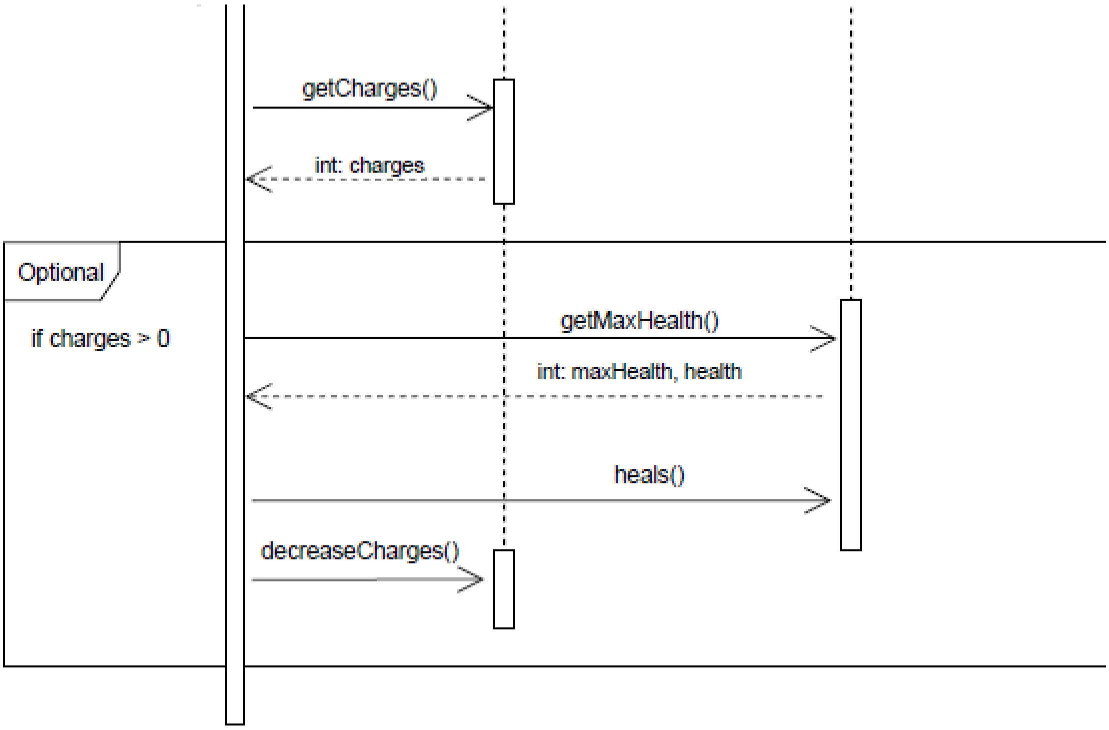
Lab 3 Team 4 – Design Rationale

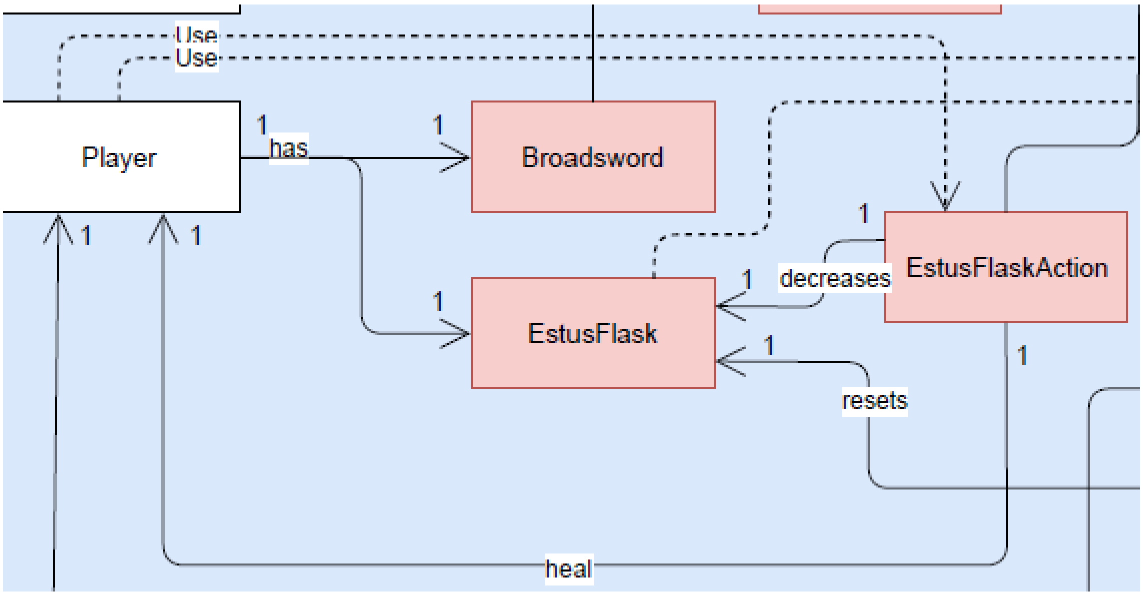
Estus Flask – justification for design

Player has association with Estus Flask as it is in the player’s inventory at all times, it does not extend from the item class because it has no need to inherit functions such as drop item, pick up item, etc. Estus Flask also has an Action to heal the player, this is represented as the EstusFlaskAction class which inherits from the Action parent class. EstusFlaskAction does 1 thing before healing the player, that is to retrieve the Estus charges, if enough Estus charges are available