Survival Horde Gamemode

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Introduction:

Thank you for your interest in Survival Horde Gamemode! This product was designed to be pretty frictionless when it comes to setup and implementation. It is used to build an "Endless Horde" type of game, similar to Call Of Duty: Zombies.

The system allows for multiple enemy types and optional boss rounds.

If you have any questions or suggestions for features, feel free to reach out to me here:

gamedev@ryanmcfate.com

I'm more than happy to help where I can.

Quick Start:

To implement this into your game, the minimum steps required are to place BP_EndlessRoundsGamemode into your level, and make sure "Desired Pawn Classes" has at least once pawn for spawning. You also need to place at least one BP_EnemySpawn into your level for enemies to spawn on. BP_SurvivalInfo should be called and drawn to your player pawn/controller, however this is technically not necessary, although you won't see any information about round number or timer if you don't.
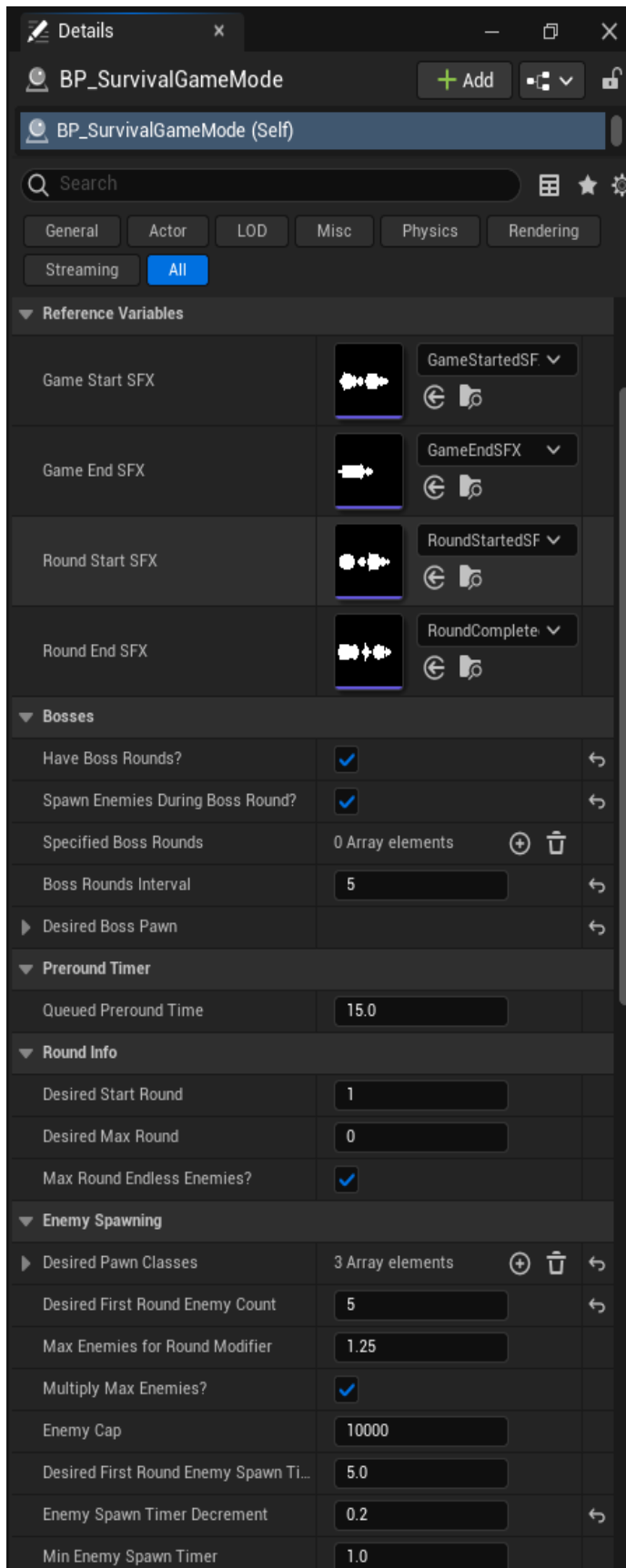
BP_EndlessRoundsGamemode

Game Start/End, Round Start/End (Sound Wave):

These are the sound effects used at the start and end of the game / round.

