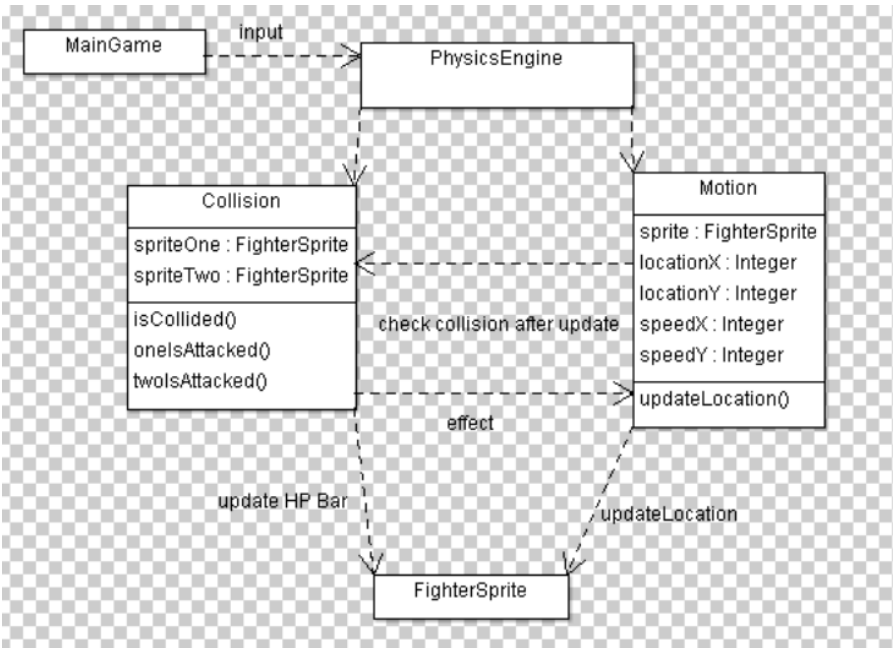
# CPS 108 VOGGA Individual Design Proposal

Name: Donghe Zhao
Date: April 1st
Genre: Fighting Game
Teammate: Hareesh, Helena, Chen, Peggy, Wendy, Hui
UTA: Nathan, Tanner

In this project, I am responsible for “Physics Engine” part which includes “Motion” and “Collision”. The main function of “Motion” is to calculate and update the location of every FighterSprite. While the main function of “Collision” is to check whether there is collision between two groups of FighterSprites, and identify which one is attacked. After that, there is to reflect to the attacked FighterSprite.

Now, let’s talk this process in detail. We get “input” from the MainGame, the “input” includes the action from players, such as what key the players press now, and the system timer that helps physics engine to check and update every specified time. When Physics Engine gets this input, it will calculate the new position, if the new position is out of the background, we should force it to background. In other case, the new position is just the former position plus the speed times direction times eclipsedtime. After we calculate the new location, we check whether there is any collision between two groups of FighterSprite in our screen with their new location. If there is no collision, we just need to wait for next input from MainGame. While, if there is some collision, we should figure out which side is attacked, and how much damage it should get. And then send its feedback to the FighterSprite. The FighterSprite will update its HP bar, location and so on. Here is the UML of this part.



However, there are really some tough problems that need me to consider. For example, as UTA Nathan said “what if the fighting game is in the water how to calculate location”. It is a very good question, which reminds me that I really need to consider many special cases. I think basically I plan to use Strategy method to solve this problem in the high level, that means I think of a lot of solutions for each specific case. This is really a very complicated parts. I cannot come up all the cases now, so I have to cover some cases now and consider others in the next couple of weeks. I believe I can do it well. Thank you!