

Minh Nguyen

CS 162

Design for Assignment 4

To begin my design for this program, I will continue with my program from assignment 3, but make some major changes. The first thing that was asked of me to do was to create a virtual function in the parent class to make it abstract. My problem is that in assignment 3, I did not create a function to implement taking damage, but rather I just did the math of damage taking in the main functions. So this time around, I will out the algorithm for damage taking in the main function, and instead put it inside each damage taking function of every creature. I will create a virtual function called `DamageIntake`, and it will take two parameters, one being the attack roll, and one being the defense roll. Then I will take the two numbers from the rolls and subtract it from one another, as well as the armor that belongs to the defender. This should take care of the virtual function requirement, as well as making my parent class a true abstract class.

I intend on making several special abilities to override the virtual function. It seems to me that the blue men are a little overpowered with their base stats, so I intend on adding a function such as crippling despair or something since they are blue, and if they roll a certain number, say anything from 5 to 10, then their attack is reduced by half for the next attack. Also, Goblin seems to be quite underpowered so I feel I will give them a special critical hit attack, perhaps a kidney strike move, that means they will have an attack do double its damage if they roll a certain number. The barbarian and Reptile men seem fine for now, so at the time

of writing this design I don't plan on giving them any special functions, but if I do I will be sure to document it.

For the requirement of redefining a function, I will create a subclass of Barbarians called Warriors. I will allow warriors to carry a shield and sword, so this means their armor is a little higher than Barbarians, but their attack is going to be a little bit less. For the most part, they will have the same functionality as the barbarian, with just slightly different armor points and attack damage.