# Cave Exploration Starter Kit

1.3

Sun Jan 10 2016 16:02:50

# Contents

# Chapter 1

# Namespace Index

## 1.1 Packages

Here are the packages with brief descriptions (if available):

# Chapter 2

# Hierarchical Index

## 2.1 Class Hierarchy

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

# Chapter 3

# Class Index

## 3.1 Class List

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

# Chapter 4

# Namespace Documentation

## 4.1 CaveExploration Namespace Reference

### Classes

- class AudioPlayer

  *Handles playing audio clips, includes methods to handle volume, pitch, looped status, and playing songs forwards/backwards.*
- class BackgroundAudio

  *Plays a background audio clip on start.*
- class BobSprite

  *"Bobs" sprite up and down.*
- class BottomCheck

  *Used to determine if the player is grounded and apply fall damage.*
- class Bounce

  *AI for the "bounce" enemy. Handles animation, audio and AI states.*
- class CameraBackground

  *Handles changing of background image based on currently used texture pack.*
- class CharacterSpeech

  *Responsible for showing character speech (text) on screen.*
- class Collectible

  *Attach to collectible in game. Handles seeking player, and giving player a light boost on collection.*
- class CollectiblePickedUpEvent
- class CollectibleSpawner

  *Spawns collectibles on round start.*
- class DamagePlayerOnCollision

  *Attach to any object to damage the player when a collision with this object occurs.*
- class DirectorFullGame

  *Manages the game scene. Starts level, player, and collectible placement/creation. Handles player dead and level complete events.*
- class DirectorGridGenerator

  *Managers the example grid generator scene.*
- class EnableColliderOnTriggerExit

  *Disables a colliders trigger (i.e. enables collisions with a collider) when the collider exits the specified trigger. Useful for shooting a projectile to ensure it does not collide with the enemy/player that shot the projectile.*
- class EnemiesPlaced
- class EnemyAI

  *Abstract base class for all enemy AI.*

- class EnemyHealth

  *Handles enemy health and death (including audio and animation).*
- class EnemyKillCountSpeech

  *Shows character speech on enemy killed.*
- class EnemyKilled
- class EnemyProjectile

  *Responsible to updating enemy projectiles. And applying damage on collision.*
- class EnemySpawner

  *Responsible for spawning enemies at level start.*
- class Events
- class Explode

  *Spawns an explosion on mouse click at the objects position.*
- class Explosion

  *Attach to an explosion. Kills an enemy in explosion radius.*
- class FollowPlayer

  *Attach to camera. Used to follow player once spawned.*
- class GameEvent

  *All game events inherit this abstract base class.*
- class GridManager

  *Singleton. Handles level generation.*
- class Health

  *The players health.*
- class IntroductorySpeech

  *Introductory speech. For example, can be used to introduce a level, the game, controls etc.*
- class IntroductorySpeechFinishedEvent

  *Raised when the players intro speech has finished.*
- class JetAudio

  *Handles playing audio on jet pack use.*
- class Jetpack

  *Responsible for controlling the players jetpack.*
- class JetpackBar

  *Visual representation of the jetpack fuel.*
- class LevelCompleteEvent

  *Raised when the player completes a level.*
- class LevelEnd

  *Added to the exit block for the current level. When the character enters the blocks collider LevelComplete is set to true. This is quieried in the Director Class.*
- class LevelGeneratedEvent

  *Raised when a level has finished being generated.*
- class LevelGeneratedSpeechRequired

  *Raised when a level has been generated and player speech is required.*
- class LightDecreaseEvent

  *Raised when the players light should be decreased e.g. on damage.*
- class LightIntensityPulse

  *Pulses a lights intensity between two values over time.*
- class LightPulse

  *Used to pulse a light variable.*
- class LightRangePulse

  *Pulses a light range between two values over time.*
- class Node

*Logical representation of a block. Holds the node type (e.g. wall, floor etc), it's coordinates (a pointer to the node in a 2d array - not it's position on screen), it's position on screen and path finding variables.*

- class NodeCluster

  *Represents a group of neighbouring floor nodes i.e. a cavern in the environment.*

- class NodeClusterManager

  *Singleton. Identifies, manages and holds refence to the different node clusters. Can connect un-connected clusters using path finding.*

