Kill Mo' Chickens

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

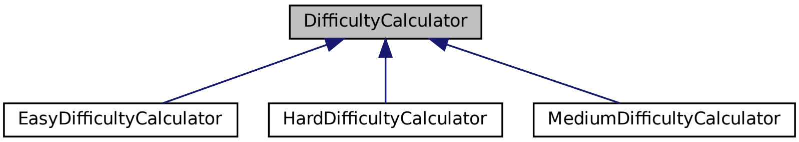
Chapter 3

Class Documentation

3.1 DifficultyCalculator Class Reference

The Base class for a difficulty calculator. Cannot construct directly, instead use the `DifficultyCalculatorFactory.Create` method.

Inheritance diagram for DifficultyCalculator:



Public Member Functions

- virtual List< SpawnOrder > CalculateSpawnOrder (int roundNumber)

  Base Virtual function for Calculating the Spawn Order. This function returns a list of `SpawnOrder` objects that should be spawned for the corresponding round

Protected Member Functions

- int getSpawnAmount (int cost, ref int levelValue)

  Getter function for getting the amount of a particular enemy rank to spawn
- Godot.Collections.Array< int > getEnemyRanks ()

  Gets the available ranks of enemies that can be spawned.

Protected Attributes

- DifficultyTable difficultyTable

  The current difficulty table that is loaded.

Package Functions

- DifficultyCalculator (DifficultyTable difficultyTable)

  Internal/Private Constructor

3.1.1 Detailed Description

The Base class for a difficulty calculator. Cannot construct directly, instead use the `DifficultyCalculatorFactory.Create` method.

3.1.2 Constructor & Destructor Documentation

3.1.2.1 DifficultyCalculator()

```
DifficultyCalculator.DifficultyCalculator (
            DifficultyTable difficultyTable )  [package]
```

Internal/Private Constructor

Parameters

difficultyTable	

3.1.3 Member Function Documentation

3.1.3.1 CalculateSpawnOrder()

```
virtual List<SpawnOrder> DifficultyCalculator.CalculateSpawnOrder (
            int roundNumber )  [virtual]
```

Base Virtual function for Calculating the Spawn Order. This function returns a list of `SpawnOrder` objects that should be spawned for the corresponding round

Parameters

roundNumber	The Current Round Number

Returns

Reimplemented in HardDifficultyCalculator, and EasyDifficultyCalculator.

3.1.3.2 getEnemyRanks()

```
Godot.Collections.Array<int> DifficultyCalculator.getEnemyRanks ( )  [protected]
```

Gets the available ranks of enemies that can be spawned.

Returns

The Available ranks to spawn

3.1.3.3 getSpawnAmount()

```
int DifficultyCalculator.getSpawnAmount (
             int cost,
             ref int levelValue )  [protected]
```

Getter function for getting the amount of a particular enemy rank to spawn

Parameters

cost	The cost of the enemy to spawn.
levelValue	The total amount of enemy "Value" for the level.

Returns

The amount of enemies to spawn.

3.1.4 Member Data Documentation

3.1.4.1 difficultyTable

```
DifficultyTable DifficultyCalculator.difficultyTable  [protected]
```

The current difficulty table that is loaded.

3.2 DifficultyCalculatorFactory Class Reference

Factory Function for getting a DifficultyCalculator class object

Static Public Member Functions

- static DifficultyCalculator CreateCalculator (DifficultyTable difficultyTable, Difficulty difficulty)

  Get a new Difficulty Calculator class obj based on the Difficulty

3.2.1 Detailed Description

Factory Function for getting a DifficultyCalculator class object

3.2.2 Member Function Documentation

3.2.2.1 CreateCalculator()

```
static DifficultyCalculator DifficultyCalculatorFactory.CreateCalculator (
            DifficultyTable difficultyTable,
            Difficulty difficulty )  [static]
```

Get a new Difficulty Calculator class obj based on the Difficulty

Parameters

difficultyTable	DifficultyTable to be used by the calculator.
difficulty	The Difficulty to be used for the calculator

Returns

A Difficulty Calculator of the passed difficulty

3.3 DifficultyTable Class Reference

A Resource defining the difficult table

Inherits Resource.

