3.3 Class Diagram for Space Adventures

This diagram is a model of our SRS document section 3.3 Projectile feature. It shows all the relevant interfaces, classes and functions involved with how guns and projectiles are made and how spaceships will launch them. This diagram will also help anyone trying to implement different types of guns and projectiles. A projectile will inherit all its features and functionality from the MoveableHealthyObject class as it is just an image that will spawn and move until it collides with another MoveableHealthyObject. Its constructor will take in the gun that has fired it as its parameter so that it knows where to spawn and in what direction it will move. The Gun interface is responsible for spawning projectiles. There is currently one implementation of the Gun interface: DefaultSpaceShipGun. All spaceships will start with this default gun implementation and an abstract fireGun function. UFO and Player both inherit from SpaceShip and will implement fireGun separately because different events will trigger the gun being fired. In the case of a Player, a left mouse click will trigger fireGun which will call gun.spawnProjectile(this.gun). In the case of a UFO, the fireGun function will have a timer that triggers gun.spawnProjectile(this.gun) according to is rate of fire.