

REVENGE OF THE DUZZLES

Dust has never been so dangerous!

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Design Document

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1. Game Overview

1.1. Basic concept

Revenge of the Duzzles is a top-down 2D shooter where the main character is a maid who finds herself being attacked by magical dust balls (duzzles) out for revenge. Armed with a feather duster and spray cleaner, she struggles to defend herself before they can cause her death due to violent allergies.

The duzzles all float at her from various directions and she can shoot them with the spray bottle (narrow, long-range stream or wide, short-range spray) to destroy them or swing her feather duster around her to deflect them.

The only catch is that the duzzles can also break apart and recombine into larger or smaller duzzles. The patterns of their breaking apart and recombining will depend on their color.

1.2. Tone

Fast-paced, frantic, cutesy, playful

1.3. Objective

Clear the screen of duzzles and then defeat the final boss

1.4. Audience

Top down shooters, also known as 'shmups', are one of the oldest video game genres, extending back to Space Invaders. We expect the audience of Revenge of the Duzzles to be existing 'shmup' fans, which are primarily males from 18-35.

2. Game Play

2.1. Camera and perspective

The player will have a top-down view of the world. The character will appear as if laying on her stomach with her head oriented towards the top of the screen (up)

2.2. Player movement

The player is always aiming up. While she can move all over the screen, she can only shoot directly ahead of her. She will have to use her shield to avoid being hit by duzzles from other directions and move the duzzles to parts of the screen where they can be hit with her spray bottle.

2.3. Player abilities

2.3.1. Spray bottle

The player fires with a "spray bottle". The spray bottle has two modes of fire: straight stream and wide spray. Projectiles from the spray bottle will all have the same amount of power. Whether spray or stream is used will only determine the range and behavior of the projectile. Players can hold down the button for continuous fire. Projectiles will not bounce off the sides of the screen the way the duzzles will.

2.3.1.1.Stream mode

This firing mode will shoot two streams of bullets from either side of the player—one stream per spray bottle. These bullets have a range that extends from the player to the edge of the screen. This firing mode has a faster rate of fire than spray mode but only two bullets are fired at a time and only straight ahead.

2.3.1.2.Spray mode

This firing mode will shoot two sprays of bullets from either side of the player (one stream per spray bottle). Each spray is made up of three bullets meaning that each time the player fires, a total of six bullets are emitted. These bullets are fired in arcs that emit diagonally away from the player sprite's upper left and right corners. The area between the two streams is approximately the areas protected by the feather duster. In contrast to the stream mode, these bullets will fire at a slower rate and have a short range. The bullets will fade after a set period of time.

2.3.2. Feather duster (shield)

The feather duster acts as a shield around the player. It will protect a certain amount of space around the player, and it can be moved around the player to deflect duzzles from any direction. When a duzzle runs into the shield, it will bounce off the shield and move in a different direction. The shield can be swung around the player.

2.3.3. Grazing

Coming too close to a duzzle without it touching her will only tickle her allergies. It will allow her to charge up a sneeze shot which acts as a bomb and can clear sections of the screen. *This feature will only be added if time allows.*

2.4. Player health

A single direct hit from a duzzle will cause the death of the maid. Luckily for her, they will have to hit her right in the face to cause this to occur (she has a smaller collision box than her graphic).

2.5. Enemy behavior

Details about the color specific behavior can be found in the table at the end of this section.

2.5.1. Dividing

At certain intervals, the duzzles will break apart into smaller duzzles to create more enemies. In this way, they are creating "bullets" comprised of smaller duzzles. Depending on the color, the duzzle may need to travel along a specific path before it divides. When the duzzle divides, the original duzzle (if any; the parent duzzle) will continue along its original vector while the fired duzzles (children) will shoot off into their specified directions.

2.5.1.1.Critical Mass

Duzzles will divide whenever they reach a critical mass. This critical mass is the minimum size that the duzzle needs to be to divide. Mass is expressed in the number of size 1 duzzles that a duzzle is built from.

The critical mass varies slightly depending on the color of the duzzle. It is calculated based on the number of child duzzles the duzzle will launch when it divides, and the required size of the parent duzzle that should be left.

