

Fairy Frenzy

Design Document

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1. Overview

2. Gameplay Mechanics

2.1 Player Controls

2.1.1 Movement

2.1.2 Attacks

2.1.2.1 Shadow Blast

2.1.2.1.1 Behavior

2.1.2.1.2 Appearance

2.1.2.1.3 Sounds

2.1.2.2 Shadow Shroud

2.1.2.2.1 Behavior

2.1.2.2.2 Appearance

2.1.2.2.3 Sounds

2.1.2.3 Shadow Torrent

2.1.2.3.1 Behavior

2.1.2.3.2 Appearance

2.1.2.3.3 Sounds

2.1.2.4 Shadow Storm

2.1.2.4.1 Behavior

2.1.2.4.2 Appearance

2.1.2.4.3 Sounds

2.1.3 Extinguishing Light

2.2 Player Character Properties

2.2.1 Health

2.2.2 Sounds

2.2.3 Power Advancement

2.2.3.2 Improving Abilities

2.2.3.2.1 Possible Improvements

2.3 Enemies

2.3.1 Enemy Types

2.3.1.1 Projectile Fairy

2.3.1.1.1 Behavior

2.3.1.1.2 Attack

2.3.1.1.3 Appearance

2.3.1.1.3.1 Animation List

- [2.3.1.1.4 Sounds](#)
 - [2.3.1.2 Fairy Swarm](#)
 - [2.3.1.2.1 Behavior](#)
 - [2.3.1.2.2 Attack](#)
 - [2.3.1.2.3 Appearance](#)
 - [2.3.1.2.3.1 Animation List](#)
 - [2.3.1.3 Big Fairy](#)
 - [2.3.1.3.1 Behavior](#)
 - [2.3.1.3.2 Attack](#)
 - [2.3.1.3.3 Appearance](#)
 - [2.3.2 Points for Defeating Enemies](#)
 - [2.4 Level Environment](#)
 - [2.4.1 Harmful Light Sources](#)
 - [2.4.2 Fairy Warp Gates](#)
 - [2.1.2.1 Behavior](#)
 - [2.1.2.1.1 Gate Properties](#)
 - [2.1.2.2 Enemy Gate Waves](#)
 - [2.1.2.3 Appearance](#)
 - [-Pop \(spawning\)](#)
 - [2.4.3 Rooms](#)
 - [2.3.1.1 Main Entryway](#)
 - [3. Graphical Interface](#)
 - [3.1 Player HUD](#)
 - [3.1.1 Charges \(Ammo\)](#)
 - [3.1.2 Health](#)
 - [3.1.3 Target Reticule](#)
 - [3.1.4 Taking Damage Glow](#)
 - [3.1.5 In Harm Light Source Glow](#)
 - [3.1.6 Current Experience Points](#)
 - [3.1.7 Chain Kills](#)
 - [3.1.8 Chain Experience Gain](#)
 - [3.2 Title Menu](#)
 - [3.2.1 Appearance](#)
 - [3.2.2 Buttons](#)
 - [3.3 Power Advancement Menu](#)
 - [3.4 Pause Menu](#)

1. Overview

The player is an evil shadow monster (played from 1st-person in a 3d level, so we never see him) that has made his home in the main hall of an abandoned castle. Waves of overly sweet cutesy fairies invade the castle via magical gates that appear in various places in the hall. They shoot bolts of light at the player and try to light up lanterns and torches in the area. The activated lights harm the player and weaken his abilities while strengthening the fairies. The player character loves shadow and needs to extinguish the lights that the fairies activate, while blasting the fairies with dark energy projectiles. The player must survive as long as possible against wave after wave of fairies until he's ultimately overwhelmed.

2. Gameplay Mechanics

2.1 Player Controls

Player Action	Input
Walk Forward	W
Strafe Left	A
Strafe Right	D
Walk Backward	S
Aim View	Mouse Movement
Attack	LMB
Select Weapon	Scroll Wheel and/or Numbers
Secondary Attack	RMB

2.1.1 Movement

The player will have movement that feels like any other FPS.

