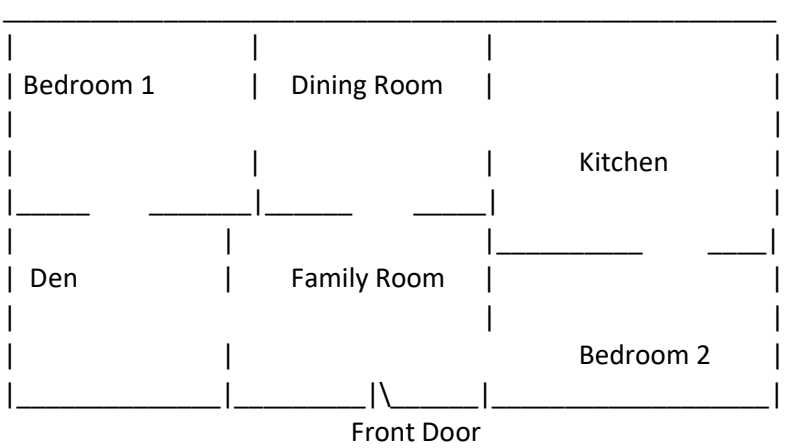
Matthew Solbrack
CS 162/400 Intro to Computer Science
Final Project

Design:

This Game is going to be called Find My Keys. The object of the game is to find your keys that you have lost in the house! Each room will have different objects to look through to find your keys. You only have time to look through 15 places. You must find all three keys in 15 tries or less to win the game. There are six rooms.

Here is the house.



Class Space:

Space * left, //this pointer points
* right,
* top,
* bottom;
DisplayHouse() – Display house
Get/Set room to the left, right, up and down.
nokeys() – class to hold the no keys shared by all derived classes
any menus that the game has except those that are specific to a room

Game Class:
loop through the game.

derived classes = FamilyRoom, Dining Room, Kitchen, Bedroom1, Bedroom2, Den

Classes that will hold keys, FamilyRoom, Kitchen, Bedroom1,

I'm not exactly sure how to move through the different rooms. This will have to be trial and error. I will start in the space class. This will be where I will try to move through the rooms.

- Family room, under the couch keys will be found. Some sort of obstacle should be built here
- Dining Room, in the cupboards an obstacle should be built
- Bedroom 1, under the bed an obstacle should be built

Game should use loops until the game is won or lost. The player should be asked if they would like to play again.

Test Table:

Test Case	Input Values	Expected Outcomes	Observed Outcomes
Input Negative	-1, -22, -5	"Try Again"	"Try Again"
Input at 0	0	"Try Again"	"Try Again"
Input in Current Range	When Prompted: 1 or 2 When Able: 3,4,5,6 When Prompted: Y, N	Should go through the program and bring you to the menu to run the simulation again and again and again	The game executed as desired.
Input low	2, 3, 4, 5, 5.5	Should go through the program and bring you to the menu to run the simulation again. Sometimes the 5 should not be taken because it is too large	The game executed as desired. The 5 was sometimes given the "Try Again", it is too large for the menu. The decimal threw a try again.
input extremely High	1000, 99, 55	"Try Again"	"Try Again", this input is too high for this game
other than integer	#, W,	"Try Again"	"Try Again"

Reflection:

Wow! This was a hard assignment. Most of the problems arose by the movement around the space. Many hours were spent to find the best way to implement this. Other issues regarding the containers were also an issue that needed to be worked out. I will explain further in detail throughout this reflection.

I started this assignment by trying to move around the different spaces through the Space.cpp file. I knew in my mind that objects can't be created in an abstract class. However, I was determined to make it work. But, much to my displeasure, I could not find a good way to implement this. I looked through the text book from this course and googled for hours! Everything I found suggested making objects in an abstract classis was not possible, or ideal.

A new approach was necessary. From reviewing previous assignments in this class, I found that creating objects outside the abstract class allowed me to call the information in the derived classes which has

access to the abstract class. I could grab all sorts of information by creating all the objects this way. I decided to take this approach. I could use the functions from the abstract class to hold the information on what is left, right, up and down from each object. It kind of linked together the same way as lab 6. But, instead of the struct, it was kept in an abstract class.

Another issue that I came across was the container of keys. I knew that I could either create a new class to hold the information of the keys, or I could just add together all the information from the different objects. I decided not to create a separate class. I feel that it saved time and space. An STL container <stack> was used here to meet the requirements of this assignment.

Overall, this assignment was fun. It took 20+ hours to make. I am happy with the results. This was the most graphics I've made yet. I feel that a lot that was learned in this course was put into this final.

Thank you for teaching me new skills this semester. Hopefully, I will be seeing you in other classes. Have a good rest of the summer!