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Fantasy Combat Game (project3)

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This project we are asked to develop a fantasy combat game. In this game the users will be able to choose from five different characters and then they will battle using a dice rolling functions to lower each other’s strength. When a user strength hits zero the game is over (most of the time).

First thing that needs done is I need to identify classes and objects

Classes: Character, Barbarian, Blue Men, Harry Potter, Medusa, Vampire, Fantasy Game, Menu, Validator

Objects: Player 1: object that is created to store the chosen Character for one

Player 2: object that is created to store the chosen Character for two

Game: This will be the object that all the dueling is done in

Questions: The question used in the menu class which gets users response

Second, we will define each class’s attributes

Class name: Character

Attributes: attack, defense, armor, strength, name, number of attack die, number of defense die, number of die sides

Class name: Barbarian

Attributes: inherit attributes from Character class

Class name: Blue Men

Attributes: inherit attributes from Character class

Class name: Harry Potter

Attributes: inherit attributes from Character class

Class name: Medusa

Attributes: inherit attributes from Character class

Class name: Vampire

Attributes: inherit attributes from Character class

Class Name: Game

Attributes: Player1, Player2

Class Name: Menu

Attributes: menu1, menu 2, question, answer

Class Name: Validator

Attributes: checks input

Third define each of the class’s behaviors

The Character class activities are to start the parent member variables that all the children classes will inherit for instance the get/set attack die functions, get/set defense die functions, get/set armor cost functions, get/set strength functions and get/set name functions.

The Barbarian class activities are to inherit variables form the parent class Character.

The Blue Men class activities also to inherit member variables from the parent class.

The Harry Potter class activities also inherit variables from Character class.

The Medusa class activities also inherit variables from Character class.

The Vampire class activities also inherit variables from Character class.

The Game class activities will be to run all aspects of the game which include set the players to their chosen character. The class also handles all the dice rolls for the character which is the way they attack and defeat their opponent also displays each round to see where each character is at strength wise.

The Menu class’s activities ask user questions on which character they wish to use, if they would like to exit.

The Validator class’s activities check to make sure user input is a valid entry

Fourth the relationship between classes

The relationship between character>>> children classes = access, character >>>menu = none,

character>>>game = access, character >>>validator= access

The relationship between children (barbarian, blue men, harry potter, medusa and vampire) classes>>>character=access, children >>>menu=none, children>>> validator=access, children >>> game = access

The relationship between menu>>>character=access, menu>>>game=access, menu>>>validator=access, menu>>> children=access

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Menu choice | Test Plan | Input | Expected Output | Real Output | Observation |
| Character selection menu | Enter a letter | Enter ‘a’ | invalid | invalid | Worked as planned |
| Character selection menu | Enter to high/low | Enter a zero/5 | invalid | invalid | Works correctly |
| Exit the game menu | Enter to high/low | Enter a zero/5 | invalid | invalid | Works correctly |
| Exit the game menu | Enter a letter | Enter ‘a’ | invalid | invalid | Worked as planned |
|  |  |  |  |  |  |

Reflection:

The Fantasy Combat Game was the smoothest project I have had in 162. After the initial pre planning on how I needed to set up the parent and children classes. I had to pseudocode on the actual duels using a die like function. Since we already had a die game I was able to use that lab to help get my rolls. Then I needed to establish how I was going to get that info into the character objects. After all the pre planning I started to write my code. The parent class and children class were pretty basic the main issue was how I was going to handle the character special abilities. Most of them were able to over write the parent class with the specials in the function that the ability was in. Some of the specials were defensive oriented, some attack and others were based on the damage obtained. The ability to overwrite the parent class allowed these to work as intended. I then started with the game class, this class is where the majority of the program takes place. I used the same menu class I always use to let the player pick the characters that will duel. Next up was the game this is where I was running into most of my issues. The first problem I occurred was when it compiled I was trying to cout my void strength down function to get the new strength after each round. I fixed this by passing the damage into the function and allowed it to reset strength. I also changed it a little by setting the attack and defense rolls from each player into variables then did the proper math to get a damage dealt variable to pass into the strength down function. The next issue I was having in the play function was for some reason my math was not adjusting the strength to the proper number this was an easy fix. It turned out that I was calling the attack and defense function twice the first one was in the correct spot but I was calling them again in a cout when I was trying to just get the attack and defense rolled to print. I already had these rolls set to an int so I just switched the function calls to the int and the problem was solved. The last issue I had in this function was if the attack was lower then the defense it was doing some strange stuff this also was an easy fix. I just put an if/else in there to see if defense was greater then attack strength down was zero if this wasn’t the case then adjust strength down with the incoming damage. After getting it to run properly I ran valgrind and had zero leaks. This project was lots of fun and I am looking forward to seeing what is next for the fantasy combat game