2.1.2 Attacks

2.1.2.1 Shadow Blast

2.1.2.1.1 Behavior

The player activates the shadow blast upon pressing attack button, which fires a projectile from the player toward a target reticule in the center of the screen at a given speed. The projectile may collide with characters or level geometry, and when it does so, it explodes in a spherical radius, damaging the health of all enemies in that area. The player is immune to his own attack. If the player holds down the attack button for more than 0.2 seconds, instead of immediately releasing after pressing, the fired projectile will explode when the attack button is released or it collides with something, whichever happens first. Firing the projectile costs expends a unit of charge from a limited amount. If the player runs out of charges, he cannot fire any more projectiles. As long as the player has charges, he may keep firing shadow blast projectiles, although there is a brief delay after firing before another shot can be fired. The player begins play with a maximum number of charges. After the player fires a shot, a timer starts to count down. When the timer finishes counting down, the player instantly recovers charges and attains the maximum number of charges. If the player fires a shot during the timer countdown, the timer count is interrupted, and a new countdown begins after the shot. A new countdown is set to count an amount of time dependent on how many shadow blast charges the player has remaining. The fewer the charges the player has remaining, the longer the countdown. The countdown is paused if the player is in an area of harmful light, but resumes when the player leaves all harmful light areas. The player starts the game with this ability.

$$\text{RechargeTime} = \text{BaseTime} - \text{RechargeDiscount}^{(\text{AmmoRemaining} * \text{DesignAdjustment})}$$

2.1.2.1.2 Appearance

The shadow creature blasts a shadow ball out and it travels at a medium speed. The ball is created by a piece of his arm which is why he must be in the shadow to regenerate his charges. Essentially he reshapes a piece of his arm into a ball and then forces it away from his body towards an enemy. The ball itself will have the same shadowy skin as the creature.

2.1.2.1.3 Sounds

Fire Sound
Impact Sound

2.1.2.2 Shadow Shroud

2.1.2.2.1 Behavior

The player activates the shadow shroud when it is selected as a weapon and the attack button is held down. This attack is used to extinguish torches. When the player uses this move next to a lit torch and is not damaged by fairies for 2 seconds while holding the attack button and aiming at the torch, the torch will be extinguished. If the player successfully extinguishes a torch with this ability, all the player's abilities instantly recharge to full. This weapon has one charge of energy which is expended when the attack button is first pressed. If the player is interrupted while casting, by damage, moving out of range of the torch, failing to maintain aim on the torch, switching weapons, or simply releasing the attack button early, the charge is wasted and the torch remains lit. After the shadow shroud's one charge is used up, the player must go back to the shadows for several seconds before using this ability again. If there is no torch nearby this attack does nothing and the charge is wasted. The player starts the game with this ability.

2.1.2.2.2 Appearance

It will look like a blanket of shadow falling over the torch the player is looking at. Once the entire torch is covered in the shadow of the blanket it will be extinguished. The blanket will be cast by the shadow creature waving his arm over the torch and as he does so the blanket falls over the torch. It will have a similar texture to the shadow creature though not identical so the player can tell the difference between the arm of the creature and the blanket.

