# Design Rationale for Requirement 7: Reset Game

## Explanation of system

This system enables the game reset functionality, which the player can use once per playthrough, to clear an overwhelming map. Resetting the game will have the following effects:

* Trees have a 50% chance to be converted back to Dirt
* All enemies are killed.
* Reset player status (e.g., from Super Mushroom and Power Star)
* Heal player to maximum
* Remove all coins on the ground (Super Mushrooms and Power Stars may stay).

## Choice

ResetManager class

## Justification

This class is the core class that upon being called, resets the various parts of the game. This class will call methods that access data from all across the system to reset them as needed.

## Choice

Resettable interface

## Justification

This class is used in order to track whether the game has already been reset or not. If the game has been reset before, it cannot be reset again.

## Choice

Removing trees

## Justification

When the reset is called, all trees have a 50% chance to be converted back to dirt. This includes any sub-class of the Tree abstract class, namely sprouts, saplings, or mature trees.

## Choice

Removing coins and killing enemies

## Justification

These are done with quite standard implementation. Any coins on the map when reset is called are removed. The player’s coins however, are maintained. Any enemies on the map are instantly killed/removed.

## Choice

Changing player health and status

## Justification

When reset is called, the player’s current health should be reset to its maximum value. This may differ from the starting value, if the player has increased their maximum health through items such as the Super Mushroom. Any Status effects on the player at the time of reset, should also be cleared. This includes buffs from the Power Star, or Super Mushroom.