



Scarse Games

(Team 3)

presents

Scientist's Doom

Coop RPG Tower-Defense game

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Game Overview

Introduction

Scientist's Doom is a COOP Tower-Defense game with RPG elements. The player controls one of the three rogue mercenaries - Barbarian, Wizard or Huntress - who were hired by a mad scientist to defend him in his castle, from hordes of raging villagers. The villagers have recently suffered a devastating loss. Their homes were destroyed, loved ones killed, and dreams shattered, all because of the scientist's unsuccessful experiment, which lead to an explosion. Those who survived were affected by the experiment's radiation, and are slowly mutating and becoming wrathful monsters, with one goal only - to revenge themselves. The faith of the Mad Scientist is yet to uncovered...

Game Description

The game can be played either alone or in cooperation with friends. In story mode, the payer completes levels, that lead him through the campaign's story. Each level has a set of incoming enemies that try to destroy the scientist's castle. It consists of two phases - day and night.

During the day, the player can upgrade his abilities, turrets, and buy new weapons, with resources he has acquired. The resources are acquired during the night and are of three types. Wood and stone are used to buy and upgrade towers and weapons, while souls can be used to upgrade skills, healing and revives.

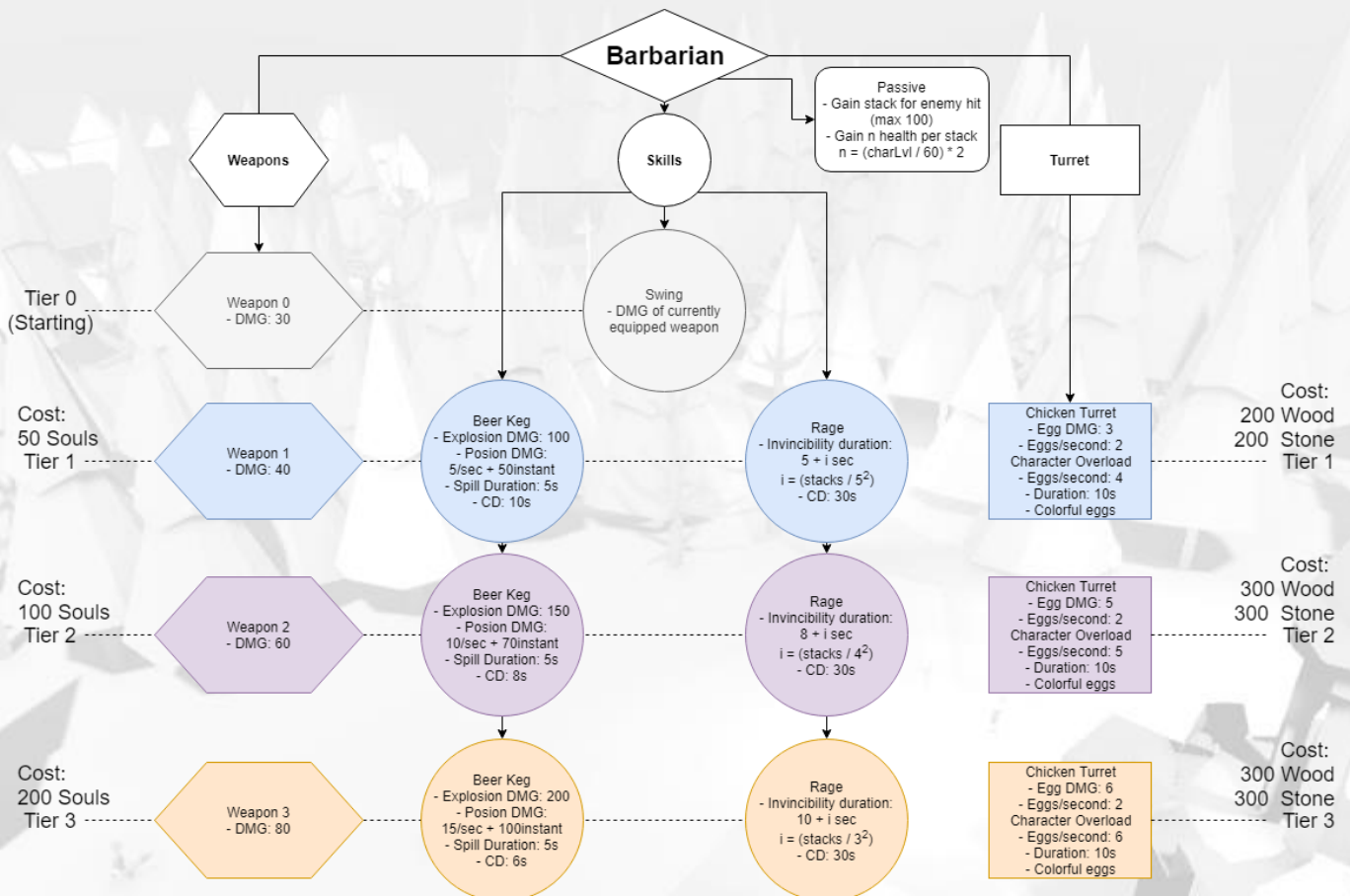
When the night comes, the player must defend the castle from enemies, that are coming from the forest that surrounds the castle. If the castle is destroyed, the level fails, and he can try again. If the player dies, he has the option to wait a fixed amount of time to get resurrected by the scientist (time increasing with each subsequent death) or can be resurrected for an amount of souls.