Have Boss Rounds? (bool)

Enabling this will allow you to have boss rounds where a unique boss pawn spawns at the beginning of the round.

Spawn Enemies During Boss Round? (bool)

Enabling this will allow the normal wave of enemies to spawn during the boss round. Disabling this will make the round a solo boss fight.

Specified Boss Rounds (array:int)

This array is a list of every round you want the boss rounds to be. If you want them set at a consistent interval, see the next setting.

Boss Rounds Interval (int)

This is the interval at which boss rounds will happen. Setting this to zero disables intervals, but you can still use the specified list above to pick specific rounds.

Desired Boss Pawn (struct)

This struct takes the pawn class for the boss, as well as it's Behavior Tree for AI. The weighted value is ignored for bosses.

Queued Preround Time (float)

This setting is used to determine how much time (in seconds) the preround is.

Desired Start Round (int)

The round you want to start the game on. Every round prior to this number will be simulated before the game starts so that the proper number of enemies and the enemy spawn timer are appropriate for the round.

Desired Max Round (int)

If you want the game to have a max round cap, set this int to that number. Setting this the 0 will disable this.

Max Round Endless Enemies? (bool)

If you have set a max round cap, enabling this will make the last round spawn enemies indefinitely. If you disable this, the game will end after the last enemy is destroyed on the final round.

Desired Pawn Classes (array:struct)

This array holds every type of enemy you want to spawn during the game. Each struct takes a pawn class, a weighted integer value, and an AI Behavior Tree. The weighted value is used to determine the chance that this particular enemy spawns during a round. If you have three enemy types, one with a value of 5, one with the value of 25, and one with the value of 70, they will spawn with a 5/100 chance, 25/100 chance, and 70/100 chance respectively.

Desired First Round Enemy Count (int)

This is the number of enemies that start on round 1.

Max Enemies for Round Modifier (float)

This number represents how the enemy count increases over time. If Multiply Max Enemies is checked, the number of enemies per round will be multiplied by this number every round, creating a steep curve of enemies toward later rounds. If Multiply Max Enemies is unchecked, the number of enemies per round will be added by this number every round, creating a linear increase of enemies. This number should be at least 1.

Multiply Max Enemies? (bool)

Enabling this will make the number of enemies multiply every round, disabling this will make the number of enemies add every round.

Enemy Cap (int)

This is the maximum number of enemies that can ever be spawned in a single round, to help prevent later rounds from having enemies in the hundreds of thousands or more.

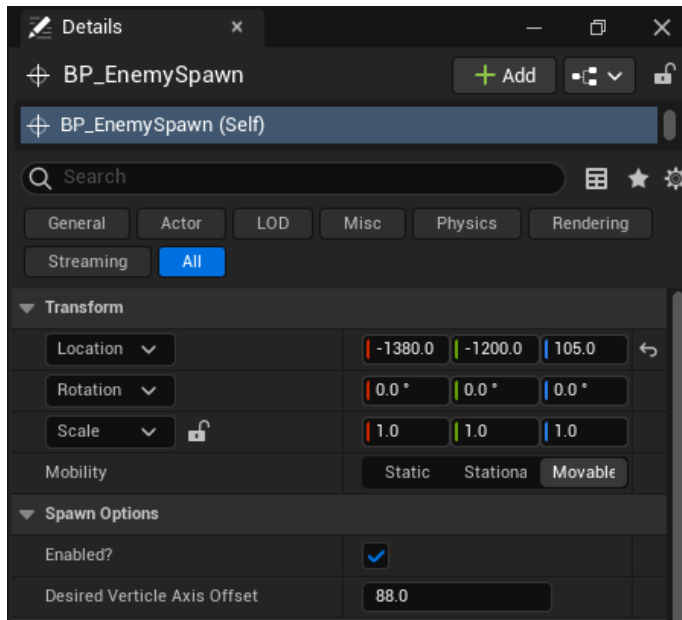### Desired First Round Enemy Spawn Timer (float)

This is how long in seconds it will take between enemies spawning on the first round.

