Making Health UI

Introduction

Many games feature health or a way of measuring how much damage a player can take before their character is defeated. During the group project I worked on creating several of the UI elements for the project.

Method

To create health you simply need to have a variable either as an integer or a float. We made the choice to have an integer as it's much easier to handle damage values to the player as a whole number rather than to a decimal place.

The choice to make an irregular progress bar for the characters was to help to keep players focused on the game rather than the looking at the edge of the screen.

The simple premise is that a material instance is created that has a value passed through to determine the percentage of the material that is filled displayed. This is simply done with an if statement however Unreal Engine handles that value between white and black as a float. Which meant that the health value needed to be converted down to a float.

Fig 1. Health UI in game

Test Driven Development

The Health UI underwent several changes, often having minor fixes such as resizing. It however did undergo some serious changes to it's functionality from originally having a scalable colour change from green to red, it was decided that simply using characters colours would be easier for identifying individual characters.

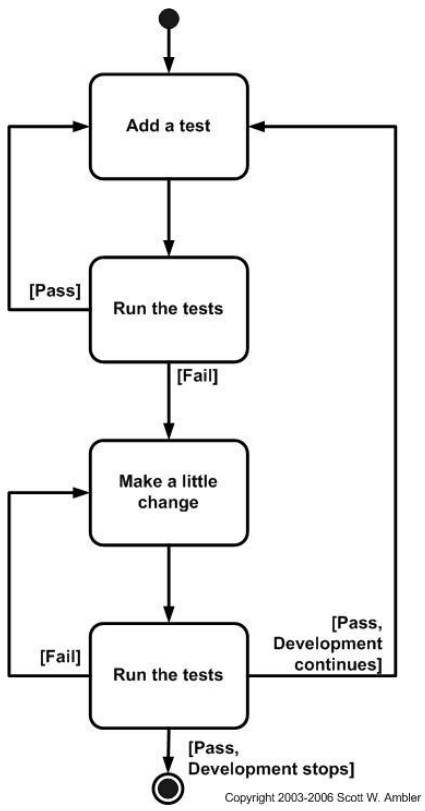

Fig 3. Example of test-first development

http://agiledata.org/essays/tdd.html

Adapter

It became quickly apparent that creating a way to convert or adapt the health system in-game would be needed if this type of display was going to work, I decided that it would be best to include this adapter system in the actual UI widget. Having the adapter as a part of the widget allowed for a more robust system that can work with all actors on-screen rather than just one class. This also meant that none of the changes made to rebalance the game affected the system as they didn't have any hard coded values.

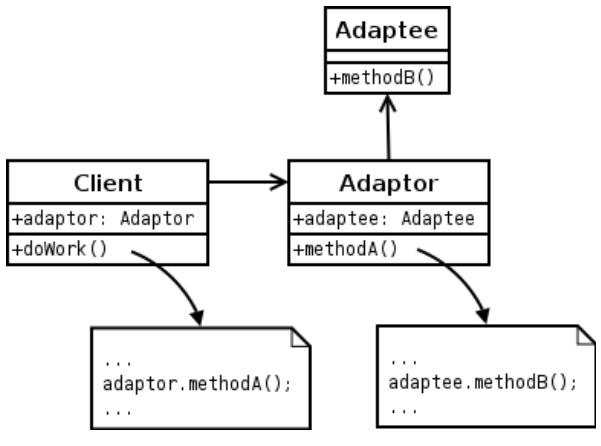

Fig 3. UML for Adapter

https://en.wikipedia.org/wiki/Adapter_pattern