There is also the Endless Mode, where the player fights to death or castle destruction, and cannot resurrect himself. However, in coop, other players can resurrect him for souls. Endless Mode also features numerous buffs to allow the player to take down increasingly more difficult enemies and offers infinite replay ability.

Characters and Abilities

Barbarian

The Barbarian resembles a bearded Viking with a mighty axe and a good strong homebrewed beer in his hands. While the axe keeps him occupied, the beer is nice distraction to the stereotypical enemy slashing and smashing and lashing and crashing.



Passive

- Barbarian's passive lies in the ability to gain a stack of rage for each enemy hit. With each stack, barbarian's HP increase, by a percentage of his maximum HP. Barbarian loses all his stacks, when out of combat for a fixed amount of time.

Swing

- Barbarian swings his mighty weapon as his main attack. How creative...

Beer Keg

- Barbarian's signature perk is his keg. This skill allows him to either place it onto the ground or throw it in front of him. If placed on the ground, the keg acts as a mine, that can be destroyed either by fire (explosion occurs) or with weapons. If the keg is thrown or destroyed by weapons, the beer spills onto the ground and slows and poisons enemies that walk through the puddle.

Rage

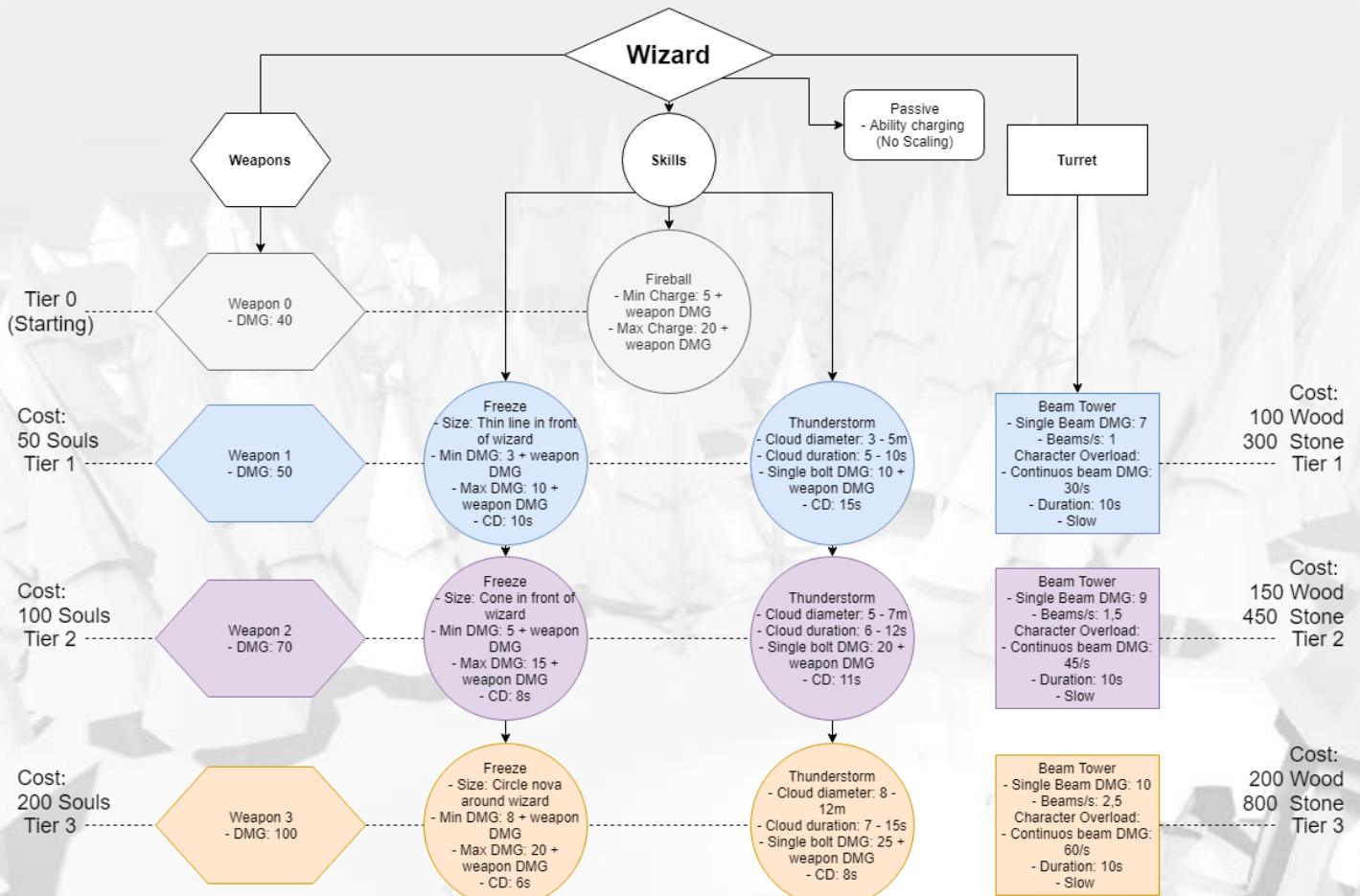
- Barbarian's second ability, rage, allow him to consume his stacks, gaining invincibility for the ability's duration.

Scientist's Doom – Game Design Document



Wizard

The Wizard, on the other hand is a tiny dwarf, using his oversized head to focus and cast massive, powerful spells upon his foes. He's also a great source of fireworks and can serve as a temporary refrigerator.



Passive

- Wizard can charge all his abilities boosting their travel speed, damage and area of effect.

Fireball

- Wizard's main ability, the fireball, shoots a dangerous fireball from his magical wand. The fireball, apart from dealing massive damage, can put certain items (or people) on fire.

