

Game Design Document for RAWR: Zombie Simulation [Working Title] by finiteLoops

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Objective: Influence a zombie hoard to conquer levels by killing or infecting all the humans on the map

Genre: Simulation, Action/Adventure, Horror, Puzzle [All of these are up for debate]

Game Elements:

Zombies:

- Move around as pseudo-random walk modified by
 - o How close they are to a **Human** who is not in a **Fort** or **Supply Depot** (slightly higher chance to move towards them that increases with proximity)
 - o They have a greatly increased chance to move towards **Gather Markers**
 - o They have a greatly increased chance to move away from **Avoid Markers**
- When they are within a set distance of a **Human** (very close range), they have a chance to either kill or infect them (default is kill, with a small chance of infection aka turning them into a new **Zombie**)
- Actions/stats can be modified by **Powers** (see gameplay description under "Possible Extra Features")
- Cannot enter into either **Supply Depots** or **Forts**

Humans:

- Move around according to limited AI
 - o They tend to move towards **Supply Depots** or **Forts**
 - o They avoid **Zombies** if they can "see" them (medium range)
 - o They attack **Zombies** if they are within short range
 - o If they have **Supplies**, they move towards the nearest **Fort** while avoiding **Zombies**, and will keep moving even when a **Zombie** is within shooting range
- If they come within a certain distance of a **Zombie** (short range), they can shoot them
 - o **Humans** must stop moving to shoot at a **Zombie**, they prioritize closest **Zombie** to shoot at
 - o It takes some set number or shots to kill a **Zombie** [Note: this could also just be a single shot kill, if there is only a percent chance of any given shot being a kill shot]
- A **Human** who comes within very close range of a **Zombie** will either die (be removed from the map) or be infected (converted into a **Zombie**)
- Any number of **Humans** can fit in a **Supply Depot** or **Fort**, but they can only remain there for a set amount of time (which is a fixed amount for a **Supply Depot**, but at a **Fort** is dependent on the amount of **Supplies** at that **Fort**)
- When **Humans** enter a **Supply Depot**, they pick up a set number of **Supplies** (regardless of the length of time they spend in the **Supply Depot**)
- When **Humans** enter a **Fort**, they deposit all **Supplies** they are currently carrying into the **Fort's** reserves

Supply Depots:

- **Supply Depots** can only be entered by **Humans** and cannot be entered by **Zombies**
- Any number of **Humans** can fit in a **Supply Depot**, but they can only remain there for a set amount of time
 - o The timer counting down the time until a **Human** needs to leave a **Supply Depot** is unique to each **Human**, so **Humans** will be individually forced to leave **Supply Depots**, even if there are other **Humans** who are still allowed to remain inside
 - o Once a **Human** has been forced to exit a **Supply Depot**, they must remain outside of it for a set amount of time until they are allowed to enter it again (they will not gain any more **Supplies** if they are already carrying a full load)
- When **Humans** enter a **Supply Depot**, they pick up a set number of **Supplies** (regardless of the length of time they spend in the **Supply Depot**)
- If there are multiple **Supply Depots** on a map, each **Supply Depot** has its own cooldown timer, so a **Human** kicked out of one **Supply Depot** may move immediately into another without spending a full cooldown period outside
- A **Supply Depot** never runs out of **Supplies**
- **Humans** can enter a **Supply Depot** from any direction
- **Humans** exit a **Supply Depot** in the direction that is the most clear of **Zombies**

Forts:

- **Forts** can only be entered by **Humans** and cannot be entered by **Zombies**
- Any number of **Humans** can fit in a **Fort**, but they can only remain there for a set amount of time
 - o The time a **Human** can stay in a **Fort** is directly proportional to the amount of **Supplies** in that **Fort's** reserve
 - o **Humans** cannot stay in a **Fort** that does not have **Supplies** unless the **Human** trying to enter the **Fort** is carrying **Supplies**
 - o The timer counting down the time until a **Human** needs to leave a **Fort** is unique to each **Human**, so **Humans** will be individually forced to leave **Forts**, even if there are other **Humans** who are still allowed to remain inside
 - o Once a **Human** has been forced to exit a **Fort**, they must remain outside of it for a set amount of time until they are allowed to enter it again
- When **Humans** enter a **Fort**, they deposit all **Supplies** they are currently carrying into the **Fort's** reserves
 - o **Supplies** stored in a **Fort's** reserve are continuously used up at a set rate whenever at least one **Human** is in that **Fort**
- **Humans** can enter a **Fort** from any direction
- **Humans** exit a **Fort** in the direction that is the most clear of **Zombies**
- **Forts** start a game with a certain amount of **Supplies** already in their reserve
- If there are multiple **Forts** on a map, each **Fort** has its own cooldown timer, so a **Human** kicked out of one **Fort** may move immediately into another without spending a full cooldown period outside

Gather Marker:

- Icon placed by the player that changes the behavior of all **Zombies** on the map by affecting the probability of their movement function
- **Zombies** have a greatly increased chance to move towards **Gather Markers**

- **Gather Markers** have no effect on **Humans**, **Supply Depots**, or **Forts**
- **Gather Markers** can be placed anywhere on the map except on **Supply Depots** or **Forts**
- **Gather Markers** can be moved as often as a player wants, the player can also choose to not use them or to remove existing **Gather Markers** from the map
 - o **Gather Markers** removed from the map are still available for use
- For each level, the player is given a certain number of **Gather Markers** to use or to not use

Avoid Marker:

- Icon placed by the player that changes the behavior of all **Zombies** on the map by affecting the probability of their movement function
- **Zombies** have a greatly increased chance to move away from **Avoid Markers**
- **Avoid Markers** have no effect on **Humans**, **Supply Depots**, or **Forts**
- **Avoid Markers** can be placed anywhere on the map except on **Supply Depots** or **Forts**
- **Avoid Markers** can be moved as often as a player wants, the player can also choose to not use them or to remove existing **Avoid Markers** from the map
 - o **Avoid Markers** removed from the map are still available for use
- For each level, the player is given a certain number of **Avoid Markers** to use or to not use

Description of Gameplay:

Set-Up:

- A level is loaded with set variables including:
 - o The size and image of the map
 - o The number of **Gather Markers** and **Avoid Markers** allowed to a player
 - o The number and placement of **Zombies** on the map
 - o The number and placement of **Humans** on the map
 - o The number and placement of **Forts** on the map
 - o The number and placement of **Supply Depots** on the map
 - o Possibly, any **Powers** that a player is allowed for that level (see gameplay description under “Possible Extra Features”)

Play:

- **[This is an optional feature]** When a level loads, the game may start paused in order to give the player time to initially set up their **Gather Markers** and **Avoid Markers** before starting the movement on the game
- When the clock starts on the level, **Humans** and **Zombies** begin moving automatically according to their movement functions
- The player may choose to add, remove, or move any **Avoid Markers** or **Gather Markers** during gameplay in order to direct the **Zombies**
- **[This is an optional feature]** The player may choose to speed up or slow down the gameplay (including the internal clocks as well as the **Humans** and **Zombies**)
- **[This is an optional feature]** The player may choose to use **Powers** to change the behavior of the **Zombies** (see gameplay description under “Possible Extra Features”)

Win/Lose Conditions:

- The player wins when there are no more **Humans** on the map (including those that might be inside **Forts** or **Supply Depots**)

- The player loses when there are no more **Zombies** left on the map, or if they quit out of the level

Possible Extra Features:

- At the beginning of a level, the player can set where the Zombies start, instead of having that be determined by the level design
- Player can change the speed of the game: slowing down or speeding up internal clocks/counters as well as the movement speed of the Humans and Zombies (to decrease play time)
- The map can vary in size depending on the level
- Powers
 - Special abilities activated by the player, have either a set number of uses per level or have a cooldown timer
 - Rush:
 - For a set amount of time, Zombies become more aggressive aka much more likely to move towards humans
 - Infect:
 - For a set amount of time, Zombies have a much greater chance to infect humans instead of just killing them
 - Toughness/Resilience:
 - For a set amount of time, Zombies become much harder to kill