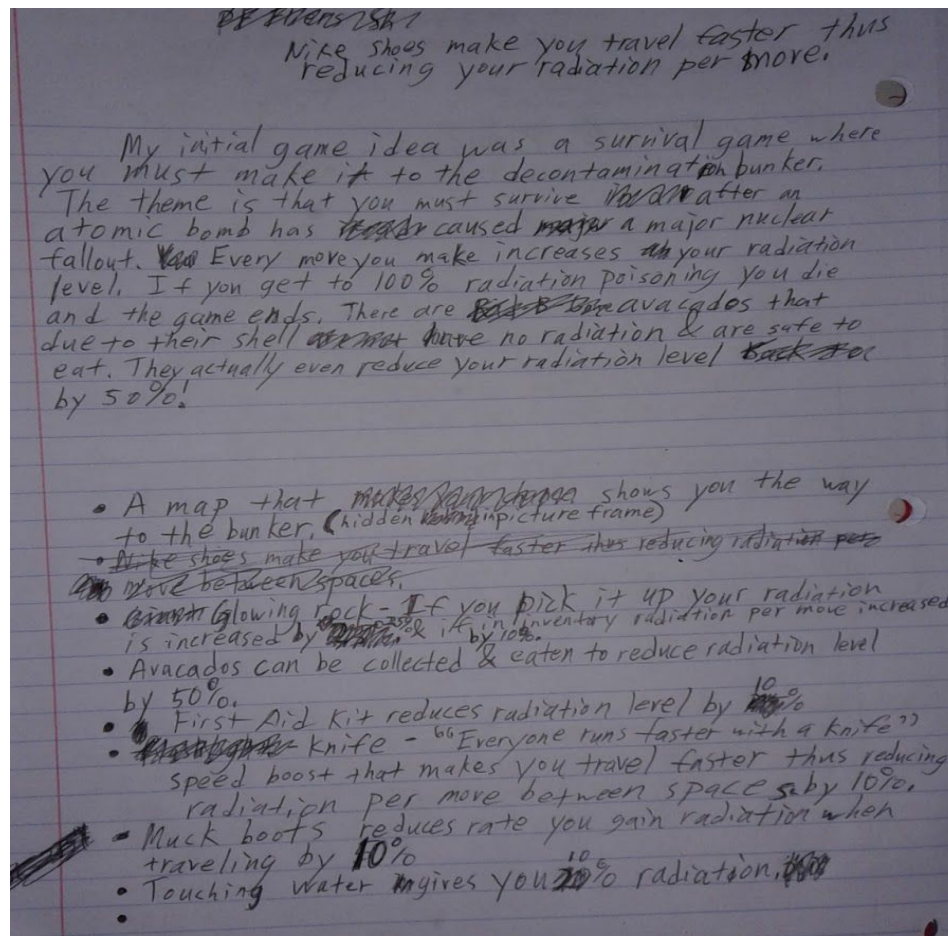Project Name : Final Project Deterioration (Text Based Game)
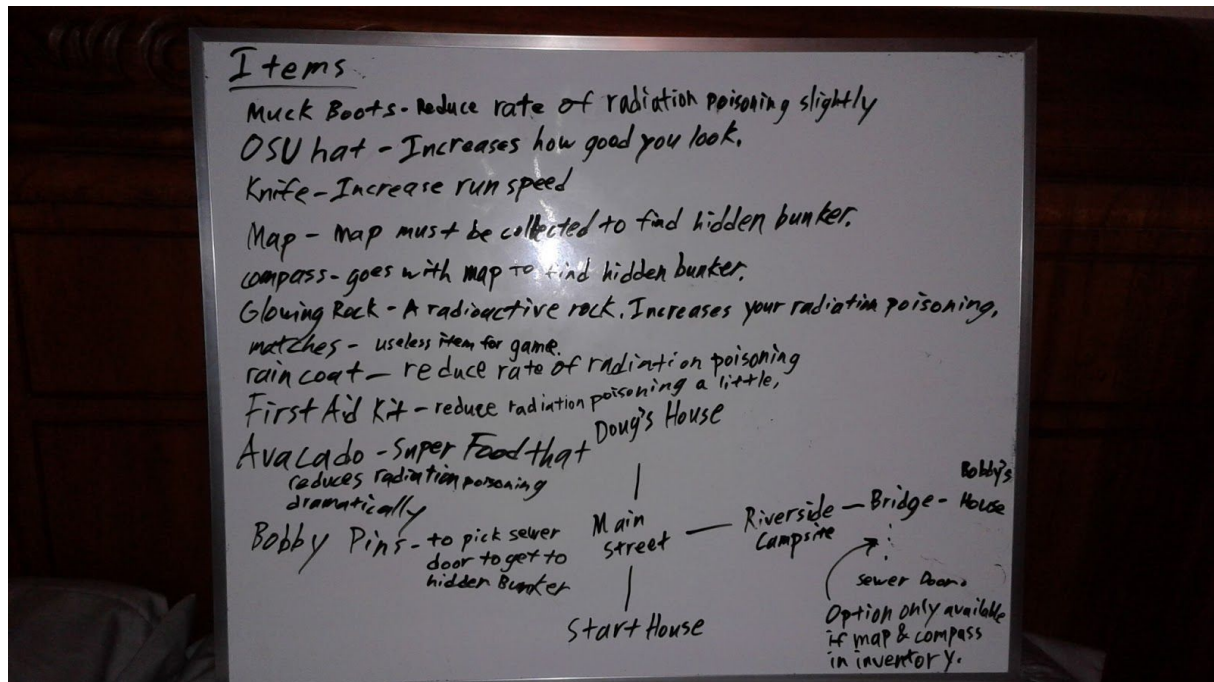Author: Jason Rash
Date: 8-13-19

