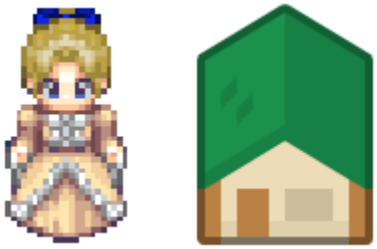
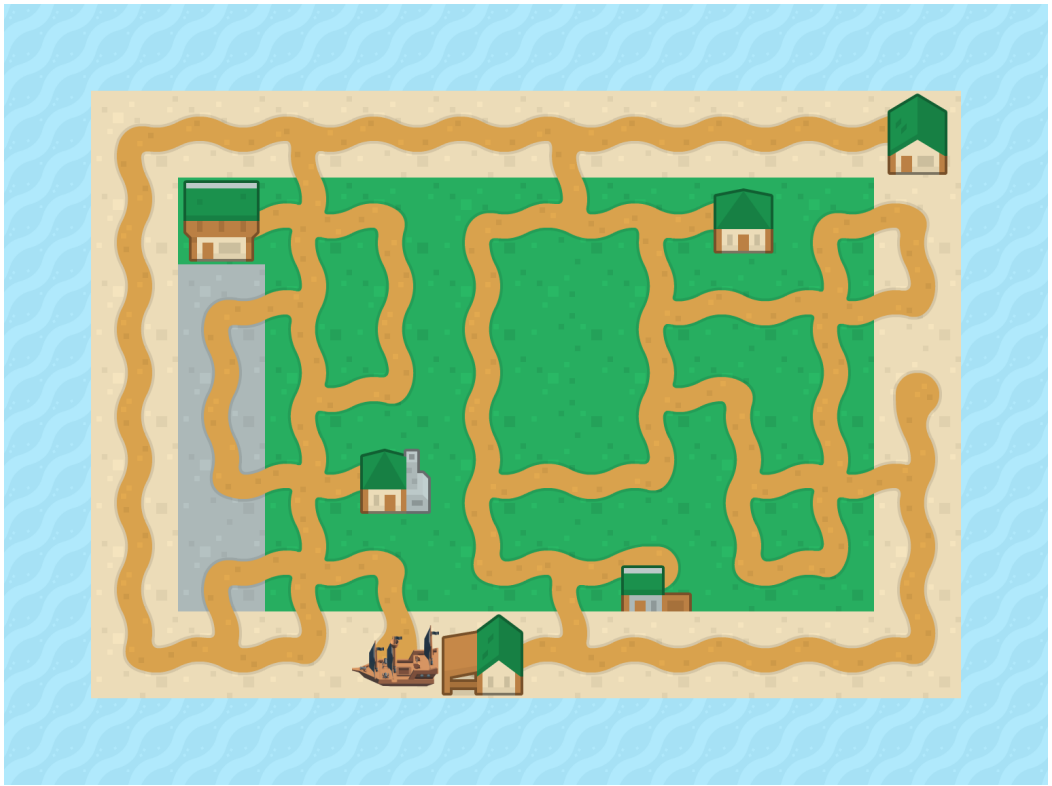
Journaling Notebook
The Royal Island

Isabelle Seliger, Division 2





Project Links

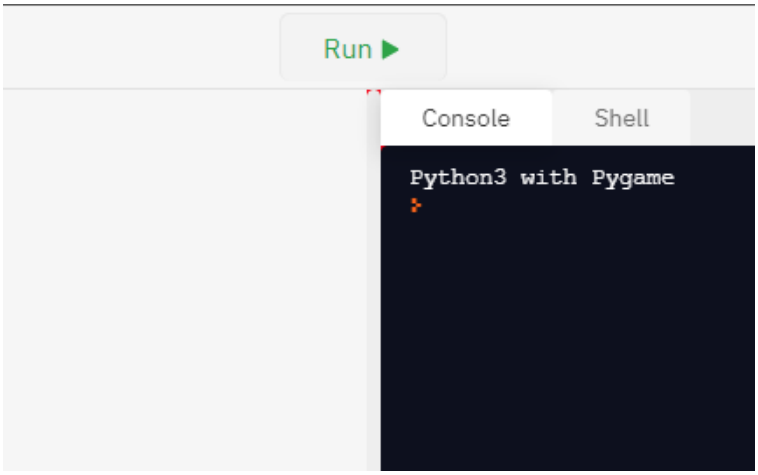
- A link to my code
    - https://github.com/iseli64/Royal_Island
- A link to the game
    - https://replit.com/@IsabelleSeliger/Royal-Island?lite=1&outputonly=1
- A link to my journal
    - https://docs.google.com/document/d/1kIyBbqH3aBVwoZ7mN-C1Vro1INmJAg3lmya1YZ90MoY/edit?usp=sharing

Overview

In the Royal Island, find items from each Disney character. Find Ariel’s fork, Aladdin’s magic lamp, Tiana’s bread, and the pirate’s compass. Find these items to win the game.