- class NodeList

  *Encapsulates 2D array of all active nodes in game. Provides helper methods such as Add and Contains that mimick there list counterparts.*

- class ObjectManager

  *Manages adding and retrieving objects from the object pool.*

- class ObjectPool

  *Object pool system.*

- class PathManager

  *Creates a path between two nodes.*

- class Player

  *Handles player movement.*

- class PlayerAnimation

  *Responsible for updating the players animation based on movement.*

- class PlayerAudio
- class PlayerDamagedEvent

  *Raised when the player takes damage.*

- class PlayerKilledEvent

  *Raised when the player is killed.*

- class PlayerLight

  *Responsible for updating the players light.*

- class PlayerSpawnedEvent

  *Raised when the player is spawned.*

- class Projectile

  *Attach to players light projectile. Handles seeking enemies, collision, and returning projectile to pool.*

- class SeekPlayer

  *AI for the "SeekPlayer" enemy. Handles animation, audio, and AI states.*

- class ShootPlayer

  *AI for the "ShootPlayer" enemy. Handles animation, audio, and AI states.*

- class SideCheck

  *Checks whether the player is colliding on the sides with a wall tile.*

- class TexturePack

  *Singleton. Provides a centralised location for block tetures. Provides a method to retrieve a texture based on a node type.*

- class ThrowLight

  *Handles the players ability to throw light.*

- class TopCheck

  *Checks whether the player is colliding on the top with a wall tile.*

- class Utilities

  *Singleton. Provides centralised access to methods used by different classes.*

- class WaypointManager

  *Holds list of waypoints and allows iteration over waypoints.*

### Enumerations

- enum AIState { **Idle**, **PlayerInSight** }

  *Enemy AI state.*
- enum NodeType {
  **Invalid** = -1, **Wall**, **WallTopLeft**, **WallTopMiddle**,
  **WallTopRight**, **WallMiddleLeft**, **WallMiddle**, **WallMiddleRight**,
  **WallBottomLeft**, **WallBottomMiddle**, **WallBottomRight**, **Background**,
  **Entry**, **Exit**, **Collectible**, **Max** }

  *The cell type.*

### Functions

- delegate void InitWaypointDel (List< Node > path)

  *Delegate used by waypoint manager.*

## 4.1.1 Enumeration Type Documentation

#### 4.1.1.1 enum CaveExploration.AIState [strong]

Enemy AI state.

#### 4.1.1.2 enum CaveExploration.NodeType [strong]

The cell type.

## 4.1.2 Function Documentation

#### 4.1.2.1 delegate void CaveExploration.InitWaypointDel ( List< Node > *path* )

Delegate used by waypoint manager.

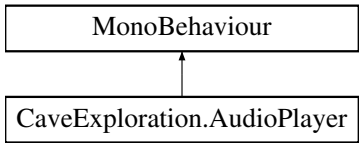
# Chapter 5

# Class Documentation

## 5.1 CaveExploration.AudioPlayer Class Reference

Handles playing audio clips, includes methods to handle volume, pitch, looped status, and playing songs forwards/backwards.

Inheritance diagram for CaveExploration.AudioPlayer:




### Public Member Functions

- bool IsPlaying ()

  *Determines whether this instance is playing an audio clip.*
- void PlaySound (AudioClip clip, float volume)

  *plays the sound clip at the specified volume.*
- void PlaySound (AudioClip clip, float volume, bool looped)

  *plays the sound clip at the specified volume.*
- void PlaySound (AudioClip clip, float volume, float pitch)

  *plays the sound clip at the specified volume and pitch.*

### 5.1.1 Detailed Description

Handles playing audio clips, includes methods to handle volume, pitch, looped status, and playing songs forwards/backwards.

### 5.1.2 Member Function Documentation

#### 5.1.2.1 bool CaveExploration.AudioPlayer.IsPlaying ( )

Determines whether this instance is playing an audio clip.

**Returns**

`true` if this instance is playing; otherwise, `false`.

#### 5.1.2.2 void CaveExploration.AudioPlayer.PlaySound ( AudioClip *clip*, float *volume* )

plays the sound clip at the specified volume.

