**Shadowvale GDD**

* Building repair – When buildings are destroyed, they can be repaired by followers for a lower resource cost than the full build cost
* Fog of war
* Spawn creatures over time (up to a maximum number)
* Separate world into chunks

Functionality

* Land corruption and healing – healthy land can be corrupted by enemies, and corrupted land can be healed by priests
* Resources that are mined in corrupted areas draw more enemies and drop fewer resources
* Land healing draws far more enemies (priests must be heavily defended to heal land)
* Enemies can only be spawned in corruption
* Spawners appear in corrupted lands, the player must find them and destroy them before they grow
* Enemies target the home building (firepit etc.) until they are hit or are blocked by a wall
* More enemies and tougher enemies spawn as the player progresses
* Squads – allows soldiers, archers and priests to be commanded as groups rather than as single units. Combine squads to create armies

Buildings

* Guard tower – allows for archers to fire over walls when assigned to the tower
* Spikes – deal damage to enemies that walk over them
* Barracks – Convert followers to soldiers
* Temple – Convert followers to priests
* Archery range – Convert followers to archers
* Lumberyard/Mine/Farm – allows for resources to be gathered over time indefinitely
* Roads – Followers move faster on roads
* Bridges

Follower types

* Priests – priests can heal corrupted land over time, they must be defended while healing (more enemies attack priests while healing)
* Archers

Enemy types

* Undead – followers and soldiers can be raised from the dead by enemy necromancers. Standard undead followers have low health and damage, but soldiers have higher health and damage
* Necromancer – Raises followers and soldiers from the dead in an area around them (can only raise the dead in corrupted land)
* Corruption spreader – Spread corruption to uncorrupted tiles
* Explosive – moves really slowly but deals AOE damage when in range of followers or buildings. They must be killed in time
* Dash – When in range of a target, quickly dashes towards and through the target causing damage

Creatures

* Spawn over time
* Creature fleeing
* Creature bleeding when hit

Inspector

* Add building description
  + Add follower state/task
* Add building damage to the inspector for all constructed buildings
* Add squad management

Pathfinding

* Separate pathfinding with multithreading (or job system)

Corruption

* Add enemy squad spawning in corruption

Followers/Squads

* Update follower count on UI when follower dies
* Drag select multiple followers into a squad instead of right clicking on each one
* Squad management (removing followers)
* Buildings can call nearby followers to defend it?
  + When important building gets hit, find all combat type followers/squads to defend it (only if they aren’t already in combat)
* Combine squads together,

Worker improvements

* Find new build target when finished construction (continue building wall sections etc.)
* Followers store a list of previous commands and targets

Improved building system

* Drag build for some building types
  + Walls – click to begin drawing, then click again to build
  + Bridges
  + Roads
* Larger buildings
  + Select multiple tiles
  + Check all selected tiles are clear before building
  + Get mouse pos and select tile under it
  + If mouse x remainder (%) is greater than .5, add the tile to the right else add the tile to the left

Priest

* Command to heal followers when not in a squad by right clicking
* Recharge restoration pillars
  + Pillars lose charge over time
* Move away from enemies when too close (find path able tile far enough away)

Necromancer

* Necromancer movement
  + Move towards target unless there are corpses in range and the raise dead ability is off cooldown (if so move towards corpses)
* Check if target already has a shadow effect on them, if so attempt to find a new target

Tile effects

* Freeze effect – Freezes any follower on the tile, slowing them down until eventually freezing in place

**Followers**

There are 5 follower base classes

**Workers**

**Soldiers**

**Archers**

**Priests**

**Mages**

**Heroes**

Hero characters are **selected before starting the game**, and persist throughout the run. If a hero character is killed, they can be **revived** at a specific building (or something else).

Hero characters are **based on the core follower classes** (i.e. Paladin is a soldier hero that boosts priests, and pyromancer is a mage hero that gives archers fire arrows etc.)

They each have unique abilities that can benefit followers or structures, and can deal damage to enemies (**special powers**).

* Paladin (Soldier) – Soldier based hero that boosts the effectiveness of all priests in the same squad
* Beast Master (Archer) – archer based hero follower that is able to add creatures to the same squad

**Abilities**

Special/hero followers can have abilities that can be activated by clicking a button in the inspector. They will each have a unique effect, then will take time to cooldown before it can be used again.