2.1.2.2.3 Sounds

Swooshing Sound
Interrupted Sound
Extinguishing Sound

2.1.2.3 Shadow Torrent

2.1.2.3.1 Behavior

If the shadow torrent is the selected attack, the player powers up the shadow torrent while holding down the attack button. The attack fires when the attack button is released. When it fires, a series of projectiles fires from the player one at a time in rapid succession. The number of projectiles in the series is dependent on how long the attack was powered up, up to some maximum number of projectiles. Simply tapping the attack button once will fire a single projectile. The projectiles travel from the player toward the target reticule in the center of the screen, but each one has some amount of random spread variance so they don't precisely approach the reticule. Each release of the shadow torrent consumes one charge of its energy, regardless of how many projectiles were fired in that sequence. As long as the player has charges, he may keep firing shadow shadow torrent, although there is a brief delay after firing stops before another shot can be fired. Pressing the attack button or switching attacks while a series of projectiles is still firing interrupts and cancels the remainder of the sequence. The player begins play with a maximum number of charges. After the player fires a shot, a timer starts to count down. When the timer finishes counting down, the player instantly recovers charges and attains the maximum number of charges. If the player fires a shot during the timer countdown, the timer count is interrupted, and a new countdown begins after the shot. A new countdown is set to count an amount of time dependent on how many shadow torrent charges the player has remaining. The fewer the charges the player has remaining, the longer the countdown. The countdown is paused if the player is in an area of harmful light, but resumes when the player leaves all harmful light areas. The player learns this ability in the middle of the game.

$\text{ShotQuantity} = \text{FinalPower} / \text{BasePower}$
$\text{FinalPower} = \text{BasePower} + \text{BonusPower}^{\text{HoldTime}}$
$\text{RechargeTime} = \text{BaseTime} - \text{RechargeDiscount}^{(\text{AmmoRemaining} * \text{DesignAdjustment})}$

2.1.2.3.2 Appearance

While the shadow torrent is powering up, a swirling cloud of shadow forms in front of the player and moves with him. When the torrent is powered up enough to fire its maximum number of projectiles, the cloud gets larger and swirls faster. When it fires, each projectile is a small ball of shadow that travels rapidly away from the player.

2.1.2.3.3 Sounds

Powering Up Loop
Fully Powered Up Loop
Projectile Fire
Projectile Impact

2.1.2.4 Shadow Storm

2.1.2.4.1 Behavior

If the shadow cloud is the selected attack, holding down the attack button powers it up, with its power increasing over time up to a maximum degree. Releasing the attack button fires a projectile from the player toward the target reticule. If the projectile collides with a character or level geometry, it explodes and forms a swirling storm of shadow centered on its impact point. The initial explosion deals a certain amount of damage to enemies in a radius. This explosion does not harm the player. The storm persists for a duration dependent on how much the player powered it up before firing, and affects a radius for its duration. Enemies within the storm take damage over time, with the amount per unit time dependent on how powered-up the storm is. Enemies also have any damage they receive from any source increased by a percentage, which depends on storm power. Enemies have their attack speed and movement speed lowered by a percentage dependent on storm power. If the player is within the storm, damage he takes is reduced by a percentage dependent on storm power. The player takes no damage from the storm, but instead heals damage over time within the storm by an amount dependent on storm power. Firing the shadow storm costs expends a unit of charge from a limited amount. If the player runs out of charges, he cannot fire any more shadow storms. As long as the player has charges, he may keep firing shadow storm shots, although there is a brief delay after firing before another shot can be fired. The player begins play with a maximum number of charges. After the player fires a shot, a timer starts to count down. When the timer finishes counting down, the player instantly recovers charges and attains the maximum number of charges. If the player fires a shot during the timer countdown, the timer count is interrupted, and a new countdown begins after the shot. A new countdown is set to count an amount of time dependent on how many shadow storm charges the player has remaining. The fewer the charges the player has remaining, the longer the countdown. The countdown is paused if the player is in an area of harmful light, but resumes when the player leaves all harmful light areas. The player learns this ability in the middle of the game.

$\text{ExplosionDamage} = \text{FinalPower} * \text{ExplosionDesignAdjustment}$
$\text{EnemyDamageOverTime} = \text{FinalPower} * \text{dotDesignAdjustment}$
$\text{PlayerHealOverTime} = \text{FinalPower} * \text{HealDesignAdjusment}$
$\text{PlayerDamageReduction} = \text{FinalPower} * \text{DReductionDesignAdjustment}$
$\text{EnemyDamageIncrease} = \text{FinalPower} * \text{DIncreaseDesignAdjustment}$
$\text{EnemySpeedReduction} = \text{FinalPower} * \text{SpeedDesignAdjustment}$
$\text{EnemyAttackRateReduction} = \text{FinalPower} * \text{AttackRateDesignAdjustment}$
$\text{FinalPower} = \text{BasePower} + \text{BonusPower}^{\text{HoldTime}}$
$\text{RechargeTime} = \text{BaseTime} - \text{RechargeDiscount}^{(\text{AmmoRemaining} * \text{DesignAdjustment})}$