the normal functionality of the Estus flask Is performed. *This is illustrated as below:



Optional (Opt) fragment is used here because there is no alternative to this if statement.

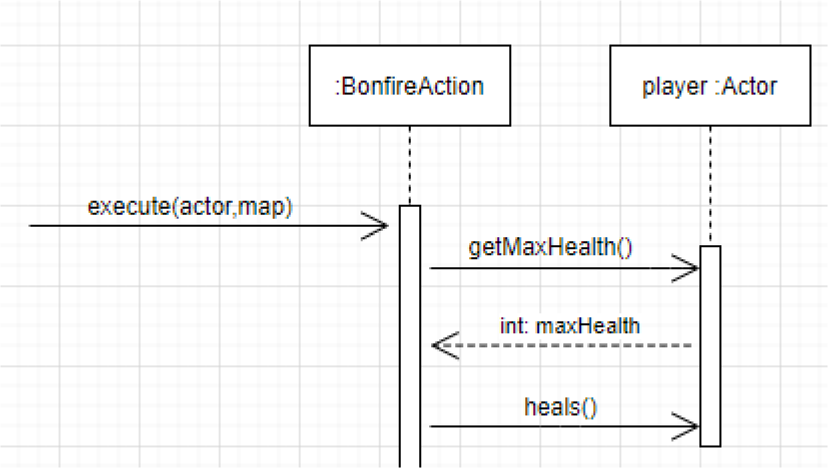
*Note that activation boxes correspond to EstusFlaskAction, EstusFlask and Player respectively.



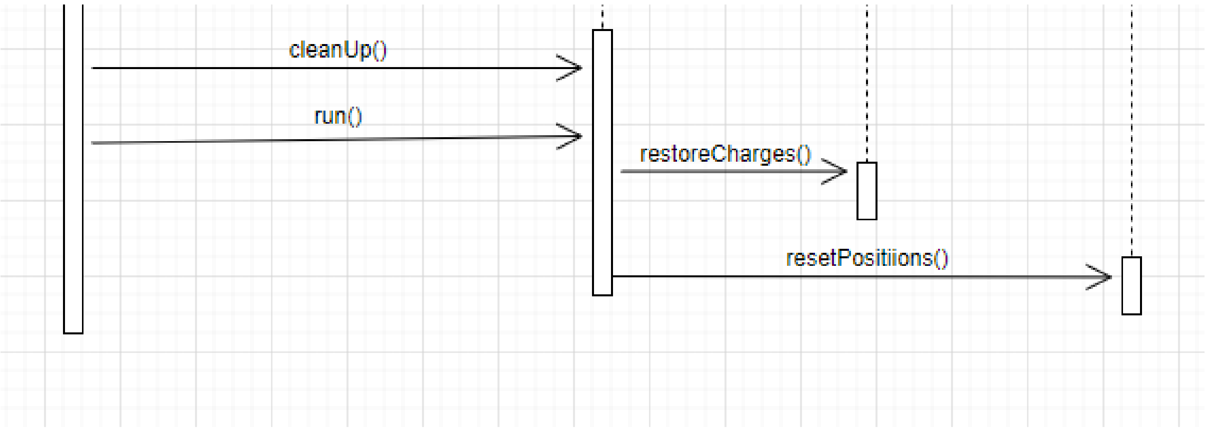
Additionally all association to the EstusFlask class is 1 to 1 because there is only one EstusFlask Class and only one instance of the other classes will interact with it. For example – only one player, one instance of EstusFlaskAction and one instance of ResetManager.