Instructions

- Go to https://replit.com/@IsabelleSeliger/Royal-Island?lite=1&outputonly=1 and click the little green Run button at the top. It should look like this:



- It takes a few minutes to load the game from Replit. It may also fail the first time it launches, press Run again if an error happens. (The game does not have issues, running it from Replit causes it to be slow sometimes.)
- Once the map is loaded, click inside the map to begin the game.
- Use the arrow keys to move the player around.
- If you are touching a Disney character, click space.
- To go into the buildings, just walk on top of it.
- To collect an item, go over and walk on top of it. Once it disappears, you have collected it.
- The items will be located in the different buildings, but they won't appear until you talk to a character at least once.
- Press the minus button to zoom out and the plus to zoom in.

How I decided to make this Project

I decided to make an easy, calm quest game. My game is kind of based on Animal Crossing. I wanted to make a game that was like Animal Crossing because I play it a lot. Instead of animals as villagers, I used Disney characters. I used Ariel, Tiana, Aladdin, and a pirate girl. I started with a tutorial and added a lot.

Sprites, Tiled, and Inkscape

Sprites

- Sprites are the different types of characters in the game. In my game, I have the player sprite, the character sprites, and the item sprites.
- In the game, all of my sprites do different things. My player sprite walks around and completes the quests. My character sprites give the player quests to do. My item sprites appear in the different buildings.

Tiled

- Tiled is a software that helps people to make maps.
- Tiled uses layering and properties.
- I used Tiled to make my map and all of my buildings.

Inkscape

- Inkscape is a software that helps people to make vector images.
- I had made my map and buildings on Inkscape but used Tiled instead.