2.1.2.4.2 Appearance

While the shadow storm is powering up, a small swirling cloud of shadow appears in front of the player and moves with him. When shadow storm reaches its maximum power, this cloud swirls faster and becomes larger. When it fires, the shadow storm is a large projectile of swirling shadows. When the projectile explodes, it becomes a whirlwind of shadowy streams.

2.1.2.4.3 Sounds

Powering Up Loop
Fully Powered Up Loop
Projectile Fire
Projectile Impact
Storm Area Loop

2.1.3 Extinguishing Light

To extinguish light the player must be right under a torch. Once he is there he will use his Shadow Blanket attack to extinguish it. When a light is extinguished any fairy warp gates that were once in its light will be destroyed.

2.2 Player Character Properties

2.2.1 Health

The player's health will be drained when he is attacked by the enemy fairies. If the player is in shadow and has not been damaged by fairies for several seconds, his health rapidly (almost instantly) regenerates to full. When the player loses all health, the game is lost. Whenever the player's health is damaged, the screen flashes with warm bright light.

2.2.2 Sounds

- Walking/Running (it will be footsteps or slithering or something depending on how the creature looks)
- Damaged (a hiss or moan)

2.2.3 Power Advancement

2.2.3.2 Improving Abilities

Each enemy and warp gate is worth a certain number of points if eliminated. Occasionally, the player is given the chance to improve his abilities by spending points earned from defeating enemies. This usually occurs during breaks between waves of enemies. The player is shown a screen where he can view the abilities he can improve, and the point costs associated with them. The player can use the mouse to click on abilities to spend points on. Regular combat controls do not function on this improvement screen, and in-world gameplay is paused. After the player is finished spending points, he may click a button to exit the improvement screen and resume in-world gameplay.

2.2.3.2.1 Possible Improvements

Damage Reduction (damage taken multiplied by 0.9^{ranks})
Learn Shadow Torrent
Learn Shadow Storm
Health Regeneration Delay Reduction (delay multiplied by 0.9^{ranks})
Shadow Blast Recharge Delay Reduction (delay multiplied by 0.9^{ranks})
Shadow Blanket Recharge Delay Reduction (delay multiplied by 0.9^{ranks})
Shadow Blanket Casting Speed Increase (rate multiplied by 1.1^{ranks})
Shadow Torrent Recharge Delay Reduction (delay multiplied by 0.9^{ranks})
Shadow Torrent Power Up Rate Increase (rate multiplied by 1.1^{ranks})
Shadow Storm Recharge Delay Reduction (delay multiplied by 0.9^{ranks})
Shadow Storm Power Up Rate Increase (rate multiplied by 1.1^{ranks})

2.3 Enemies

2.3.1 Enemy Types

2.3.1.1 Projectile Fairy

2.3.1.1.1 Behavior

This is the fairy that will be a dynamic light source. It will move slowly. It will fire its projectile attack at the player if the player is within its attack range. It will not continue to approach the player after getting within a particular distance (which is fairly close to the player) but will pursue the player if the distance between them subsequently exceeds this minimum distance.

2.3.1.1.2 Attack

The attack will be a middle ranged attack that shoots a cloud of fairy dust at the shadow creature. The fairy may use its attack unlimited times, but delays a random amount of time between firing.

2.3.1.1.3 Appearance

The fairy is to be approximately basketball sized and have a very cutesie look to add to the overall silliness of the game.