Bonfire – justification for design

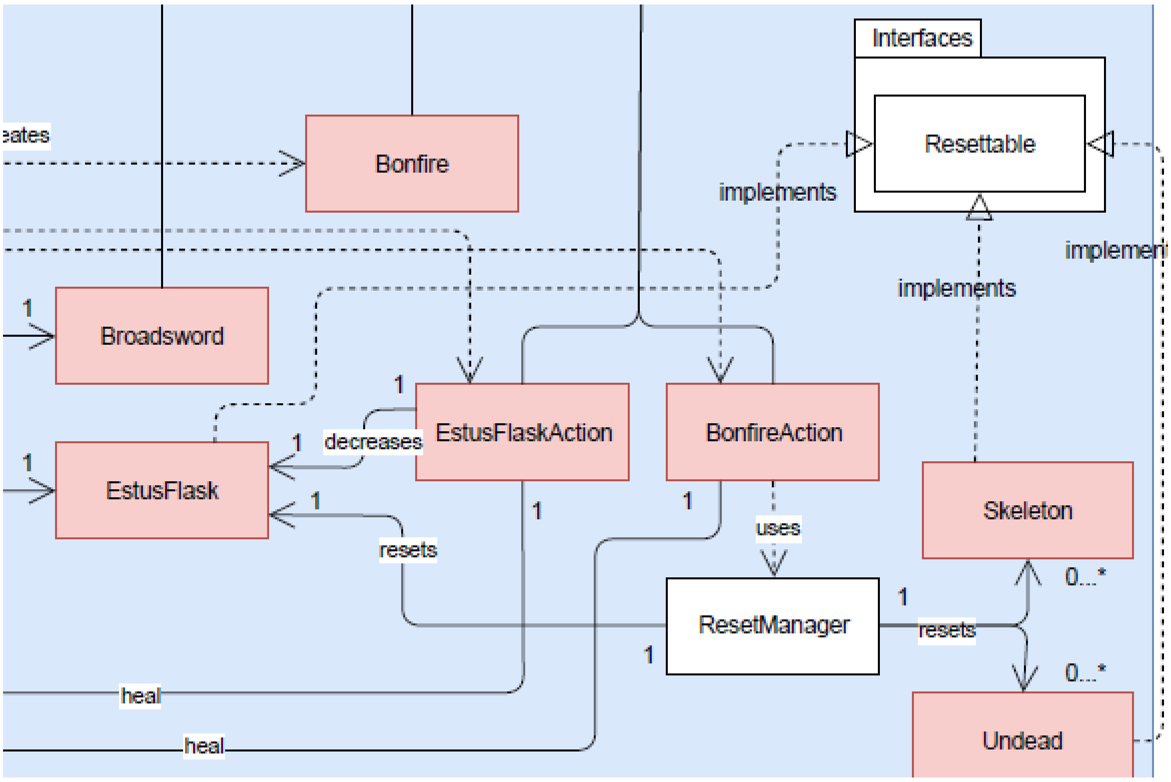
Application creates Bonfire and it is placed on the ground of the game world, it cannot be picked up so it is illogical to have it inherit from item. Because of this Bonfire inheriting from the Ground class would make more sense. Since it provides an interaction to the player, a BonfireAction class which inherits from the Action is created. The BonfireAction class heals the player to full health when interacted with:



It also uses the Reset Manager to remove undead using the cleanup() method and reset the positions of other enemies. Additionally Reset Manager also restores the charges of the estus flask



*Note the four activation boxes represent BonfireAction, ResetManager, EstusFlask and Skeletons in that order



Bonfire has no direct association with the other classes but BonfireAction and ResetManager do, BonfireAction has a one to one association with the player class as there is only one player to heal. And ResetManager has a one to one relationship with the Estus Flask (only one EstusFLask to restore) and a one to many relationship with the undead and skeletons as many of these could be "reset". Additionally any class that is "reset" by the ResetManager implements the resettable interface