The Map

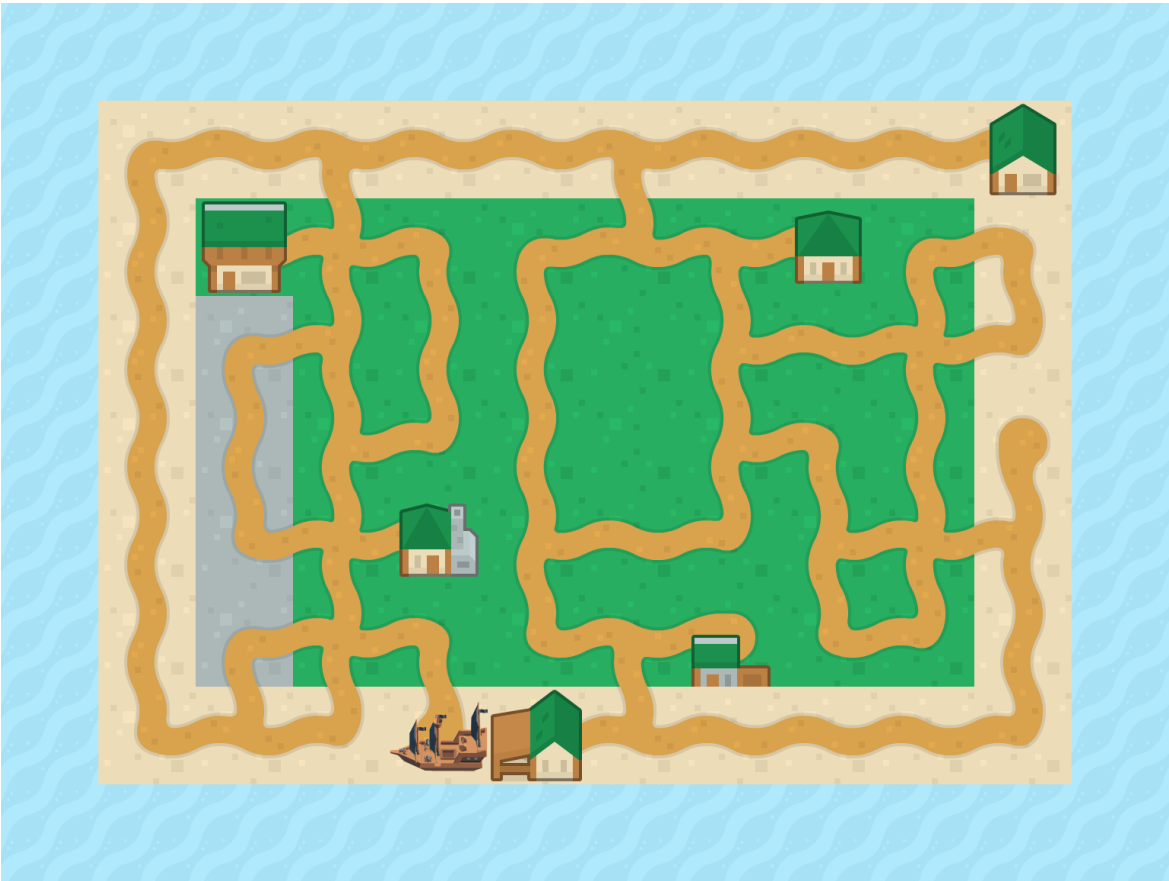
How I made it

- I used tiles from https://www.kenney.nl/assets/page:2
- I first put the tiles together in Inkscape (https://inkscape.org).
- I had to redo the map in Tiled (https://mapeditor.org).

Problems/Solutions

- One problem that I had was that I had to redo the map in Tiled because I wanted to be able to have the background scroll. I had to redo the map so that it would work better than before.
- Redoing the map wasn't that hard, but I had to make sure that all the tile blocks were the same size. Luckily, they were all the same size.

This is my map. It was actually really easy to make. I've updated the map and so the building above the gray roads doesn't exist any more.



The Player Sprite

How I made it

- I used a sprite from http://untamed.wild-refuge.net/rpgxp.php.
- I turned it into a spritesheet in Piskel (https://piskelapp.com).

Problems/Solutions

- One problem I had was making sure the spritesheet was the correct size.
- Once I got it to the correct size, the spritesheet gave me 16 different costumes for the player sprite.
- I made a sprite sheet but I didn't end up using the other costumes.

This is the only costume I ended up using.

The Buildings

How I made them

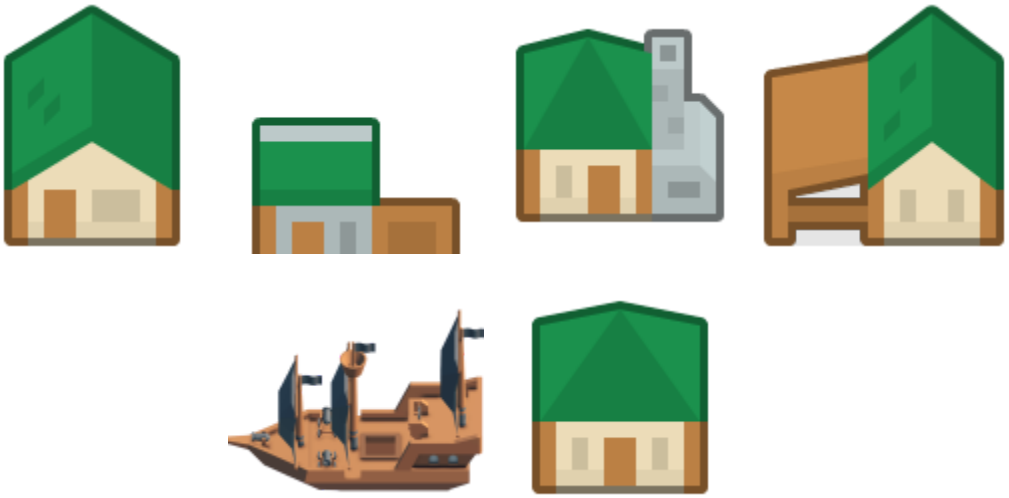
The buildings are a part of my map, but I had to get it so that the player could actually go inside of them.

- First, I had to add rectangles around them in Tiled. (The rectangles helped the sprite to know that it was a different layer than the paths and to not run over the buildings.)
- Second, I had to test it and make sure the sprite wouldn't run over the buildings.
- Third, I had to make it so that it would put the sprite into a different place.
    - To change the place, I had to put the room that I made into Tiled and change it into a new map layer.

Problems/Solutions

- At first I had only made the backgrounds for the houses in Inkscape. I had to figure out how to add it into my code.
- To solve this problem, I turned it into an image on Tiled. It worked a lot better and I did that to the other buildings as well.
- Another problem I had was sizing. I had to size the rooms correctly and I had made the houses different from the non-houses. This was a problem because the images for the normal buildings were too big and wouldn't fit in the grid.
- I fixed this problem by resizing the image and making it into the right size.

