Fatal Extreme University Paintball

Developed by:

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Introduction

Fatal Extreme University Paintball is a sideways shooter where the player has to fight other students in a paintball battle. The dean announced there would be a faculty wide paintball tournament, with the prize, a reserved parking space for the whole year. God save us all (yes, this is a Community reference; watch it if you haven't, it's a great show).

Installation

There is no need to do any installation, just run the `Fatal Extreme University Paintball.exe` executable located inside the game folder.

Gameplay

The game takes place in the infamous B corridor from FEUP, where the player battles enemies until he runs out of paper towels (lives). He can only be shot 3 times before having to clean himself (heal). There are traps placed around the map that, if they hit the player, will require him to clean instantly. Enemies on different floors also throw those "traps" as grenades at the player.

The map has crates that can be used as cover and has platforms to get to the upper floors. There are also benches, ATMs and vending machines that can also be used to go up. Remember that you need to go over the handrails to get on and off the upper floor.

Controls

The player can move fully in the two dimensional plain, using `A` and `D` (or `Left Arrow` and `Right arrow`) to move left and right. He can jump with `W`, `Up Arrow` or `Space Bar` and drop from platforms and from the map's upper floor with `D` or `Down Arrow`.

Using the mouse, the player can aim their weapon and fire with `Left Click`. Using the `Scroll Wheel` or `Q`, the player can switch between two weapons: a Pistol and an SMG (automatic fire).

To pause the game, press the `Escape` key.

Pickups

There are 3 different types of pickups distributed throughout the map and dropped occasionally by enemies when they are defeated.

Ammunition

Pistol Ammunition - quantity varies with difficulty.

SMG Ammunition - quantity varies with difficulty.

Lives

Paper Towel - used to clean the character when he has too much paint on him.

Power-ups

Every power-up has a duration of 15 seconds.

Backpack - used by the player to block incoming paint projectiles. This "shield" has to be aimed (just like the gun is aimed) in order to effectively block pellets.

Coffee - this power-up makes the player move faster.

Energy Drink - this power-up heightens the player's perception, making everything move in slow motion.

HUD (Head-up Display)

During gameplay, the player can see the **Number of Enemies Left** on the map in the top left corner, the **Time Passed** in the top right corner of the screen, the **Number of Paper Towels** in the bottom left corner, the **Score** on the bottom and the **Selected Weapon's Ammunition** in the bottom right corner. A **power-up duration bar** will appear when a power-up is consumed.

Difficulty

The difficulty changes the starting number of enemies (1, 3 or 6), the amount of ammo per drop (5, 4 or 3), the number of traps per floor (2, 4 or 8), the roaming distance of the enemies (50, 40 or 30) and the drop rate of the powerups (x1.5, x1.25 or x1).

Spawner

We made sure to distribute them evenly between the top and bottom floor, and the left and right of the player, and we always spawn the enemy at a horizontal distance of 15 from the player.

Development Highlights

Splatters

Splatters are placed where a pellet hits or is destroyed. They have to be placed individually in each object to give the illusion of depth in the environment. Sprite masks are used on the objects that will have splatters on them, so that they cut off where the object ends. In the case of the players, the splatters have to be removed as the player cleans himself (healing animation). They are destroyed throughout the animation as the paper towel goes over them.

When the pellet does not hit an object but travels its maximum distance, it is still destroyed and a splatter is placed on the walls and/or objects that were behind it. This also happens when a pellet hits another pellet or a grenade/trap.

Enemy AI

The enemy AI has 3 states: **fleeing**, **roaming** and **regular/chasing**.

In the **roaming state**, which happens while the enemy is on a different floor than the player, the enemy roams within a maximum horizontal distance of the player, and when he crosses the same horizontal position as the player, he throws a grenade at him.

In the **fleeing state**, which happens while the player is healing, the enemy runs in the opposite direction from the player, or in case he would run into a wall, he runs in the other direction.