Thunderstorm

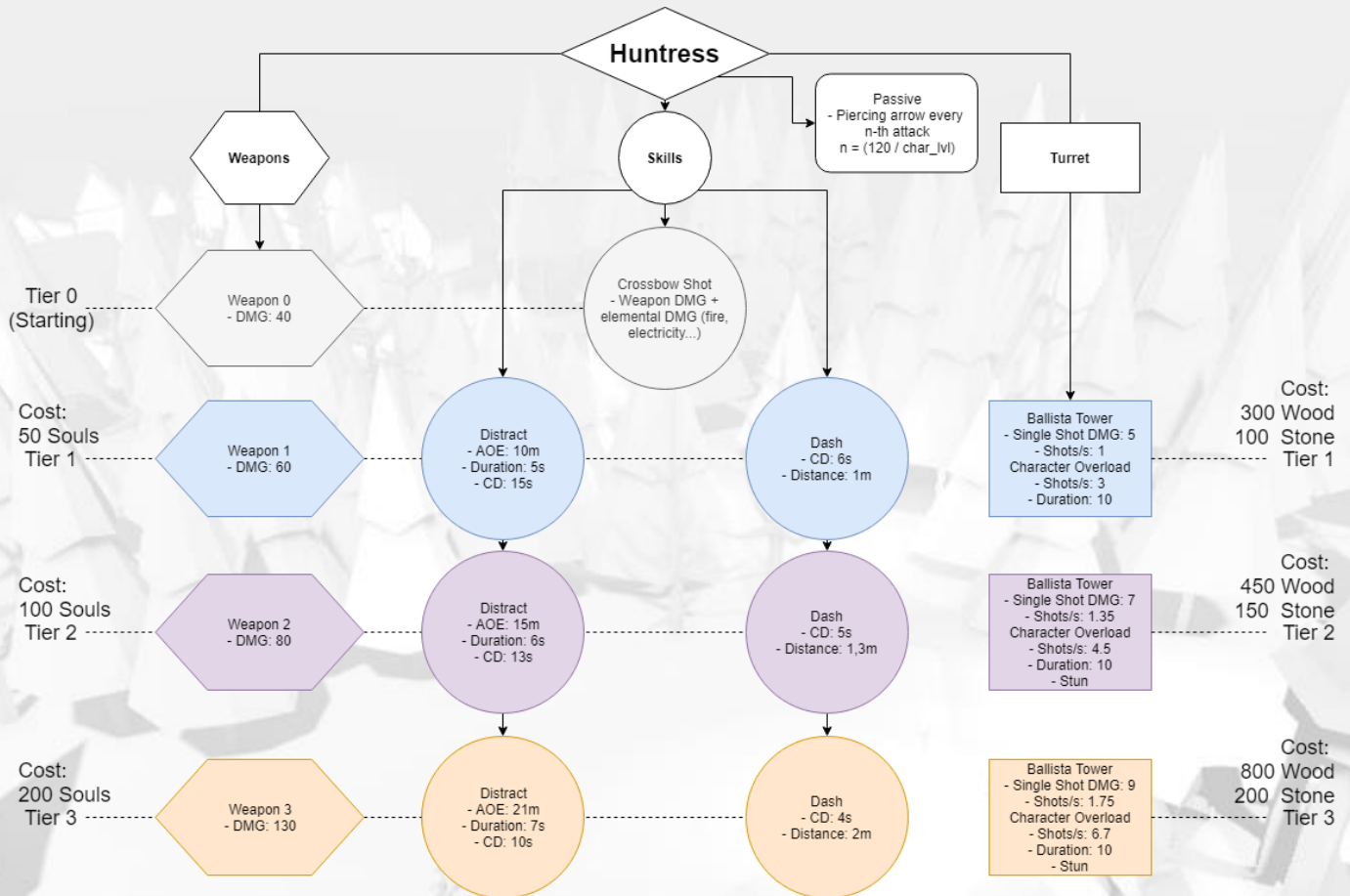
- This ability forms a cloud above the target location, electrocuting enemies that step into it with thunder strikes. When upgraded, the electricity can cause a chain reaction.

Freeze

- The Wizard's second ability freezes all enemies it reaches. It shoots a frozen ball in target direction but can be upgraded to shoot wider cones or even whole circles from the Wizard.

Huntress

Huntress, the last one of the great trio, is a fast, nimble elf, jumping around the battlefield and using her bow to penetrate enemy's flesh with piercing arrows. She's not fighting alone. Her loyal Owl guards her and distracts enemies while she's lining up her deadly shots.



Passive

- Huntress's passive allows her to shoot strong piercing arrows on every n-th shot. The n depends on her level. Piercing arrow deals increased damage, especially to heavily armored enemies, such as the siege machine.

Crossbow Shot

- Crossbow shot is her basic attack. She shoots a bolt from her crossbow at targeted enemy. Almost as interesting as the Barbarian's swing...

Distract (Companion Taunt)

- The Owl flies to target location and taunts nearby enemies, forcing them to come towards him, effectively gathering them in a small group.

Dash

- Dash allows the huntress to quickly move in a direction, allowing to escape tricky combat situations, and increasing her overall swiftness.

