REQ 5: Creative requirement – Consumables

Three new consumables have been added: GoldenSeed, SacredTear and PreservingBolus. These items all extend ConsumableItem (an abstract class which extends Item and implements Consumable). All three consumables adhere to four SOLID principles: SRP (the classes only have one responsibility; they have all functionality required to support that), OCP (extends and adds new functionality without modifying or breaking the original engine code), LSP (can be used wherever an Item instance would be expected) and ISP (fully implements and utilises the Consumable interface).

The GoldenSeed class represents an item that increases the maximum uses of the Flask of Crimson Tears, while the SacredTear class represents an item that increases the healing potency of the Flask of CrimsonTears. To do this, FlaskOfCrimsonTears has a getInstance method, since only 1 instance of Flask of Crimson Tears will exist at any given time. The getInstance method will return the sole instance of the flask, which can be manipulated as needed. A getInstance method was seen as necessary to adhere to LSP and OCP. The Flask is treated as a normal Item in the Player's item inventory, and it only has added functionality from extended classes and implemented interfaces, while the original Item class remains the same. Being able to access the Flask without type-checking, casting, or violating these principles is not possible without getInstance.

The PreservingBolus class represents an Item that removes the status effect ScarletRot from an actor. To do this, we implemented a simple version of status effects and a way to apply them. The Scarlet Rot can be given to actors with the capability Status.CAN_HAVE_DEBUFF by adding the capability StatusEffect.SCARLET_ROT and one of three values from the StatusEffectStrength enumeration. The capability Status.CAN_HAVE_DEBUFF is added to the player in the Player constructor, while the adding, removal and effects of Scarlet Rot is handled by the StatusEffectManager class static methods. StatusEffectManager to ensure that SRP is not breached by any other classes involved with status effects, such as RotPuddle (a child class of Ground that applies Scarlet Rot to actors standing on it), Player and PreservingBolus.