**Project Logic**

Environment/ Game Logic

* Hunger -= 2 if hunger > 0
* Energy -= 1 if energy > 0
* Health -= 5 if energy | hunger <= 0

Randomness

* Chance to find food 0.7-0.9
* \*\*\* Give NPCs the choice to change occupation

States

* Health = 100
* Hunger = 0
* Energy = 100
* Wealth = 100

Actions

* 0: "Eat poison apple"
* 1: "Eat magic apple"
* 2: "Eat force apple"
* 3: "Eat heart apple"
* 4: "Sleep"
* 5: "Do nothing"
* 6: “Sell Item”
* 7: “Buy Item”

Reward

* += 1 per step
* += Happiness ( -1 to 2 ) per step
  + Wealth (Log)
    - Gold
    - Item Possession
  + Health (Error Function)
    - Hunger
  + Sleep (Error Function)
    - Energy

Supply and Demand

Merchants

* Increase Price if item sold the day prior (random between 0 – 1)
* Decrease Price if item **not** sold the day prior (random between 0 – 1)

Buyers

* Buy item from lowest seller for the day
* Sell collected items to highest offer of the day

NPCs Occupations & Skills

Merchant

* + 0.1 \* action wealth gain (buy/ sell)

Farmers

* + 0.5 \* action wealth gain (gathering) w/ 50% probability

Guards

* + 0.1 per step wealth gain
* -0.2% energy loss

Apothecary

* 50% probability double potions

King

* ??? maybe