Enemies

Name	Attack	Weapon
Peasant	Melee	Pitchfork
Peasant Support	Ranged	Slingshot(rocks)
Butcher	Melee/Ranged	Cleaver, Hook
Siege Machine	Ranged	Catapult (Hay blocks on fire)

Enemies are one of the core parts of the actual gameplay. They come in swarms from around the map, to siege the castle and kill his only habitant. Below are described the four types of enemies, that the player will encounter. They are described in stages, which represent the stage of mutation, all enemies are affected with.

The stages of mutation will be introduced in the Story Mode, based on completed levels (e.g. Stage 0 in level 1, Stage 1 in level 12, Stage 2 in level 29 etc.). Endless mode will feature all enemy types, changing stages as the players survives for longer and longer.

Enemy spawning is handled so that each level specifies how many enemies are going to spawn during the whole level. Enemy stats (those include HP and DMG) scale based on how many and how powerful characters are present on the battlefield. This means, that strong players should be able to coop with weak players (it will be an adequate challenge for the weak player, but at the same time, the strong player will not be able to one shot a single enemy).

// Note: The variables for scaling are still to be determined and are likely to be adjusted each update even after the game's release.

Name	Stage 0	Stage 1	Stage 2	Stage 3
Peasant	Basic model	Skin slightly deformed, green emissive saliva	More deformation, poisoned weapon	Visible green veins, torn clothes, green eyes + charging attack
Peasant Support	Basic model		More deformation, Slows player down on hit	Visuals as peasant + stationary slingshot, rocks stun player
Butcher	---	---	Basic model (fat, apron, cleaver)	Visible green veins, torn clothes, green eyes + ranged attack
Siege Machine	---	---	---	Wooden catapult, shoots hay blocks set on fire, has front shield

Game Mechanics

Combat

The game is designed around simple combat with various combined effects. Each character has a total of 3 abilities. The regular attack is an ability with no cooldown, is spam-able and can be used with other abilities to increase its effectivity. The other two abilities differ from character to character. Some are pure damage, others crowd control or enhance character movement.

