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Project 3

Reflection:

My biggest challenge in this project was starting it too late at night and not using any inheritance while setting up my character classes. I ended up having to completely restructure my classes to get things to fit the requirements.

Other than that, the only other issues I ran into was implementing the special abilities, more specifically how to handle the vampire charming someone. At first I was trying to return zero damage, which was causing my damage formula that was printed at the end of the round to not match the actual damage inflicted. It took me having to take a step back and replan it before realizing I can sure set it equal to the attack roll – defenders armor. Another minor hiccup was how to handle the outputs when Medusa glared at a vampire, but the vampire charmed Medusa. The final printed statements still seem a little off to me, but was the best I could come up with to explain why no damage was done and keeping the special abilities completely inside their classes and not calling a get type to see if Madusa was the one who rolled the 12.

All in all, this project went very straightforward without any major errors, just a couple of mistakes on my part for starting when I was too tired.

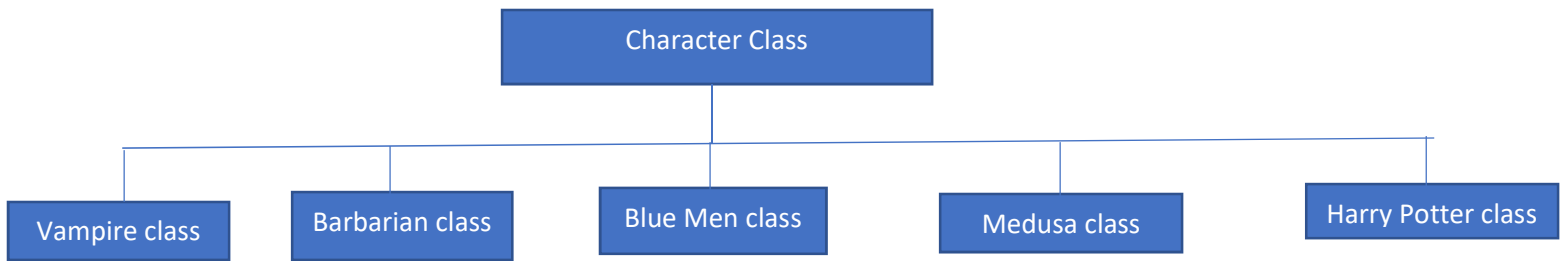
Starting Menu test cases

Test case	Input Values	Driver Function	Expected Outcome	Observed Outcome
Function a not an unsigned integer	A, 1.5, -4	ValidStr()	Display error, repeat options to user	Display error, repeat options to user
Integer not a valid option	10	ValidStr()	Display error, repeat options to user	Display error, repeat options to user
Integer first option	1	If firstPlayer == 1	Creates new vampire object	Creates new vampire object
Integer second option	2	If firstPlayer == 2	Creates new barbarian object	Creates new barbarian object
Integer third options	3	If firstPlayer == 3	Creates new blue men object	Creates new blue men object
Integer fourth option	4	If firstPlayer == 4	Creates new medusa object	Creates new medusa object
Integer fifth option	5	If firstPlayer == 5	Creates new Harry Potter object	Creates new Harry Potter object

Continue Menu test cases

Test case	Input Values	Driver Function	Expected Outcome	Observed Outcome
Function a not an unsigned integer	A, 1.5, -4	ValidInt()	Display error, repeat options to user	Display error, repeat options to user
Integer not a valid option	5	ValidInt()	Display error, repeat options to user	Display error, repeat options to user
Integer a valid option	1	validInt(), if statements	Print starting prompts and get inputs for functions	Print prompts and get inputs for functions
Integer second option	2	Return	Quit program	Quit program

Class hierarchy:



Design:

- Base class
 - Abstract class, virtual functions that = 0
 - Functions
 - Attack
 - Defense
 - Takes roll, attack points, and calculates actual damage inflicted then updateStrength
 - getArmor
 - getStrength
 - updateStrength
- Menu
 - Display names and get user to pick two
 - Can pick two of the same characters
 - Print round stats including
 - Attacker type
 - Defender type, armor, strength
 - Attackers die roll
 - Defenders die roll
 - Damage inflicted calculations
 - Defenders updated strength points after attack
 - If defenders die, ends game
 - Continue
 - 1 continue
 - 2 quit
- Vampire class
 - Attack
 - 1 12 sided die
 - Defense
 - 1 6 sided die
 - Charm power- 50% chance to charm attacker into not attacking for any attack
 - Trumps medusas glare if happens at same time
 - Takes roll, attack points, and calculates actual damage inflicted then updateStrength
 - getArmor
 - 1
 - getStrength
 - 18
 - updateStrength
- Barbarian class
 - Attack

- 2 6 sided die
 - Defense
 - 2 6 sided die
 - Takes roll, attack points, and calculates actual damage inflicted then updateStrength
 - getArmor
 - 0
 - getStrength
 - 12
 - updateStrength
- Blue men class
 - Attack
 - 2 10 sided die
 - Defense
 - 3 6 sided die
 - For every four points strength lost, lose a defense die, represents loosing a couple of little blue men
 - Takes roll, attack points, and calculates actual damage inflicted then updateStrength
 - getArmor
 - 3
 - getStrength
 - 12
 - Mob power- for every four points strength lost, loses one defense die
 - updateStrength
- Medusa class
 - Attack
 - 2 6 sided die
 - Glare power – if rolls a 12, target instantly gets turned to stone and medusa wins, unless against harry potter who still has Hogwarts power left
 - Defense
 - 1 6 sided die
 - Takes roll, attack points, and calculates actual damage inflicted then updateStrength
 - getArmor
 - 3
 - getStrength
 - 8
 - updateStrength
 -
- Harry Potter class
 - Attack

- 2 6 sided die
- Defense
 - 2 6 sided die
 - Takes roll, attack points, and calculates actual damage inflicted then updateStrength
- getArmor
 - 0
- getStrength
 - 10
 - Hogwarts power- if strength ≤ 0 , resets to 20 one time per fight
- updateStrength