**Parameters**

| | |
|---|---|
| *clip* | Clip. |
| *volume* | Volume. |

#### 5.1.2.3 void CaveExploration.AudioPlayer.PlaySound ( AudioClip *clip*, float *volume*, bool *looped* )

plays the sound clip at the specified volume.

**Parameters**

| | |
|---|---|
| *clip* | Clip. |
| *volume* | Volume. |
| *looped* | If set to `true` the clip is looped. |

#### 5.1.2.4 void CaveExploration.AudioPlayer.PlaySound ( AudioClip *clip*, float *volume*, float *pitch* )

plays the sound clip at the specified volume and pitch.

**Parameters**

| | |
|---|---|
| *clip* | Clip. |
| *volume* | Volume. |
| *pitch* | Pitch. |

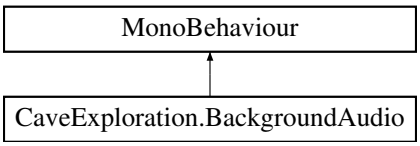
The documentation for this class was generated from the following file:

- AudioPlayer.cs

## 5.2 CaveExploration.BackgroundAudio Class Reference

Plays a background audio clip on start.

Inheritance diagram for CaveExploration.BackgroundAudio:




### Public Attributes

- AudioClip[ ] BackgroundAudioTracks

  *The background audio tracks. A random track (with no bias) is selected and played.*
- float Volume = 0.5f

  *The volume to play background audio.*

### 5.2.1 Detailed Description

Plays a background audio clip on start.

### 5.2.2 Member Data Documentation

#### 5.2.2.1 AudioClip [ ] CaveExploration.BackgroundAudio.BackgroundAudioTracks

The background audio tracks. A random track (with no bias) is selected and played.

#### 5.2.2.2 float CaveExploration.BackgroundAudio.Volume = 0.5f

The volume to play background audio.

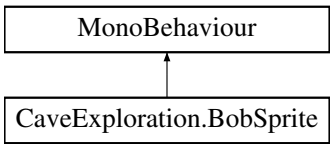
The documentation for this class was generated from the following file:

- BackgroundAudio.cs

## 5.3 CaveExploration.BobSprite Class Reference

"Bobs" sprite up and down.

Inheritance diagram for CaveExploration.BobSprite:




### Public Attributes

- float MaxUpDown = 0.1f

  *Max up/down movement.*
- float Speed = 1f

  *Up/down speed.*

### Properties

- bool Enabled `[set]`

  *Sets a value indicating whether this CaveExploration.BobSprite is enabled.*

### 5.3.1 Detailed Description

"Bobs" sprite up and down.

### 5.3.2 Member Data Documentation

#### 5.3.2.1 float CaveExploration.BobSprite.MaxUpDown = 0.1f

Max up/down movement.

#### 5.3.2.2 float CaveExploration.BobSprite.Speed = 1f

Up/down speed.

### 5.3.3 Property Documentation

#### 5.3.3.1 bool CaveExploration.BobSprite.Enabled [set]

Sets a value indicating whether this CaveExploration.BobSprite is enabled.

`true` if enabled; otherwise, `false`.

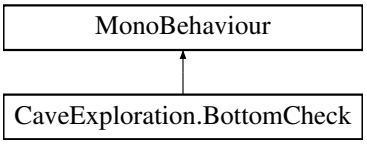
The documentation for this class was generated from the following file:

- BobSprite.cs

## 5.4 CaveExploration.BottomCheck Class Reference

Used to determine if the player is grounded and apply fall damage.

Inheritance diagram for CaveExploration.BottomCheck:




### Public Attributes

- LayerMask GroundMask

  *The ground mask.*
- float FallingHeightToDamage = 2f

  *The height at which the player can fall from and damage applied.*
- int FallDamage = 1

  *The damage applied when fall damage is applied.*
- ParticleSystem particle

  *The particle system used when the player becomes grounded.*

### Properties

- bool IsGrounded [get, set]

  *Gets or sets a value indicating whether the player is grounded.*

### 5.4.1 Detailed Description

Used to determine if the player is grounded and apply fall damage.

### 5.4.2 Member Data Documentation

#### 5.4.2.1 int CaveExploration.BottomCheck.FallDamage = 1

The damage applied when fall damage is applied.