# Initial Design Description

My initial game idea was a survival game where you must make it to the decontamination bunker. The theme is that you must survive after an atomic bomb has caused a major nuclear fallout. Every move you make increases your radiation level. If you get to 100% radiation poisoning you die and the game ends. There are avocados that due to their shell have no radiation and are safe to eat. They actually even reduce your radiation poisoning by 75%. To win the game you have to collect the map and compass to display the bunker location on the map. My original idea was to have the player collect bobby pins to pick the lock to open the bunker.

**Items**

Muck Boots - Reduce rate of radiation poisoning slightly

OSU hat - Increases how good you look.

Knife - Increase run speed

Map - Map must be collected to find hidden bunker.

Compass - goes with map to find hidden bunker.

Glowing Rock - A radioactive rock. Increases your radiation poisoning.

matches - useless item for game.

rain coat - reduce rate of radiation poisoning

First Aid Kit - reduce radiation poisoning a little.

Avacado - Super Food that reduces radiation poisoning dramatically

Bobby Pins - to pick sewer door to get to hidden Bunker

Doug's House
|
Main Street — Riverside Campsite — Bridge — Bobby's House
|                                                          ↘ :
Start House                                          Sewer Doors
                                                Option only available
                                                if map & compass
                                                in inventory.

# Changes to Design

I originally had a vector of pointers to Item objects as to store the items in each space, and to store the items in the players inventory.  I changed to using smart pointers as it made dealing with the removal of said pointers much less complicated and more safe from memory leaks.

I changed the item to open the bunker to a Key Card.  I thought this just made more sense to use as a device to open a radiation proof bunker.  I also got rid of two locations on my map called Bridge and Sewer as I didn't feel like they had a purpose in my game.  I didn't stick to my design plan very much with this project as I didn't have much of an idea to begin with in this project.  In the end I felt like the game is somewhat a text based version of a game from the Bethesda Fallout series.  Maybe what fallout would have been if it were created back in the 80s.

# Problems Encountered

One problem I encountered with the inventory vector I had was that I didn't have an easy way to differentiate if an item was usable to reduce radiation poisoning or if it would just sit in your inventory.  I ended up going with two different vectors for the player inventory as I then did not have to sort out the usable vs the non usable items when it came to needing to use an item to reduce your radiation poisoning so you don't die.

It was difficult to balance the difficulty of the game.  I was trying to go for it being somewhat hard that you may not complete the game in your first attempt.  I playtested it

myself and since I have intimate knowledge of how the game works it feels too easy, but I didn't want to frustrate the graders/others by making the game confusing.

# Testing Table

| Test Scope | Test Description | Expected Output |
| --- | --- | --- |
| **Main Menu** | Input 1 at main menu | Game Intro is printed to screen. |
| | Input 2 at main menu | Exit Program |
| **Tour Space** | Input 1 at tour/walk around space | A description of what the space looks like is printed out. |
| | Input 2 at tour/walk around space | Program asks if you want to search for items |
| **Search for Items** | Input 1 at search for items | A list of items in that space is brought up. |
| | Input 2 at search for items | Goes to print Map and Player Move Menu |
| **Select Item to examine** | Type in number of Item | Program asks if you want to add item to inventory |
| | Type in 0 | Prompt that number must be between 1 and x (x is number of items in the space) |
| **Put Item in Inventory?** | Type 1 | Item goes into inventory if inventory is not full. |
| | Type 2 | Item is not put in inventory and program goes to print Map and Player Move Menu |
| **Player Move Menu** | Type 1-4 | Move if there is a valid space in the direction the player wants to move on map. Else reprompt for player move. |
| | Type 5 | Reprompt for player move. |
| **Reveal Bunker** | If Map & Compass are in inventory | Reveal hidden location of Bunker on Map |
| **Win Condition** | If at Bunker Location and player does not have Key Card | Tell Player that Key Card is needed to get in the Bunker. |
| | If at Bunker Location and Key Card in inventory | Player wins the game and program goes back to main menu to start new game or quit program. |