2.5.1.2.Dancing

When a duzzle reaches critical mass, it will begin to “dance”. This is a visual warning that the duzzle is preparing to divide for the player. The dance will be manifested as an animation of the duzzles’ eye sprites. While dancing, the duzzles can still take damage. If they take enough damage to reduce the mass below critical mass before the dancing is complete, the duzzle will not divide.

2.5.2. Recombining

After breaking apart, the duzzle will need to bounce off shield or sides of the screen (walls) before they can recombine. If they are not capable of recombining, they will pass through each other. If a duzzle is not in a combinable state, it will be colored gray. Otherwise, it will be brightly colored.

2.5.3. Colors

The duzzles will be brightly colored. When two combine, they will assume a color that is a rough combination of the two combining colors. The pattern of the duzzles’ breaking part, as well as other behaviors—speed and direction—is dependent on the color.

2.5.4. Spawning

Enemies will spawn in a scripted pattern. The player will have to defeat all the duzzles in the level to clear the way for a giant duzzle which will act as a boss.

2.5.5. Destroying

The projectiles shot from the spray bottle will cause the duzzle to shrink to a smaller size as if it has separated but it will only be one instead of several duzzles. The remaining duzzle will continue on its previous trajectory.

2.5.6. Movement

The duzzles bounce around the screen off the walls. The speed and movement behavior of the duzzle depends mostly on their size. When two duzzles combine, they will assume the velocity of the larger duzzle. In the case of two of equal size, they will combine their vectors.

2.5.7. Behavior Table

Color	Critical Mass	Shots	Remaining	Pattern	Pattern Explanation	Direction	Path to Fire	Dance
<i>Color of the duzzle</i>	<i>Mass needed to divide</i>	<i>How many child duzzles</i>	<i>Mass of parent after division</i>	<i>Pattern of bullets shot from the center.</i>	<i>Logic of pattern</i>	<i>Direction of shot bullets from the emittion point (parent location)</i>	<i>Path/direction the duzzle will move while dancing</i>	<i>Behavior of the eye sprites during dance</i>
Yellow	11	6	5	radial	Cheery sun burst	Radial from center	to center of playfield	bottom of eyes arc upward as if smiling
Green	10	4	6	stream (one at a time)	Sick woozy vomit	random for each shot	none	Pupils get bigger and smaller independent of each other
Red	12	5	7	stream (one at a time)	Furious fighter pilot	Towards the player	none	narrow angrily and turn to player
Orange	10	10	0	upward V	Crazed Bomb	Upward	to bottom of playfield	pupils fire orange jets of flame
Purple	12	6	6	arc	Bored female queen waving a fan	Opposite of travelling direction	none	rolls eyes as if bored
Blue	11	8	3	2 streams (2 at a time)	Crying baby	Arc up slightly then down on either side resembling tears	none	pupils grow larger

2.6. Boss

The boss character will be a huge duzzle composed of a very large number of duzzles. This duzzle will be capable of larger and more difficult attacks than previous 'large' duzzles but will otherwise behave in a similar fashion.

2.7. Scoring

The player will get a set number of points for every duzzle destroyed. If it is destruction of a large one, it will lead yield less points than destroying a smaller one. The player will also get a small number of points for deflecting the duzzles with their feather duster shield. After surviving, attaining a high score is the player's secondary objective.

2.8. Difficulty/Heart

The player will not only need the reflexes to shoot, but the wisdom to know where to swing their feather duster "shield" and the knowledge of the patterns so they are not caught by surprise.

2.9. Game time

The level will have 3-5 minutes to complete.

2.10. Fun

The game will be fun! There will be a focus on pattern recognition and repetition, and the success completion of a level will be rewarding to a player who has struggled to finish it. The humorous style of the game will also lend to the level of fun, as it will keep players engaged and interested in seeing the conclusion. Players will gain increased satisfaction by the desire to continuously defeat high scores. Additionally, they will be rewarded for success more than punished for failure. This will increase player satisfaction and encourage players to play continuously after beating the game.

3. Background

3.1. Game world

Ridiculous version of the real world with magical feather dusters, super cleaning spray, and super military dust experiments. Lisette flies above the clouds and sees a variety of terrain below the clouds.

3.2. Story

Duzzles are a secret military experiment that escaped, a super dust intended to be dropped on enemy soldiers to immobilize them with intense sneezing fits. Their abilities to break apart and reform allowed them to slip out of the government lab where they were created.