#### 5.4.2.2 float CaveExploration.BottomCheck.FallingHeightToDamage = 2f

The height at which the player can fall from and damage applied.

#### 5.4.2.3 LayerMask CaveExploration.BottomCheck.GroundMask

The ground mask.

#### 5.4.2.4 ParticleSystem CaveExploration.BottomCheck.particle

The particle system used when the player becomes grounded.

### 5.4.3 Property Documentation

#### 5.4.3.1 bool CaveExploration.BottomCheck.IsGrounded [get],[set]

Gets or sets a value indicating whether the player is grounded.

`true` if this instance is grounded; otherwise, `false`.

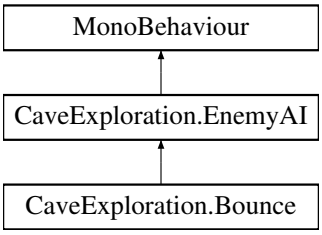
The documentation for this class was generated from the following file:

- BottomCheck.cs

## 5.5 CaveExploration.Bounce Class Reference

AI for the "bounce" enemy. Handles animation, audio and AI states.

Inheritance diagram for CaveExploration.Bounce:




### Public Member Functions

- void PlayNearbyAudio ()

  *Plays the audio clip when enemy activates.*
- override void Update ()

  *Update this instance using a simple state machine.*

### Public Attributes

- AudioClip PlayerNearbyAudio

  *The audio clip to play when enemy activates.*

### Protected Member Functions

- override void **DecideState** ()
- override void **Idle** ()
- override void **AttackPlayer** ()

### Additional Inherited Members

### 5.5.1 Detailed Description

AI for the "bounce" enemy. Handles animation, audio and AI states.

### 5.5.2 Member Function Documentation

#### 5.5.2.1 void CaveExploration.Bounce.PlayNearbyAudio ( )

Plays the audio clip when enemy activates.

#### 5.5.2.2 override void CaveExploration.Bounce.Update ( ) [virtual]

Update this instance using a simple state machine.

Reimplemented from CaveExploration.EnemyAI.

### 5.5.3 Member Data Documentation

#### 5.5.3.1 AudioClip CaveExploration.Bounce.PlayerNearbyAudio

The audio clip to play when enemy activates.

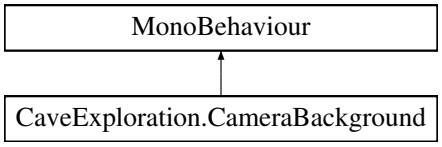
The documentation for this class was generated from the following file:

- Bounce.cs

## 5.6 CaveExploration.CameraBackground Class Reference

Handles changing of background image based on currently used texture pack.

Inheritance diagram for CaveExploration.CameraBackground:




### 5.6.1 Detailed Description

Handles changing of background image based on currently used texture pack.

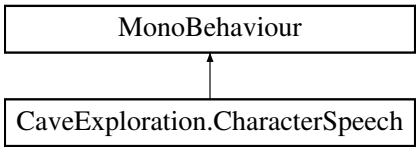
The documentation for this class was generated from the following file:

- CameraBackground.cs

## 5.7 CaveExploration.CharacterSpeech Class Reference

Responsible for showing character speech (text) on screen.

Inheritance diagram for CaveExploration.CharacterSpeech:




### Public Member Functions

- void Speak (string text)

  *Shows the specified text at the location. The time the text is shown is based on the text length.*

### Properties

- bool Speaking `[get, set]`

  *Gets or sets a value indicating whether this CaveExploration.CharacterSpeech is currently speaking.*

### 5.7.1 Detailed Description

Responsible for showing character speech (text) on screen.

### 5.7.2 Member Function Documentation

#### 5.7.2.1 void CaveExploration.CharacterSpeech.Speak ( string *text* )

Shows the specified text at the location. The time the text is shown is based on the text length.

**Parameters**

| | |
|---|---|
| *text* | Text. |

### 5.7.3 Property Documentation

#### 5.7.3.1 bool CaveExploration.CharacterSpeech.Speaking `[get],[set]`

Gets or sets a value indicating whether this CaveExploration.CharacterSpeech is currently speaking.

`true` if speaking; otherwise, `false`.