In his **regular/chasing state**, which happens while the enemy is on the same floor as the player, he will chase the player. If he is close enough and has a direct line of sight, he will shoot the player. If he sees an obstacle, he will jump over it and flank the player (jump over him and shoot him from the other side).

Handling the transition between each floor

In our game, the player has total control of which floor he wants to be, being able to seamlessly switch between each floor using the platform mechanics. That brings the need for a sorting layer management that makes sure the player is always in the correct sorting order relative to the other items in each floor.

When the player is on the upper floor, he has to be behind the handrails, but when he's on the lower floor, he has to be in front of the handrails. The same applies to the enemies and items, even though they're not able to switch floors (however, if such a feature were to be implemented, they would already adjust their sorting layer accordingly without any further changes).

To make the game more realistic, the player needs to leap over the handrails to both get on and off the upper floor. That feature was achieved using a height check that verifies if an object is entering or leaving the area, enabling or disabling the collisions accordingly.

Credits

Sprites

Player - [blackhammer](#)

Enemies - [JAF exe](#)

ATM - [user7030688 from Freepik](#)

Bench - Mod. by Filipe Barbosa from [Eurway](#)

Crate - Mod. by Filipe Barbosa from [magroski's](#)

Vending Machine - [PixelJum](#)

Walls/Floors/Doors - [LimeZu](#)

Gun Pellet - [Pixelboy](#)

Gun Splatters - [Es](#)

Guns and Ammo Items - [Kay Lousberg](#)

Backpack and Coffee Items - [Kenney](#)

Paper Towel Item - [Notch](#)

Crosshair - [Kenney](#)

Menu Background - [dklon](#)

Power-up Bar - [Brackeys](#)

Trap - [cheekyinkling](#)

Mouse Icons - [Hoang Loi](#), [Benjamin Sommerlad](#)

Handrail - Filipe Barbosa

Energy Drink - Filipe Barbosa

Sounds

Running Sound - [Juandamb](#)

Jump Sound #1 - [felixyadomi](#)

Jump Sound #2 - [iimck](#)

Jump Sound #3 - [felixyadomi](#)

Shot Sound - [Aliedsvwyk](#)

Splatter Sound [#1](#), [#2](#) & [#3](#) - JakLocke

Damage Sound [#1](#) & [#2](#) - mrickey13

Damage Sound #3 - [Deathscyp](#)

Damage Sound #4 - [BehanSean](#)

Trap Activation Sound - [Deathscyp](#)

Trap Break Sound - [unfa](#)

Coffee/Drink Sound - [dersuperanton](#)

Backpack Sound - [AntumDeluge](#)

Ammo Sound - [Pjkasinski3](#)

Paper Towel Sound - [BennettFilmTeacher](#)

Animations

Player (Walking/Jump/Idle) - [blackhammer](#)

Player (Heal/Lose/Hit) - Filipe Barbosa

Enemies (Walking/Idle) - [JAF exe](#)

Enemies (Lose/Hit) - Filipe Barbosa

Items - Filipe Barbosa

Music

Local Forecast - Slower by Kevin MacLeod

Link:

https://incompetech.filmmusic.io/song/3988-local-forecast---slower

License: https://filmmusic.io/standard-license

Implementations

Map Design - Filipe Barbosa/João Araújo

Player - Filipe Barbosa/João Araújo

Enemy AI - Filipe Barbosa/João Araújo

Enemy Spawns - João Araújo

Health System - Filipe Barbosa/João Araújo

Items - Filipe Barbosa

Power-ups - Filipe Barbosa

Traps - João Araújo

Splatter Placement - Filipe Barbosa

Floor Switching - Filipe Barbosa

Difficulties - João Araújo

Menus, UI/HUD - João Araújo (using [TextMesh Pro](#))

Camera - João Araújo (using [Cinemachine](#))

Shaders - Filipe Barbosa (using [Universal Render Pipeline](#))

Special Thanks

[Brackeys' YouTube Channel](#) - Couldn't have done it without you ❤