These are all of my houses. The first one is Ariel's house. The second one is the restaurant. The third one is Tiana's house. The fourth one is the Pirate's house. The fifth one is the pirate ship. The sixth one is Aladdin's house.



The Character Sprites

How I made them

- I made the sprites in Piskel.
- I got the sprites from http://untamed.wild-refuge.net/rpgxp.php

Problems/Solutions

- One problem I had was that I had to get them to move.
- Once I got them to move, they were really shaky.
- I fixed their shaking by changing the code and also making it so that they wouldn't just walk in a straight line.
- I had to code them so that they would randomly go up, down, left, and right.

Item Sprites

How I made it

I made the items in Piskel. I had to make them smaller because they were super big.

Problems I had

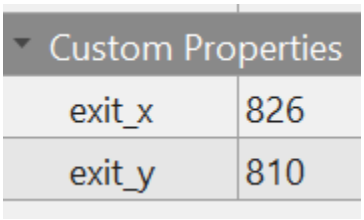
I actually didn't have any problems.

These are my items. The first one is my fork, the second is my bread, the third one is my magic lamp, and my last one is my compass.

Coding

Exiting the Rooms

I had to figure out how to get my sprite out of the different rooms. I had an idea to give the sprite a certain place to land every time it left a building. I would add the coordinates so that my sprite would land there every time. I added a custom property to the houses in Tiled. The property I added was the coordinates of the tile right outside the building. This helped because I made code that can go into the custom property and reset the player outside of the house every time they leave the building. This is really nice because you will know that the sprite will reset in the same position every time. These are the custom properties for the restaurant.



Custom Properties	
exit_x	826
exit_y	810

Sprite Dialogs

I made the sprites talk by adding a collision. Collisions are when the player sprite touches something else. In this case it would be if the player sprite touched one of the character sprites. If the player touched the sprite, they would stop moving. When you click the spacebar, the sprite begins to talk. They tell you that they have an item that is missing. If you come back after they tell you that, and you haven't found their item, they will say something different.

Quests

I made my quests by adding a class. A class controls all of the code in that group. I had to add all of my quests into the class. If I didn't do this the code couldn't work. The quest class has a status that runs the code. The quest class helps to keep track of all the different quests. This is my quest class:

```
class Quest ():

    def __init__(self):
        self._name = None
        self._location = None
        self._status = 0
        self._item  = None

    def __init__(self, name, location, item):
        self._name = name
        self._location = location
        self._item = item
        self._status = None
        self._future_status = None
```

Experience

Last year when I made my computer project, I already knew a lot about Scratch. This year, I used Pygame and Python. At first, I didn't know anything about how Pygame worked. Pygame is a lot different from Scratch. Scratch uses blocks to write code, but Python and Pygame shows you how to actually write code. Even though Scratch and Pygame are different, there are still some similarities. Scratch and Pygame both use if, then statements. Pygame also has an if, then, else statement. Even though I'm not really used to Pygame, making this game has been really fun. I had a lot of help, but that was because I was new to learning the programming language. One part that I enjoyed was getting to see if the code worked and seeing it succeed. If it didn't work or do what I wanted, I had to go back into the code and fix the bugs I had. I also didn't know how to make the graphics. Last year when I used Scratch, I already had a lot of the graphics and only had to find a few. This year, I've had to learn how to make some of the graphics. I learned how to make the maps and found the sprites. I've learned how to do a lot from this project.

References

- Python Programming Language
  - https://docs.python.org/3/
- Pygame Library
  - https://www.pygame.org/docs/
- PyTMX Library
  - https://github.com/bitcraft/pytmx
- Pyscroll Library
  - https://github.com/bitcraft/pyscroll
- Pyscroll Tutorial
  - https://github.com/bitcraft/pyscroll/wiki/Tutorial
- Sprite download site
  - http://untamed.wild-refuge.net/rpgxp.php
- Sprite download site
  - https://www.kenney.nl/assets/page:2
- Sprite editor
  - https://www.piskelapp.com/user/6328003648290816
- Map maker
  - Tiled
- Vector Images
  - Inkscape
- Fonts and Dialogs
  - https://stackoverflow.com/a/60998091/516746
  - https://cmsdk.com/python/rendering-text-with-multiple-lines-in-pygame.html