* Meteor – Select a location for a meteor to land, then after a couple of seconds the meteor will hit the ground damaging everything nearby

**Possible roguelike elements**

* Infinite procedurally generated dungeons
* Unlock new followers, enemies and buildings between ‘runs’
* **Hero characters** that can be unlocked by doing various things
  + Can be selected before starting a run (kinda like binding of Isaac or don’t starve characters)
  + When they are killed they can be revived
  + You can only have one of them
  + Based on the core follower classes
  + They each have unique abilities
  + They can level up, increasing their strength
  + When added to squads/armies they can give the followers special powers
  + They can give civilisations (entire gameplay team) advantages
    - (i.e. increased wood/stone/food production)
* **Stackable effects** (similar to binding of Isaac)
  + Squads can be given items to give them unique abilities
  + Effects stack up, sometimes creating interesting synergies and unique interactions
    - (E.g. fire item causes all members of the squad to deal fire damage, when added to archers they shoot fire arrows which burn targets and spread fire to nearby enemies)
* **Items**
  + Items can be found from a variety of sources
    - Rarely from standard enemies
    - Commonly from rare enemies and bosses
    - In procedural dungeon chests
  + Different objects give different followers varying levels of advantages
    - (I.e. increased range will benefit archers more, but increased health would benefit soldiers more)
    - This adds some strategy to managing your squads/items as to make the most out of the items

**Day/night cycle**

* Gets dark at night, limiting vision
* Followers have torch lights that turn on when it gets dark
* Enemy spawn and corruption spread rates increase at night making it harder to defend
* At first you can’t survive the night without controlling followers
* Once you have built up enough defenses the followers can defend the base on their own allowing you to explore dungeons without risking a game over

UI

* Description box
  + Explains the building/follower when hovering over a button (e.g. button in building menu will give building explanation and resource cost)
* Toggleable building menu

Save/load

* Save cooldown positions (maybe serialize the whole cooldown class object)
* Save corpses
* Save projectiles
* Save day/night position (especially when fading)
* Save trainer and guard tower member saving/loading
  + Save/load buildings with follower target references
* Change building saving/loading to instead save a list of tile positions, then set structure var of all tiles rather than just the one and centre the building.
* Add loaded buildings to their corresponding building list (i.e. storage buildings)

To do:

* Find way to show followers behind structures (maybe shader)
* Rework resources system (very unnecessarily confusing)
* Rework HUD (needs to be easier to update intuitively (finds all of the data from static classes etc.)
  + Toggle between followers by clicking on the HUD icon
* Go through the codebase improving readability
  + Comment functions
  + Add comment headers to separate sections in classes
* Clear building functionality (i.e. storage) when destroyed
* Have some buildings open a default building inspector
  + Just shows health bar and building name
* Make pathfinding update more often when closer to the target and less when further
* Show status effects in inspector (maybe glow around health bar)
* Keep track of the duration of a run
* Save hidden followers that are being trained and load them with their gameobject disabled
* Add follower back to worker conversion
* Training cost?
* Make follower path to building before being added to it (trainers and guard towers)
* Wall gates
  + Followers can path through but enemies can’t
* Resource respawning
* Wall drag multi-build functionality
* Show worker inventory in inspector
* Add alert when being attacked
* Workers loop through walls when building walls
* Pause menu
* Audio
* Maybe give workers a role and a state.
  + Would allow them to more easily switch between storing and going back to their desired resource
* Make it easier to select rabbits
* Prevent followers piling up when spawning (some kinda swarm functionality)
* Allow worker to be next to closest tile of large buildings when constructing, rather than trying to path to the centre of the building (results in followers getting stuck)
* Add icons to demonstrate what is wrong with follower (I.e. no path)
* Corruptible resources

Sprites to add

* New home base
* Normalized scale building icons
* HUD and Building menu windows

Bugs

* Corruption doesn’t continue spreading after load if the first one hasn’t reached 100 corruptionVal
* Worker sometimes doesn’t store after gathering/hunting (think they can’t find a path)
* Followers with torch on in the day
* Home base spawning sometimes doesn’t work in build??
* Destroy building functionality doesn’t work
  + Think it causes save to not work
  + Causes crash when attempting on larger buildings (specifically trainers)
* Follower can’t store in high filled resource storage, even if it isn’t full
* Followers lose track of what they’re doing all the effing time
* Hitting bunnies from a distance
* Followers get stuck in large buildings
  + They path to the centre instead of the edge tile
* Workers fail to path back to storage
* Only paths when selecting the free side of the building
  + Clearly the direct pos is being rounded and resulting in the incorrect position being passed to pathfinding
  + Should instead path to the tile’s centre
* Worker follows squads if assigned

Ideas

* Blood moon
* Graveyards
* Cyclopse
* Flying creatures

Juice

* Follower death animation
* Building construction animation
* Blood explosion

Audio

* Follower hit
* Sword swing