The government tried a myriad of techniques to stop them but soon realized that only someone who had devoted their lives to dust elimination would have the sheer tenacity to eliminate the duzzles. They contacted Lisette, the Super Maid, to help them. Only Lisette, with her intimate knowledge of dust and her tried and true dust destroying techniques can wield the specially made feather duster and spray bottle to eliminate the dust trying to destroy the city.

3.3. Characters

3.3.1. Lisette

Ever since she was a child, Lisette has had an extreme allergy to dust. It often limited her ability to play with the other children who enjoyed hiding under beds and poking around other dusty places; she always lost hide and seek. Her frustration manifested itself in an extreme hatred of dust and a determination to rid the world of dust so that no one would ever be left out the way she was. Over the years, she developed a reputation for being an unstoppable dust destroying machine earning her the nickname Super Maid. Lisette has an extreme allergy to dust so being hit by the duzzles will kill her.

3.3.2. Duzzles

Originally created by the government as a super weapon, duzzles achieved sentience and they are *pissed!!* Being comprised of dust and possessing all the motives that one would expect of angry dust balls, they are out for revenge. Tired of being forced to hide under beds, being swept under rugs, and being shunned they long to take revenge on a world that shunned them.

4. Interfaces

4.1. HUD

4.1.1. Score tracker

Players will see their score accumulate. Tracking score will give players a secondary objective in addition to simple survival. This will keep our game interesting to players for a longer period.

4.1.2. Remaining duzzles

Players will need to know how many duzzles are left to track their progress. This could be a progress bar or a gauge indicating how many active duzzles there are

left to be destroyed. This bar will actually gauge the mass of duzzles so that duzzles of size 2 will show as 2 units on the gauge.

4.1.3. Sneeze charge

Sneeze bombs will use a stock system. There will be a bar describing current charge status for the next stock, and a row of icons for each sneeze stock we have stored.

4.1.4. Lives remaining

A set of icons that show how many Lisettes the player has left.

4.2.Controls

4.2.1. XBOX 360 controller

Shoot – right trigger; hold for continuous fire

Switch shooting modes – right bumper; tap to toggle between spray and stream

Bomb – Left trigger

Move – Left analog stick

Shield – Right analog stick

Confirm choice – A

Pause – Start

Go back – Back/B (from the pause screen, pressing start will go back instead of B)

Navigate Menu – D-pad

4.2.2. PC controls

Shoot – Space; hold for continuous fire

Switch shooting modes –T; tap to toggle between spray and stream

Bomb – mouse, left click

Move – WASD/arrow keys

Shield – mouse movement (note that the direction of the shield is based on the vector between the mouse location and the player)

Confirm choice – Enter

Pause – Esc

Go back – Esc

Navigate menu – arrow keys

4.3.Menus

4.3.1. Main menu

Start Game

Credits

Options

High Scores (if time allows)

Quit Game

4.3.2. Pause Menu

Resume

Options

Restart
Quit

4.3.3. Options Menu

Toggle between gamepad and mouse
Toggle fullscreen
Mute/unmute Sound effects
Mute/unmute music
Go back (to whatever previous screen)

5. Art & Music

5.1. Graphics Style

The duzzles will be brightly colored, with simple shading. Lisette will be drawn in an anime style.

The world will be simple shading, with pastels or muted colors to make it easier to differentiate from the more brightly-colored characters and duzzles from the background.

5.2. Sound and Music

The sound design will reflect the artistic style. The background music will typically utilize a light-hearted tone and a strong major key along with a quick tempo. Special consideration will be given to how the multitude of sound effects will sound over the background music, as a nearly constant stream of fire from the spray bottle will create a soft yet relatively constant sound of some sort. All of the sound effects will be designed in the same key to maintain consistency. Each background track will utilize the same key as the design of the sound effects.

6. Technical

6.1. Development environment

C++ and DirectX10 (November 2008 release) in Visual Studio 2008. Additional libraries include TinyXML.

6.2. End user system requirements

- Windows Vista (x32/x64)
- DirectX10 compatible video card (Geforce 8x+, Radeon HD2400+)
- 2 Gigabytes of RAM (estimated)
- Laptop/desktop speakers (for best sound)