2.3.1.1.3.1 Animation List

Flight movement
Attack sequence

- Channeling turning on the light
- Waving wand to turn on light

2.3.1.1.4 Sounds

- Attack (Magical cast)
- Death (High pitched scream?)
- Generic looping (Something extremely annoying and high pitched)

2.3.1.2 Fairy Swarm

2.3.1.2.1 Behavior

Its goal will be to attack the shadow creature and to light more torches. It will calculate which one is the closer target, between all the unlit torches and the player, and move towards that target. When the fairy is right next to a torch it will begin lighting it and after a few seconds near the torch, it will turn on the light.

2.3.1.2.2 Attack

They attack at a close range by swarming the player. When the swarm is near the shadow creature it will use a melee range attack until it is killed or out of range. It will look like a big cloud of fairies in the middle of the player's screen.

2.3.1.2.3 Appearance

It will look like a bunch of little light balls with wings flapping up and down. There will be A LOT of them in a swarm and they are tiny so there is no need for great detail.

2.3.1.2.3.1 Animation List

- Movement
- Attack (will be a bunch of fairies on the player's screen)

2.3.1.2.4 Sounds

- Swarming/buzzing sound

2.3.1.3 Big Fairy

2.3.1.3.1 Behavior

The big fairy can spawn other fairies at random intervals to a random empty location within range. It also approaches the player while firing its attack at him. It fires its attack at random intervals as long as the player is within attack range. It stops pursuing the player if it enters a minimum distance, but resumes pursuit if the player ever exceeds that distance from it.

2.3.1.3.2 Attack

The fairy fires a projectile at the player that explodes on collision with a character or level geometry. The explosion deals damage in a radius, but only harms the player. After explosion, the projectile leaves a cloud of fairy dust that affects a radius centered on the projectile's impact point. The cloud persists for some time. While the player is in the cloud, he takes damage over time, and has damage he receives from any source increased by a percentage. Fairies in the cloud have damage received from any source decreased by a percentage, and heal damage over time.

2.3.1.3.3 Appearance

The big fairy is a big fat fairy. Its size gives it an imposing presence. It is a dynamic light source.

2.3.2 Points for Defeating Enemies

The player earns points for defeating enemies, which may be spent to learn or improve abilities. Each enemy type has its own value in points. If the player can defeat another enemy within a certain amount of time as the previous one, the player gains a multiplier that increases points gained from each enemy. The multiplier increases with each defeated enemy, but resets to 1 if a enough time passes after the last defeated enemy. These points apply toward the player's score and experience points. Experience points decrease when spent, but score does not lower. Players also earn points when fairy warp gates vanish, which counts as defeating an enemy for purposes of point multiplier benefits.

Enemy	Point Value
Projectile (Standard) Fairy	100
Fairy Swarm	100
Big Fairy	500
Warp Gate	1000

2.4 Level Environment

2.4.1 Harmful Light Sources

Harmful light sources come from the torches and the goal is for the Shadow creature to keep them at bay for as long as possible. The more light torches are the stronger the fairies are, the harder it is for the creature. There will be several in each room and they will be fairly spread apart. There will be just enough distance between them to make their lights touching. Light sources affect a radius around them, causing fairies within the radius to take reduced damage by a percentage. The light sources cause the player to take increased damage by a percentage, and prevent his abilities and health from recharging while he is within the radius and within line of sight of the light source. The light sources also illuminate the environment. When the player is close enough to be affected by a harmful light source, the player's screen glows with warm bright light like sunlight, which fades when the player is no longer close enough. This is similar to the screen glow when the player gets damaged, but has a different color.

2.4.2 Fairy Warp Gates

2.1.2.1 Behavior

As the game progresses there will be more and more warp gates that spawn faster. Warp gates will spawn fairies of varying types periodically. Later game warp gates will spawn are more likely to spawn more dangerous fairies. Warp gates may appear anywhere in the level that is nearby a potential light source, like a torch. If a gate exists for a certain continuous amount of time without being in the radius of a lit light source, the gate disappears and stops spawning fairies. If a gate without a light source gets a light lit near it, its vanishing timer resets and does not count down until the gate is no longer near a light source. The longer a particular gate has been open, the more frequently it will spawn fairies.