Public Attributes

- Godot.Collections.Array< int > EnemyRanks
- int[ ] RoundDifficultyValue

  An Array of the total amount of enemy "value" to spawn each round

3.3.1 Detailed Description

A Resource defining the difficult table

3.3.2 Member Data Documentation

3.3.2.1 EnemyRanks

```
Godot.Collections.Array<int> DifficultyTable.EnemyRanks
```

3.3.2.2 RoundDifficultyValue

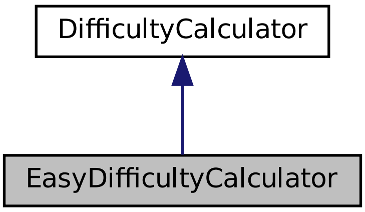
```
int [] DifficultyTable.RoundDifficultyValue
```

An Array of the total amount of enemy "value" to spawn each round

3.4 EasyDifficultyCalculator Class Reference

Difficulty Calculator For the Easy Difficulty

Inheritance diagram for EasyDifficultyCalculator:



Public Member Functions

- override List< SpawnOrder > CalculateSpawnOrder (int roundNumber)

  Function for Calculating the Spawn Order. This function returns a list of `SpawnOrder` objects that should be spawned for the corresponding round. Easy Mode lowers the enemy 'spawn budget' by 20%

Package Functions

- **EasyDifficultyCalculator** (DifficultyTable difficultyTable)

Additional Inherited Members

3.4.1 Detailed Description

Difficulty Calculator For the Easy Difficulty

3.4.2 Member Function Documentation

3.4.2.1 CalculateSpawnOrder()

```
override List<SpawnOrder> EasyDifficultyCalculator.CalculateSpawnOrder (
             int roundNumber )  [virtual]
```

Function for Calculating the Spawn Order. This function returns a list of `SpawnOrder` objects that should be spawned for the corresponding round. Easy Mode lowers the enemy 'spawn budget' by 20%

Parameters

roundNumber	The Current Round Number

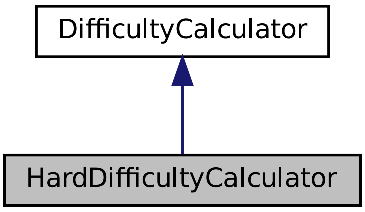
Returns

Reimplemented from DifficultyCalculator.

3.5 HardDifficultyCalculator Class Reference

Difficulty Calculator For the Hard Difficulty

Inheritance diagram for HardDifficultyCalculator:



Public Member Functions

- override List< SpawnOrder > CalculateSpawnOrder (int roundNumber)

  Function for Calculating the Spawn Order. This function returns a list of `SpawnOrder` objects that should be spawned for the corresponding round. Hard Mode raises the enemy 'spawn budget' by 50%

Package Functions

- **HardDifficultyCalculator** (DifficultyTable difficultyTable)

Additional Inherited Members

3.5.1 Detailed Description

Difficulty Calculator For the Hard Difficulty

3.5.2 Member Function Documentation

3.5.2.1 CalculateSpawnOrder()

```
override List<SpawnOrder> HardDifficultyCalculator.CalculateSpawnOrder (
            int roundNumber )  [virtual]
```

Function for Calculating the Spawn Order. This function returns a list of `SpawnOrder` objects that should be spawned for the corresponding round. Hard Mode raises the enemy 'spawn budget' by 50%

Parameters

roundNumber	The Current Round Number

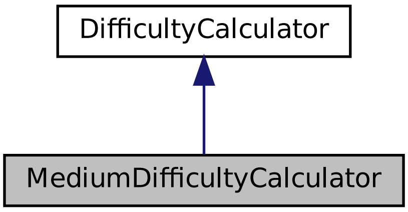
Returns

Reimplemented from DifficultyCalculator.

3.6 MediumDifficultyCalculator Class Reference

Difficulty Calculator For the Medium Difficulty

Inheritance diagram for MediumDifficultyCalculator:



Package Functions

- **MediumDifficultyCalculator** (DifficultyTable difficultyTable)

Additional Inherited Members

3.6.1 Detailed Description

Difficulty Calculator For the Medium Difficulty

3.7 RoundManager Class Reference

The Round Manager for Processing/tracking round data across the rounds of a level. The class is also in charge of spawning the enemies, tracking round health and money, signaling when a round ends, and signaling when the player wins or loses

Inherits Node2D.

Public Member Functions

- override void _Ready ()

  Called when the object enters the scene tree. Sets up queue objects
- void loadLevel (Level levelData, int difficulty)

  Loads a level from a `Level` object and creates a difficulty table.
- void startRound ()

  Called to start a round. This method starts the next round, getting the `SpawnOrder`'s from the `DifficultyCalculator`, and begins the spawning timer.
- override void _Process (double delta)

  Godot Process function called every engine cycle Processes spawning enemies when the spawn timer is up. Also handles emitting the end game signals.
- delegate void GameLostEventHandler ()

  Signal to emit when the game is lost.
- delegate void GameWonEventHandler ()

  Signal to emit when the game is Won.

Public Attributes

- List< SpawnOrder > spawnQueue

  Holds the queue of enemy's to spawn
- List< BaseChicken > liveEnemies

  Holds the currently living enemies
- bool roundRunning = false

  Indicates if a round is running.