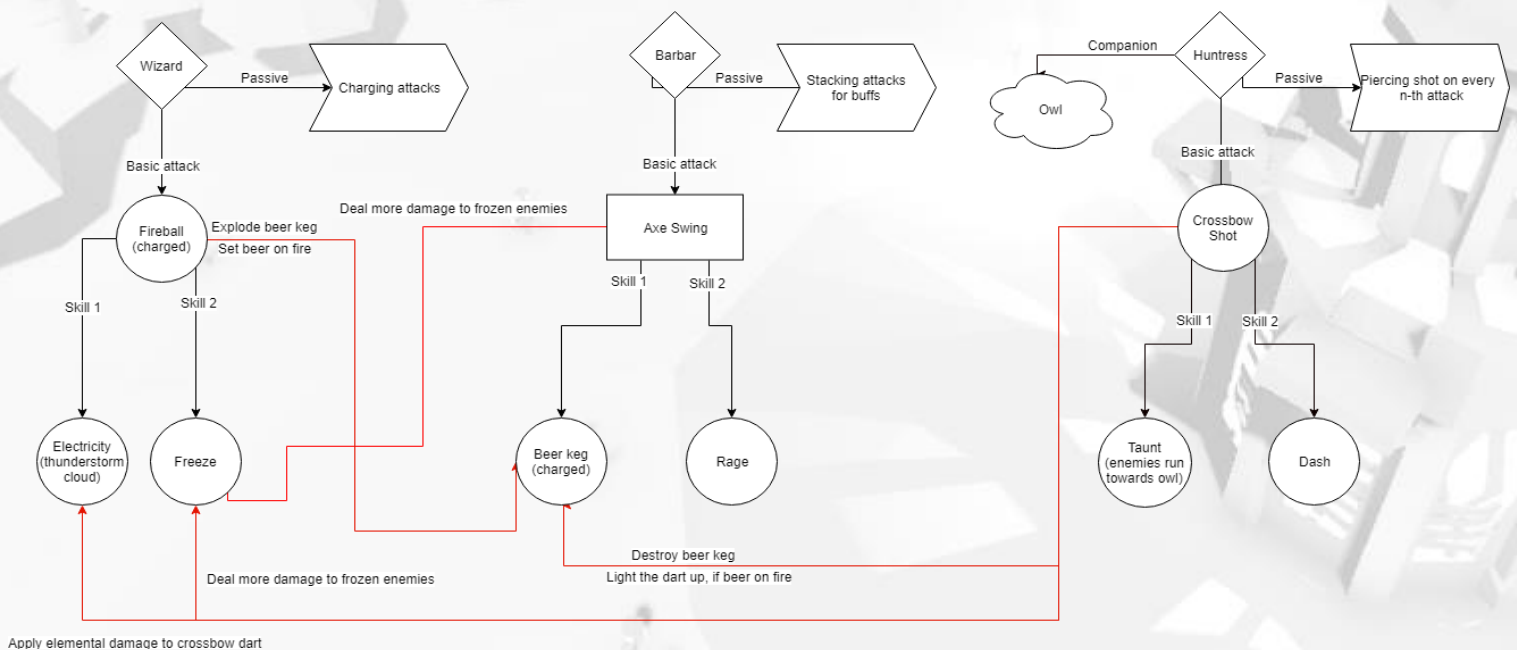
Castle and Turret Interaction

On the castle, there is a turret slot assigned to each player. During the day, players can spend wood and stone to build and upgrade their turret. After the turret is built, it then automatically fires at enemies during night.

The player can also jump on the turret during the fight for a limited amount of time each night and make the turret go to its “upper limits”. The camera view changes and the player is then able to manually control the turret, performing enhanced attacks with increased damage and other buffs (stun, slow..).

Skill Interactions

Skills can interact with other skills. One example is Wizard's fireball exploding Barbarian's beer keg. The explosion is larger and more powerful than any other solo ability that the characters have, so it is very beneficial to combine them.



Upgrades

There are three types of upgrades. Each character (i.e. Barbarian, Wizard...) has its own skill tree, turret tree and weapon tree to upgrade. Skills can be upgraded to alter their visual appearance, area of effect, but most importantly damage. Similarly, the turrets can be upgraded to change their visuals and increase damage output. As for the

weapons, each weapon upgrade means a completely new weapon model, with massive damage boost.

Healing and Buffs

The player has the option to exchange game currency (souls) for a heal. After purchase, the Scientist throws a healing essence/potion on the player, which heals the player upon impact.

Buffs are only present in the Endless Mode and increase player damage, attack speed, movement speed, health or any other stat from the time of purchase until the player dies. The buffs can be purchased from the Scientist for souls.

Reviving