Enemy Spawn Timer Decrement (float)

This is the number of seconds that are deducted from Desired First Round Enemy Spawn Timer every round, creating a linear decrease in spawn times for enemies.

Min Enemy Spawn Timer (float)

This is the minimum number of seconds that can ever occur between enemy spawns. This helps prevent every enemy spawning at once instantaneously in later rounds.

Details

BP_EnemySpawn

BP_EnemySpawn (Self)

Search

General | Actor | LOD | Misc | Physics | Rendering
Streaming | All

▼ Transform
Location ⌄		-1380.0	-1200.0	105.0
Rotation ⌄		0.0 °	0.0 °	0.0 °
Scale ⌄		1.0	1.0	1.0
Mobility		Static	Stationa	Movable

▼ Spawn Options
| Enabled? | ✔ |
| Desired Verticle Axis Offset | 88.0 |

BP_EnemySpawn

Enabled? (bool)

If enabled this spawn point will be active at the beginning of the game. If disabled, the spawn point will not be used until it is enabled at runtime.
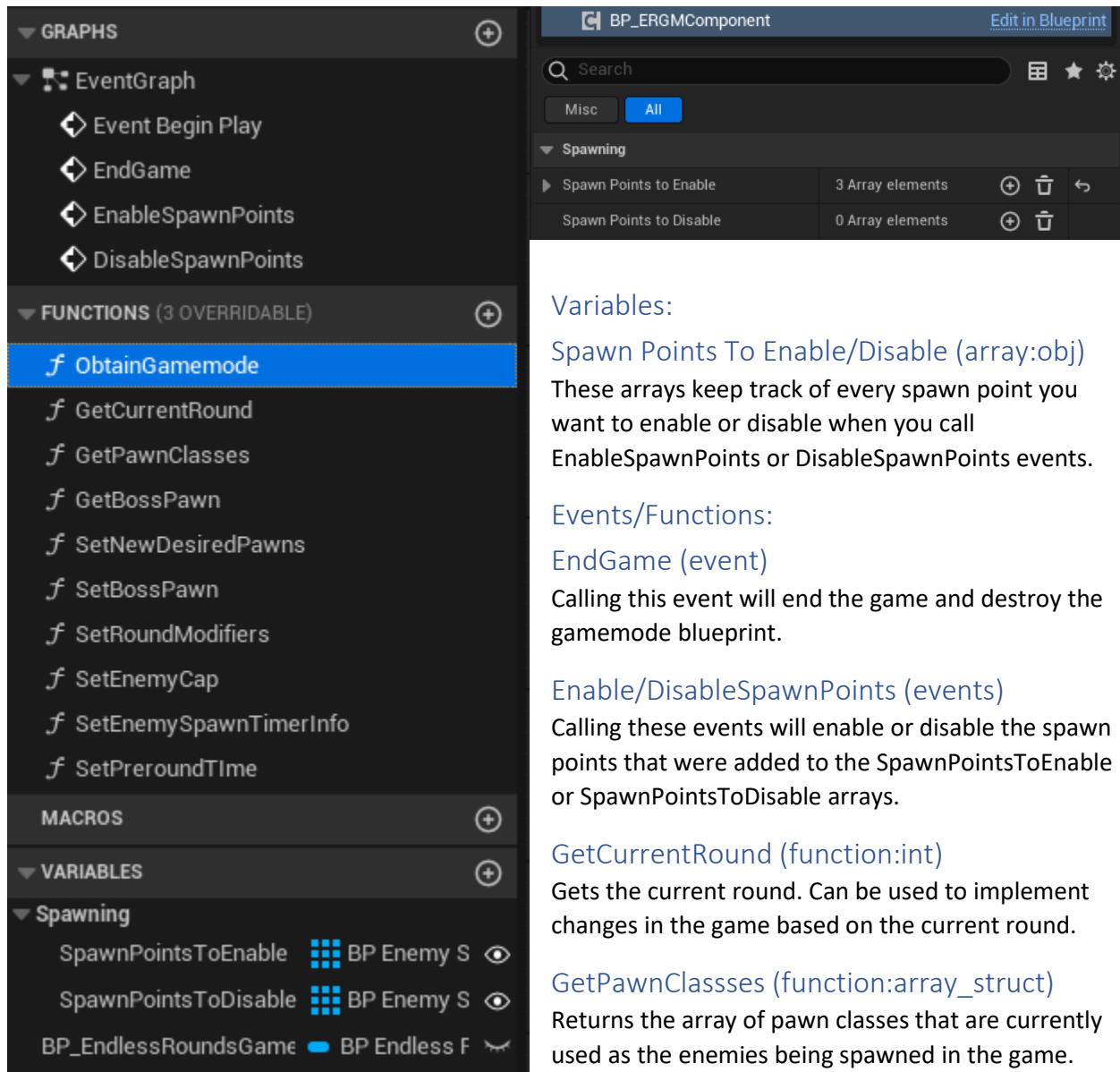
DesiredVerticleAxisOffset (float)

