**Documenting Implementation details**

Note : The purpose of this document is to properly identify requirements and think of how to implement each of them step by step. In designing them, we found that working on different tasks real-time and editing this document would be convenient.

Therefore, this document was written by collaborating on Google Docs. The link to the google doc is as follows and a complete version history can be found therein.

https://drive.google.com/file/d/1J0ZcoXvarpK8ISGHJvdi8UfM2XT\_LaWQ/view?usp=sharing

This document is to be the basis for the Design Rationale.

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| Zombie **Implement bite:**  Bite-Punch 50% ratio  Lower chance of hitting  More health damage  Bite = +5 health for zombie  (Decide on percentages)  **Weapon:**   * Zombie picks up weapon if weapon is near (at location) * If zombie picks up a weapon then punching will not be an option * zombies can only pick one weapon   If arm lost greater chance of biting and a 50% chance of dropping the weapon(**Dropping weapon) ---> Related to limb dropping, which is below**  **Every turn :**  Zombie saying braaaains or something similar ---- 10%  **Body**  If one arm lost,   * punching probability halved * 50% chance of dropping weapon   If both arms lost, weapon dropped  If a leg is lost, movement speed halved  If both legs lost, can still bite and punch | Create new Intrinsic weapon  In getIntrinsicWeapon method, return intrinsic weapon based on probability  Specify health damage  Implement a PickupBehaviour to check if the zombie is at a weapon location (The pickup behavior will return a PickUpAction or null accordingly)  Existing code accounts for:  Moving weapon to inventory, No punching when a weapon is in the inventory  If the zombie has a weapon in its inventory, don’t  check the ground(location) for weapons  i.e. pickupBehaviour will always return null  Add to Zombie’s playTurn method. Probably have a say something method, to randomly select a phrase.  Based on arm limb count, modify probabilities. In the method that detaches arms and legs, pass in location details. Drop weapons accordingly (Similar to code in attack action)  Speed change accounted for, by more misses….  (@ Suggestions are welcome) |
| Humans  If killed turn into zombies in 5-10 turns    Farmers   * 33% probability of sowing crop : If left alone ripen in 20 turns * Fertilize crops(reducing growth time) : 10 turns * Farmers harvest crops on dirt(every patch of dirt is a crop????) * Farmers drop crops after harvest * If hurt humans can eat crops to regain health +10? | In execute method, when an actor dies, check if the actor is a human and if so, remove it’s ALIVE, capability and add a capability of DEAD.  Have a tick method in human that keeps count, if the human’s capability is DEAD. Facilitate transformation(UNDEAD) after specified turns  Delegate playTurn method to Zombie.  Create farmer class  Add to code creating human type: farmer, in Application  Call method for sowing crops. (33% probability)  (playTurn) :  Or sowCrop behavior returning sow crop action, the execute method in sow crop action will create crop class at location.  Crop class: Extending Item. No portability. (Can’t be ground yeah?)  adding to the ground - use map.locationOf(actor).addItem(item/crop?) : Will enable ticking, in a crop class  In crop class,  Specify ripening time : Operate under default, Specify ticks (Similar to tick method in tree)  If farmer, speed up ripening time(reduce growth ticks)  (If location has farmer)  Overwrite ground with  Displaying crops -getDisplayChar()  (Existing code will do this as the map is drawn each tick)  If ripe, and farmer in location, harvesting  Upon harvest, create harvested crops class, inheriting from portable items and add items to location. Also remove item from crop(Or just change portability of crop instead)  ((crops extend Items))  if pickupitem instance of harvested crops/crop, call heal method, inherited from actor.  (Somehow enable crops to be stored in inventory, if health is full?) ----> Have a method for this |
| Player  Can harvest and store in inventory  Eat food to restore health +10  **(Additional - Print inventory)**  Weapon crafting  Zombie arm- club -25 damage  Zombie leg – mace – 35 damage  Attack on Zombie  Arm/leg falls off 25-40% chance??  Lost limbs fall to ground at location or adjacent  Cast off limbs as weapons, even without crafting | If player at location, call harvest procedure  Will have to set access inventory as an action and put it into allowable actions.  If the player wants to access inventory print the list of items in the inventory  get inventory from player actor  and print the list  A craft action class is needed.  Once the user selects the menu option. The execute method of the craft action class is called.  This will create mace/club (This can be put to a craft method in Player, if needed) and add to inventory and remove limb from inventory  HashMap for arms, legs (Is this necessary?, introduces the requirement to manipulate the count, However, a count is needed to limit the number of limbs falling)  Write a method in zombie that returns a limb, call this method after hurt. (Arrange for it to be called multiple times, with a rng involved). Add this returned limb to location as portable item. (@ Player’s location)  Create a new Actions class and add a CraftAction for the returned limb to it.  A menu description should now be visible.  If wanting to implement limbs as weapons, prior to crafting, create by extending WeaponItem  Implemented as such, the option for whether or not to craft the item, should now be visible. |