If the player is killed in story mode, he has the option to wait for a timer to end so he is automatically revived or can instantly revive himself for a small amount of souls. During coop, the player either wait for a specific amount of time, or get revived by his teammate, for a small soul fee.

If the player dies in endless mode, he dies. No respawns, no revives.

Character Stats

Character stats consist of player base maximum health and maximum health with modifiers, as well as current health also displayed on the HUD. Current and next level experience are also kept in stats and displayed on the HUD. Damage is also located in stats, but for players only as a reference to the actual damage of the weapon their character is wielding. There are stat increments in stats for both health and damage.

Day/Night cycle

The Day/Night cycle serves as a timer and wave progress bar, for each level. During the day, the battlefield is deserted, and players can perform upgrades in the castle. When the night comes, enemies start to spawn and march towards the castle. The core part of this concept, consists of animated lighting, that changes over time, providing the effect of day light disappearing and night approaching. This allows us, among other things, to get rid of HUD clutter, such as wave counters and level timers. It also allows seamless transition between levels.

Level Transitions

The Day/Night cycle is implemented in a way, so that it allows seamless transition between Story Mode levels. When the night ends, a text appears, stating which level has been finished, and which one is about to begin. Another day automatically begins, indicating another level.

Game Modes

There are two separate modes in Scientist's Doom. The first one is **Story Mode**, where the story unfolds and which the player can progress through, leveling up his characters. Each mode can be played both in single player or coop.

