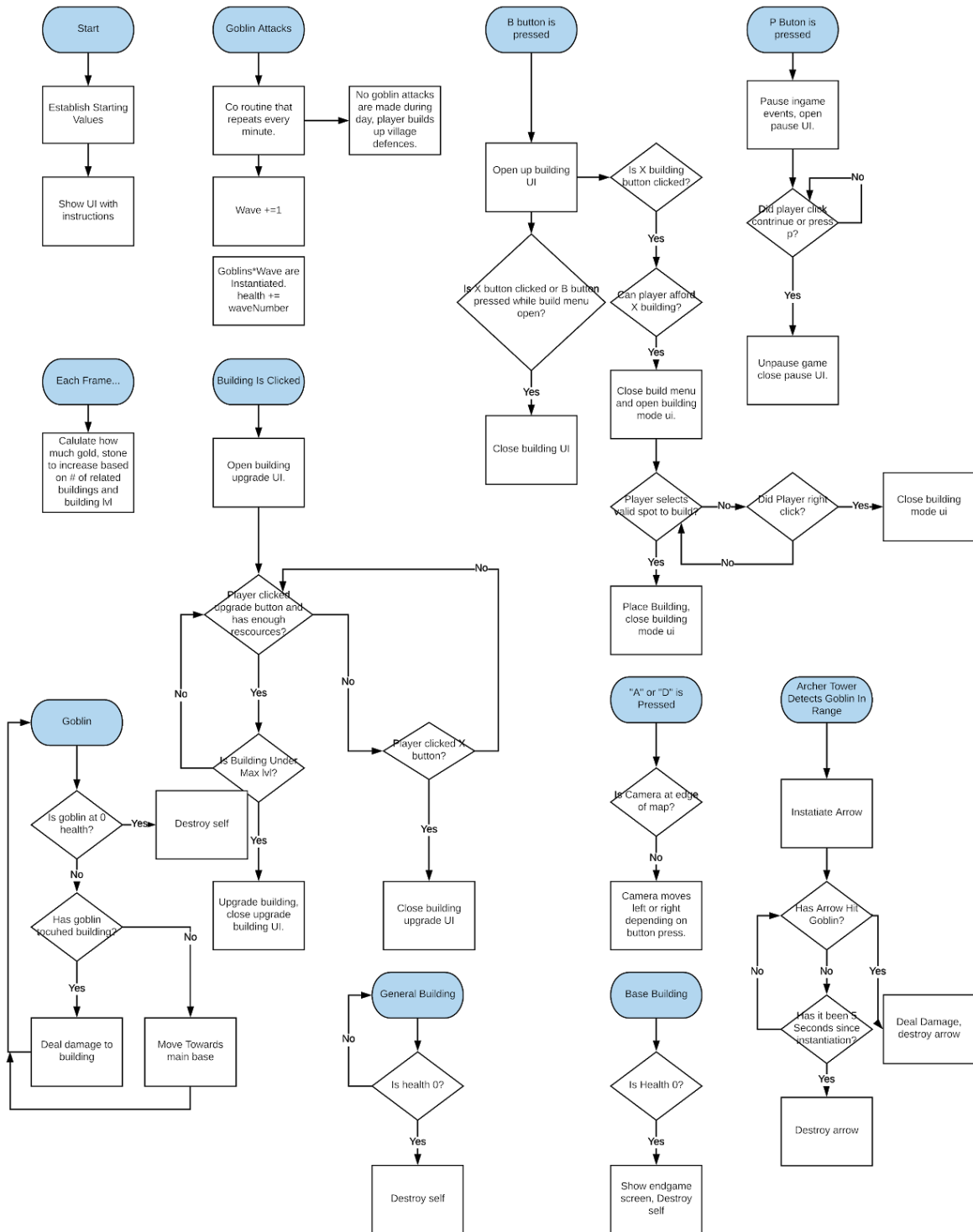


CASTLE GAME DEVELOPMENT

Sammy Dods

Input	Processing	Output
A,D	Detect if buttons are pressed	Move camera left or right
Click.	Detect if any gui elements or interactable objects are clicked.	Run script related to event.
Click Building	Detect if building is pressed. Send that info to upgrade menu.	Open upgrade Menu.
B	Detect if button is pressed	Open build UI
P	Detect if button is pressed	Open pause UI, pause game

Not a lot of inputs if UI is grouped together.



List Of Resources:

House sprite: Emmanuel Flavour

Barn lvl 1 Sprite: Hamza Khan

Unity with C# Visual Studio

Paint.Net for quick sprites.

Bosca Ceoil for quick music

Tutorials:

- How to instantiate classes
https://www.youtube.com/watch?v=_hl9uwvsBng&list=PL LH3mUGkfFCU0r9DkUKwRduWpcmpAzojc&index=28&t=435s
- Based my Archer Tower around this getTarget method:
- <https://forum.unity.com/threads/tower-defense-2d-i-cant-see-the-arrows-sprite.340253/>
- https://www.youtube.com/watch?v=zc8ac_qUXQY How to start menu
- <https://www.youtube.com/watch?v=YOaYQrN1oYQ> Volume slider

Debugging Code:

Creating an Object

According to my understanding of creating an object from a class it required using a constructor method. Unfortunately that doesn't work in unity. I ended up not even using Constructors or even the start() method in favour for the awake() method.

I eventually found out that Unity scripts have to be attached to a GameObject and can't be instantiated on their own. Using the Instantiate() method with the class attached to a prefab you can insert objects into your game.

Static Class Accessing non static data?

I wanted a script that had one copy of data for a game manager script. I thought this could just be done by making a static script. This however would not work since a static class can't access non static objects that I wanted a game controller script to access and control.

That's when I came across this article: <http://clearcutgames.net/home/?p=437>

It turns out there's a way to Instantiate only one copy of a script (therefore you only have one copy of class variables like a static script)

Overriding a base class's functions

I wanted the main base class to override the building class's Checkhealth function. I thought it was enough for the Building class to be abstract and make Base a subclass but it wasn't. You have to declare the function in building as virtual to indicate that it can be overridden.

Collider2D problems

I've had issues implementing collisions in my and specifically detecting them. I eventually found out that Colliders require rigid bodies but I still couldn't figure out how to use them successfully.

Eventually I switched to Trigger Colliders and they worked pretty well for what i needed. I ended up using them everywhere I needed to detect collisions.

Applying Force to the Arrow

I had trouble launching the arrows, eventually I settled on Rigidbody2D.MovePosition. It didn't work until i found out that the rigidbody type had to be kinematic. Still have issues with speed.

Couldn't link Arrow to Archer Tower

I couldn't set the arrow as a public GameObject and link it in the editor. I ended up just loading it from assets folder in the script. -not quite sure about the implications on performance depending on where i load it from.

No Archer Tower Upgrade?

For whatever reason upgrades were not working for the Archer Tower class.

The errorcode was that the upgrade array was out of scope so I thought the Archer Tower level might be the issue. Since if the starting level was 0 Array[level-1] might not work out so well.

It turned out that the array was actually empty, somehow the references had been lost, when I restored them it fixed the bug.