Spawn points should be placed on ground level, and this value will offset the point vertically so that pawns won't spawn in the ground.

BP_ERGMComponent

This blueprint is a component that can be added to any other blueprint in your project. Using the reference to the component allows you to make changes to the survival gamemode at runtime. This component would be used on things like doors that open or close permanently to enable or disable spawn points in certain rooms to prevent enemies spawning in a part of the map that isn't open yet.

There are also a handful of functions that can obtain or change parts of the gamemode at runtime for a more customized experience.

Variables:

Spawn Points To Enable/Disable (array:obj)

These arrays keep track of every spawn point you want to enable or disable when you call EnableSpawnPoints or DisableSpawnPoints events.

Events/Functions:

EndGame (event)

Calling this event will end the game and destroy the gamemode blueprint.

Enable/DisableSpawnPoints (events)

Calling these events will enable or disable the spawn points that were added to the SpawnPointsToEnable or SpawnPointsToDisable arrays.

GetCurrentRound (function:int)

Gets the current round. Can be used to implement changes in the game based on the current round.

GetPawnClassses (function:array_struct)

Returns the array of pawn classes that are currently used as the enemies being spawned in the game.

GetBossPawn (function:struct)

Returns the pawn class that is currently being used as the boss enemy during boss rounds.

SetNewDesiredPawns (function)

Allows you to submit a new list of pawns for use for spawning in the game. This could be used in conjunction with GetCurrentRound to switch the types of enemies spawning (or even just change their weighted distribution) at a certain round for instance.

SetBossPawn (function)

Allows you to change the type of boss that spawns during boss rounds. This could be used in conjunction with GetCurrentRound to switch the boss that spawns during certain boss rounds for instance.

SetRoundModifiers (function)

Allows you to change the Max Enemies for Round Modifier and Multiply Max Enemies. You could use this to change the difficulty curb at different points of the game by increasing spawn amounts multiplicatively or additionally on the fly.

SetEnemyCap (function)

Allows you to adjust the enemy cap (per round) during the game.

SetEnemySpawnTimerInfo (function)

Allows you to change the Enemy Spawn Timer Decrement and Min Enemy Spawn timer at runtime.

SetPreroundTime (function)

Allows you change the Preround timer. If the preround timer is changed during preround, the change will not take effect until the next round.

BP_SurvivalInfo

This blueprint is a Widget UI blueprint that you can call to your character and will display the round and pretimer info during the game. There isn't really anything you need to change blueprint wise here, however you could change the font/location of text to anything you please for the aesthetic of you game.