Story Mode

The player is introduced to the story of the Mad Scientist. As described in Game Introduction, the player controls one of the three mercenaries, that defend the scientist in his castle. The Story Mode is divided into 60 levels, each consisting of the Day and Night phase, described more in depth in Day/Night cycle section. Progress is saved every time a Level is finished. The main goal of Story Mode, is for the player to slowly unravel all the scientist's secrets and mysteries, so that they are prepared for the ultimate choice they are presented with at the end of the story.

Endless Mode

Endless Mode takes place during the night on the same map, and introduces endless waves of enemies, that the player needs to take care of. The Endless Mode serves as a training battleground, where the player can level up his character and improve his game tactics and gameplay style.

The only character progress that the character keeps from Endless Mode are levels. We don't want players to max out their characters before finishing the story.

To compensate for this limitation, Endless Mode introduces buffs. Buffs can be bought for a certain amount of souls at the castle, and offer boosts in HP and DMG, for the duration of one Endless Mode game.

// Note: As much as we would like to calculate the buff costs and HP/DMG increases in this stage of development, we have decided to leave it for the gameplay testing and balancing stage, as the numbers we would come up with now, would be simply placeholders, wasting everybody's time.

Coop

Coop allows the player to team up currently with up to 2 friends and take on adventures of Story Mode or the thrill of Endless Mode together. Progress from coop is saved onto every character, following the same rules as in single player. The only difference is that if two players cooperate in Story Mode, and they have not completed the same Level yet (i.e. Player 1 has finished Level 35 and Player has finished Level 10, and they play Level 36 together), Level completion progress will not be saved for either one of them. However, if they play a Level, that both have already unlocked (meaning they both have finished the Level prior to this one), the Level progress from this coop session will be kept.

Multiplayer

The coop feature requires a multiplayer system. While the option of configuring our own API to work on top of Unity's transport layer would be ideal and highly flexible, the game will most likely feature Unity's high-level API, UNET (the option of Photon's plugins remains open as well).

The most important aspects that we want from the multiplayer are scalability (to allow for easy item and character addition), fast and reliable connection, and low latency.

Latency is especially important, because the game's combat system is focused on combining abilities of multiple players, and frequent or long lags would ruin the user experience while using these interactions.

UI

The UI will be styled to fit the low-poly graphics of the game. This means using mostly flat, simple icons, texts and buttons, that do not draw much attention, but still look unified with the rest of the game.

Controls

The game uses Unity's NavMesh for character navigation. The player holds down his left mouse button, to navigate the character. The character essentially follows the mouse the mouse cursor, wherever it points on the map.

The player is presented with default controls but is given the option to rebind the keys according to his desires.

Left Mouse Button(hold)	Move
Space	Basic Attack
Q	Ability 1
W	Ability 2
E	Heal
R	Turret Control
F	Ally Revive
ESC	Game Menu(Pause)

HUD

The HUD will give the user information about his current HP, experience (current + experience needed to next level), resources (wood, stone, souls), castle HP, skills (bindings, CD). The HUD will be as minimal as possible, focusing mainly on the HP and skill icons. During the day, it is possible that important information for this part of the level (such as resources, experience, etc.) will be highlighted (bigger), to be more convenient.



Main Menu

The Main Menu, as shown in the picture below, will allow the user to enter single player or coop game, tweak settings, and to exit out of the game. After single or coop game mode selection, the user will be able to pick the character they want to fight with, which will then appear in a sort of a lobby scene, where the user can choose between story and endless mode, invite friends and start the game.



Music and Sound Effects

Background Music

The game will have at least two background tracks, one for the main menu + day phase, and one for the night. The key difference between those two is in pacing and instruments chosen. While the menu + day sound track should invoke calm and peace, the night track will boost the intensity of the fights, invoking more of a chaotic and dangerous environment.

Both tracks will be inspired by medieval/Viking music, which will fit nicely into the games concept. Examples of instruments we intend to use include: choirs, harps, acoustic guitars / lutes / citoles, tabor drums, tambourines, etc.

Sound Effects

For the most part, sound effects will be recorded and edited from scratch. Each sound effect must fit in to the atmosphere and deepen the game's feel, not take away from it. The sound effects should also support the player's intuition, e.g. it should be recognizable that a Butcher is approaching by hearing deeper, heavier and less pronounced footsteps, than those of a Peasant.