1. A description of the control flow for the interaction of the player avatar and a goodie. Where in the code is the co-location of the two objects detected, and what happens from that point until the interaction is finished? Which functions of which objects are called and what do they do during the handling of this situation?

The interactions between the player and the goodies are controlled by the StudentWorld object in the larger picture of the game. During every tick, the doSomething method of the PickupableItem is checking if the player is on the same location as the goodie object. If this condition is satisfied, the goodie “dies” (sets the health to 0) and the players points are incremented by the appropriate amount along with the appropriate action of the goodie implemented (the ammo goodie increases the number of peas of the player by 20, the extra life goodie increases the lives of the player by 1). All these actions are done by the function of isPlayerAbovePickup function as part of the StudentWorld object, which compares the colocations of the two objects (player and goodie) and enacts the appropriate action if the condition is satisfied.

1. A list of all functionalities that you failed to finish as well as known bugs in your classes

I couldn’t restrict the number of bots produced by a thiefbot factory in a given grid.

1. A list of other design decisions and assumptions you made

* **Pea Interaction with Walls and Factories:** It was specified that peas should set their state to dead when encountering a wall or a factory without causing damage. However, if a pea is on a square with both a robot and a factory, it should damage the robot. This decision ensures that gameplay remains consistent and predictable for the player, focusing on the primary targets (robots) over inanimate objects (walls, factories).
* **Pea Interaction with Other Actors:** The specification details the behavior of peas with walls, factories, and robots, but it might not explicitly describe interactions with all other types of actors. I assumed that peas simply pass through goodies.