ft_arena

Introductory Object Oriented Programming

Michael Lu mlu@student.42.fr

Summary: This project is about creating fighters who will battle it out in the arena

Contents

Chapter I

Foreword

Have you ever wondered how to write and structure your own game?

A game infamous for having a very talent team of programmers but failed to execute is IMC Games, the producers who created the new MMORPG Tree of saviors. This team contained developers from a team called Gravity which was famous for Ragnarok Online, a old school 2.5d MMORPG that had an emphasis on social play. So what went wrong with tree of saviors?

IMC Games had previewed alot of crazy cool stuff like having four main class that can branch into multitude of classes. Boasting eight new classes (two for each four main class) at each rank (currently at nine ranks), you had 76 different classes! Imagine being able to build any kind of class you wanted with those combinations! However, it was only but a dream.

Sure they succeeded in implementing this cool idea, but they had alot of optimization issue and balancing issues. There were constant server problems, latency and imbalanced classes that slowly dwindled the player community. By the time the developers had fixed up majority of the optimization issue, balancing issue and server issues the damage has been done. Most of the hype was gone and many gamers had moved onto other MMORPGs. Was it how they written the game that killed it? Maybe it was their structure? Who knows.

As someone who still players Tree of Savior I hope this tidbit gives you some interested insight.

Chapter II

Introduction

The goal of this project is to create a fun arena simulator where you your own characters who will fight for the death! Let's be real, it's exciting to make a game and learn the skills to do so, but it's important to start with the basic. What are classes? What is inheritance? Did you know that ruby and python has almost everything as objects/classes? I bet you didn't know that, and for that reason makes the language unique from others.

⚠ `If you are using python or another language approved by hack high school make sure to research into python equivalent concepts on your own. This project can be completed in any approve project language, however the tutorial and video guides will be in Ruby.`

So how do you even start making an arena simulator? Simple. First, you need to contain information for your fighters. Second, you need to make every fighter unique. It'd be boring if they all did the same thing. Lastly, you need to make them fight. And guess what? All of this can be done using object oriented programming. After you learn classes you'll never go back. The skills you learn from this will only help you should you choose to do any other projects, as using classes can easily help you scale and complete more difficult projects. So let's start with the basics first.

Chapter III

Goals

The goal of ft_arena is to introduce you into basic object oriented programming. By the end of this project you should know how to:

- Design classes (parent, children, etc)
- Utilize inheritances
- Utilize multiple classes
- Create class interactions
- Be awesome

You will be exploring a fundamental topic of object oriented programming so take advantage of all the resources including the video, your neighbor and google. There are many tutorials on classes and inheritance.

Chapter IV

General instructions

- This project will only be corrected by actual human beings. You are therefore free to organize and name your files as you wish, although you must respect some requirements listed below

- Your must have a parent class and a children class (they do not need to be named parent/children, but it should be easy to see which is the children and which is the parent)

- A container class is optional but highly recommended

```
It will help you alot to practice writing your parent and children
class first. After you can focus on writing your container or main
and storing your classes. I recommend a container with an array to
store your classes. You can see this demo in the tutorial video.
There are other ways to store your classes so feel free to choose
what you feel most comfortable with.
```

- Your project must be written in a language approved by the hack high school program

- You must create at least three unique children class

- You must have a menu/selection screen for people to choose the name and class/job/specialization of your fighter

- You must allow the ability for people to pick which fighter they want to have fight against eachother in the arena

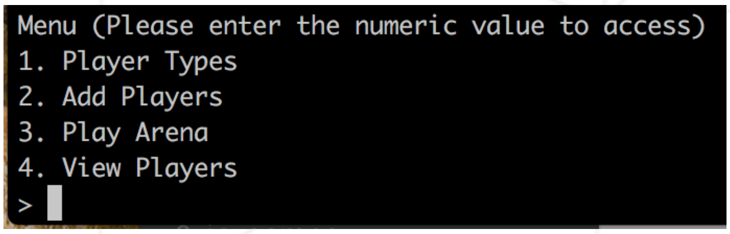
- You must use at least two variables for the parent class: health and attack. You can shorten these names or rename them, but you must have some sort of health and attack variable

- Ask your peers, mentor, slack or anywhere else if you need any help, and make sure to have fun

Chapter V

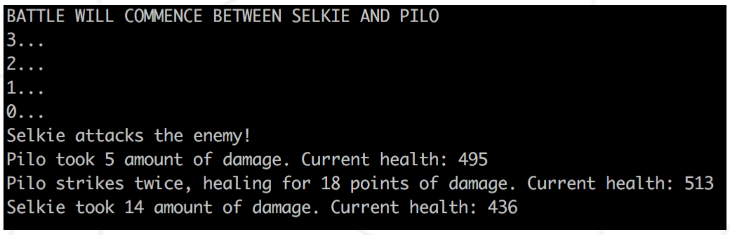
Mandatory part

- The goal of this project is to create a simple program that will take two fighters and make them fight eachother
- All fights will be one on one, so do not worry about having more than two fighters fighting eachother at the same time
- At the beginning of the program the users should have a menu that allows them to create a fighter, start a fight in the arena, and to see all the fights available (any extra stuff is fine)



```
Menu (Please enter the numeric value to access)
1. Player Types
2. Add Players
3. Play Arena
4. View Players
> 
```

- Only health and attack is required variable for the fighters, feel free to add any other variables if needed
- When the user chooses to have fighters fight in the arena they must be able to select two unique fighters. The fighter cannot be the same fighter.
- You can choose to reset the fighter after the fight, or leave them weaken/incapacitated from their previous fight. It is not required to have all the fighters fully heal for the next fight.
- You must display all the fights out to the terminal



```
BATTLE WILL COMMENCE BETWEEN SELKIE AND PILO
3...
2...
1...
0...
Selkie attacks the enemy!
Pilo took 5 amount of damage. Current health: 495
Pilo strikes twice, healing for 18 points of damage. Current health: 513
Selkie took 14 amount of damage. Current health: 436
```

- It should be clear in the terminal who is attacking and who is taking damage
- When a fighter's health reaches zero the fight is over and the victor must be declared in the terminal.
- When the fight is over you must have the user redirected back to the main menu where they can create more fighters or do more fights

`How you structure your while loops, and if/else, case switch, hash table, etc. Can make or break your menu. Consider designing something simple that is easy to repeatedly call the menu and easy to add stuff onto the menu.`

- You should try to make the user experience as enjoyable as possible. For this reason the user should be able to see all created fighter so they can pick them for the arena fights.
- Because you are simulating a simple arena fight make sure you delay your terminal output. Having the entire battle post immediately to the terminal instantly is not okay.
- You must handle any kind of user error to the best of your ability. The most vital one is to make sure there is no error in creating a character, and there is at least two viable fighters to put into the arena together.

Chapter VI

Bonus part

Remember this is a simple self automated simulator, kind of like a game. For this reason there are many things you can do for bonus. Feel free to add whatever you'd like to spice up your program as long as you meet all the requirements above. Some things you could try out for bonuses are listed below:

- Sound effects
- Additional classes
- Cool text/color effects in terminal
- Any visualizer
- An amazing game container that holds all their classes
- Unique skills, attributes or stats
- Additional mechanics, or randomness to the fight
- Any other cool features you can come up with to enhance your simulator!

Chapter VII

Turn-in and peer-evaluation

Turn your work in using your `GiT` repository, as usual. Only work present on your repository will be graded in defense.

Good luck and remember to have fun!