2.1.2.1.1 Gate Properties

Time interval between spawning sets of 3 fairies in a series (break between groups of 3)
Fairy type of 1st fairy in a set of 3, may be assigned to random or none
Fairy type of 2nd fairy in set of 3, may be assigned to random or none
Fairy type of 3rd fairy in set of 3, may be assigned to random or none
Time interval between spawning each of the 3 fairies within the same set
Amount of decrease in spawn intervals between each fairy set (percentage of current interval)
Number of sets after which spawn interval between sets begins to decrease
Number of sets after which spawn interval between sets ceases to decrease
Maximum number of sets the gate may spawn
Time the gate may survive without a nearby light source

2.1.2.2 Enemy Gate Waves

Warp gates appear in waves. Each one appears at some time after the beginning of the wave and spawns fairies. When every gate that is part of the wave has disappeared, the wave is finished.

2.1.2.3 Appearance

It will look like a glowing ball of light. It is very large and obvious. It illuminates the environment around it, and impedes the player and bolsters fairies as a harmful light source like a torch, but cannot be extinguished directly by shadow blanket.

2.1.2.4 Sound

- Pop (spawning)
- constant ringing

2.4.3 Rooms

There will be several rooms, each of which offer the player a different battle tactic and he will be allowed to move freely between them.

2.3.1.1 Main Entryway

The largest room in the house and where the player will spawn for the first round. It will be two floors with two large staircases on each side that leads a balcony with a series of doors. There will also be several doors on the first floor.

3. Graphical Interface

3.1 Player HUD

3.1.1 Charges (Ammo)

A bar that has a dark shadow in it with tick marks. Each tick mark represents a charge on his current attack type, and when the player shoots an attack from his current attack type, the shadow disappears down to the the next tick mark. There is also text that tells what the currently selected attack is, which changes if a different attack is selected.

3.1.2 Health

A bar that is a dark shadow. As the player is damaged light begins to fill the bar and once the bar is completely full of light the player loses.

3.1.3 Target Reticule

This is in the center of the screen. Player abilities are aimed toward the reticule.

3.1.4 Taking Damage Glow

When the player takes damage, the screen flashes in a glowing color.

3.1.5 In Harm Light Source Glow

When the player is within range of a harmful light source, the screen glows a color.

3.1.6 Current Experience Points

A number indicating the current amount of experience points. This increases when the player defeats enemies and decreases when the player spends points to upgrade abilities.

3.1.7 Chain Kills

A number indicating the number of enemies defeated all within a certain amount of time of each other. This increments with additional kills. This number only appears if the player defeats enemies in rapid succession. If too much time has passed since the last defeated enemy, the number vanishes and the chain counter resets.

3.1.8 Chain Experience Gain

A number indicating the amount of experience points that was accumulated in the previously completed chain kill. This number only appears briefly after a chain ends and the chain counter resets.

3.2 Title Menu

3.2.1 Appearance

It will have a background with the fairies on one side facing the shadow creature which is on the other side. There will be several option buttons. They will be lit up but when the mouse rolls over them they will become very shadowy. The menu also shows the player's score total from the previous play.

3.2.2 Buttons

- Play game
- How to play
- Credits
- Difficulty?
- Number of Players?
- Exit

3.3 Power Advancement Menu

This menu appears during breaks between enemy attacks. The menu lists the player's current score earned and experience points remaining. It has icons that can be clicked to gain ranks in the powers listed in section 2.2.3 Power Advancement. Next to each icon is a number listing the number of ranks already earned for that power. Hovering the mouse over the icon will highlight it. There is a text box that displays the name of whatever power the mouse is highlighting. There is a text box that lists the experience point cost of the ability the mouse is highlighting. Clicking a power's icon will increase the player's rank in that power and expend the listed experience cost from the player's points. There is a button that can be highlighted and clicked to exit the menu and continue the game.

3.4 Pause Menu

This menu appears when the player presses the pause button during gameplay. This pauses the game and gives the player a button to click to resume the game, and another to click to quit to the main menu. The buttons highlight on mouse hover.