Private Member Functions

- void spawnEnemy ()

  Internal method used for spawning the next enemy in the spawn queue
- void HandleEnemyDiesSignal (BaseChicken enemy)

  Enemy Death Signal Handler.
- void HandleEnemyFinishedSignal (BaseChicken enemy)

  Enemy Finished path Signal Handler.
- void HandleEnemySplit (BaseChicken enemy)

  Enemy Split Event Handler.
- void cleanLevel ()

  Clears spawn queue and all loaded enemies. Called before exporting the level data to save

Private Attributes

- DifficultyCalculator difficultyCalculator

  The DifficultyCalculator for the selected difficulty
- Level levelData

  The Loaded Level object
- double **currentTime**
- double **nextSpawnTime**

3.7.1 Detailed Description

The Round Manager for Processing/tracking round data across the rounds of a level. The class is also in charge of spawning the enemies, tracking round health and money, signaling when a round ends, and signaling when the player wins or loses

3.7.2 Member Function Documentation

3.7.2.1 _Process()

```
override void RoundManager._Process (
             double delta )
```

Godot Process function called every engine cycle Processes spawning enemies when the spawn timer is up. Also handles emitting the end game signals.

Parameters

delta	

3.7.2.2 _Ready()

```
override void RoundManager._Ready ( )
```

Called when the object enters the scene tree. Sets up queue objects

3.7.2.3 cleanLevel()

```
void RoundManager.cleanLevel ( )  [private]
```

Clears spawn queue and all loaded enemies. Called before exporting the level data to save

3.7.2.4 GameLostEventHandler()

```
delegate void RoundManager.GameLostEventHandler ( )
```

Signal to emit when the game is lost.

3.7.2.5 GameWonEventHandler()

```
delegate void RoundManager.GameWonEventHandler ( )
```

Signal to emit when the game is Won.

3.7.2.6 HandleEnemyDiesSignal()

```
void RoundManager.HandleEnemyDiesSignal (
             BaseChicken enemy )  [private]
```

Enemy Death Signal Handler.

Parameters

enemy	The associated enemy.

3.7.2.7 HandleEnemyFinishedSignal()

```
void RoundManager.HandleEnemyFinishedSignal (
             BaseChicken enemy )  [private]
```

Enemy Finished path Signal Handler.

Parameters

enemy	The associated enemy.

3.7.2.8 HandleEnemySplit()

```
void RoundManager.HandleEnemySplit (
             BaseChicken enemy )  [private]
```

Enemy Split Event Handler.

Parameters

enemy	The associated enemy.

3.7.2.9 loadLevel()

```
void RoundManager.loadLevel (
             Level levelData,
             int difficulty )
```

Loads a level from a `Level` object and creates a difficulty table.

Parameters

levelData	The current level data.
difficulty	Indicates the Difficulty to use.

3.7.2.10 spawnEnemy()

```
void RoundManager.spawnEnemy ( )  [private]
```

Internal method used for spawning the next enemy in the spawn queue

3.7.2.11 startRound()

```
void RoundManager.startRound ( )
```

Called to start a round. This method starts the next round, getting the `SpawnOrder`'s from the `DifficultyCalculator`, and begins the spawning timer.

3.7.3 Member Data Documentation

3.7.3.1 difficultyCalculator

```
DifficultyCalculator RoundManager.difficultyCalculator  [private]
```

The DifficultyCalculator for the selected difficulty

3.7.3.2 levelData

```
Level RoundManager.levelData  [private]
```

The Loaded Level object

3.7.3.3 liveEnemies

```
List<BaseChicken> RoundManager.liveEnemies
```

Holds the currently living enemies

3.7.3.4 roundRunning

```
bool RoundManager.roundRunning = false
```

Indicates if a round is running.

3.7.3.5 spawnQueue

```
List<SpawnOrder> RoundManager.spawnQueue
```

Holds the queue of enemy's to spawn

3.8 SpawnOrder Class Reference

A Single spawn order element for controlling what and when to spawn an enemy

Inherits Node.

Public Member Functions

- SpawnOrder (Chicken.BaseChicken enemy, int spawnDelay)

  Creates A spawn Order for a passed type that implements IEnemyType

Public Attributes

- BaseChicken Enemy

  The Enemy class use for the spawn.
- int spawnDelay

  The delay in milliseconds to wait before spawning this enemy

3.8.1 Detailed Description

A Single spawn order element for controlling what and when to spawn an enemy

3.8.2 Constructor & Destructor Documentation

3.8.2.1 SpawnOrder()

```
SpawnOrder.SpawnOrder (
            Chicken.BaseChicken enemy,
            int spawnDelay )
```

Creates A spawn Order for a passed type that implements IEnemyType

Parameters

enemy	
spawnDelay	

3.8.3 Member Data Documentation

3.8.3.1 Enemy

```
BaseChicken SpawnOrder.Enemy
```

The Enemy class use for the spawn.

3.8.3.2 spawnDelay

```
int SpawnOrder.spawnDelay
```

The delay in milliseconds to wait before spawning this enemy

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