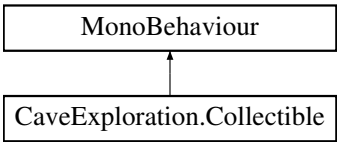
The documentation for this class was generated from the following file:

- CharacterSpeech.cs

## 5.8 CaveExploration.Collectible Class Reference

Attach to collectible in game. Handles seeking player, and giving player a light boost on collection.

Inheritance diagram for CaveExploration.Collectible:




### Public Attributes

- float LightIntensityAdded = 1f

  *The light intensity added to player on collection.*
- float LightRadiusAdded = 0.2f

  *The light radius added to player on collection.*
- float SeekDistance = 1

  *If collectible within this distance to player, the collectible will move towards players location.*
- float SeekSpeed = 1f

  *The speed at which collectible moves towards player.*

### 5.8.1 Detailed Description

Attach to collectible in game. Handles seeking player, and giving player a light boost on collection.

### 5.8.2 Member Data Documentation

#### 5.8.2.1 float CaveExploration.Collectible.LightIntensityAdded = 1f

The light intensity added to player on collection.

#### 5.8.2.2 float CaveExploration.Collectible.LightRadiusAdded = 0.2f

The light radius added to player on collection.

#### 5.8.2.3 float CaveExploration.Collectible.SeekDistance = 1

If collectible within this distance to player, the collectible will move towards players location.

#### 5.8.2.4 float CaveExploration.Collectible.SeekSpeed = 1f

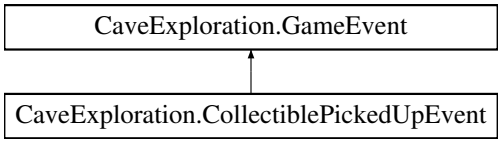
The speed at which collectible moves towards player.

The documentation for this class was generated from the following file:

- Collectible.cs

## 5.9 CaveExploration.CollectiblePickedUpEvent Class Reference

Inheritance diagram for CaveExploration.CollectiblePickedUpEvent:




### Public Member Functions

- **CollectiblePickedUpEvent** (float lightAmount, float radiusAmount)

### Properties

- float **LightAmount** `[get]`
- float **RadiusAmount** `[get]`

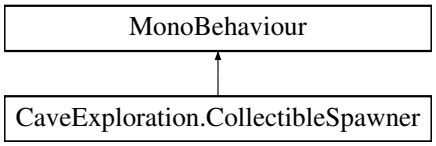
The documentation for this class was generated from the following file:

- CollectiblePickedUpEvent.cs

## 5.10 CaveExploration.CollectibleSpawner Class Reference

Spawns collectibles on round start.

Inheritance diagram for CaveExploration.CollectibleSpawner:




### Public Member Functions

- void OnLevelGenerated (GameEvent e)

  *Handles the level generated event. Places collectibles.*

### Public Attributes

- GameObject Collectible

  *The collectible prefab.*
- int CollectibleWallLimit = 4

  *The number of surrounding walls required to spawn collectible.*
- float SpawnChance = 0.1f

  *The chance a collectible will spawn when a suitable location is found.*
- int MaxCollectibles = 40

  *The maximum number of collectibles to be spawned in any one level.*

### 5.10.1 Detailed Description

Spawns collectibles on round start.

### 5.10.2 Member Function Documentation

#### 5.10.2.1 void CaveExploration.CollectibleSpawner.OnLevelGenerated ( GameEvent *e* )

Handles the level generated event. Places collectibles.

**Parameters**

| | |
|---|---|
| *e* | E. |

### 5.10.3 Member Data Documentation

#### 5.10.3.1 GameObject CaveExploration.CollectibleSpawner.Collectible

The collectible prefab.

#### 5.10.3.2 int CaveExploration.CollectibleSpawner.CollectibleWallLimit = 4

The number of surrounding walls required to spawn collectible.

#### 5.10.3.3 int CaveExploration.CollectibleSpawner.MaxCollectibles = 40

The maximum number of collectibles to be spawned in any one level.

#### 5.10.3.4 float CaveExploration.CollectibleSpawner.SpawnChance = 0.1f

The chance a collectible will spawn when a suitable location is found.

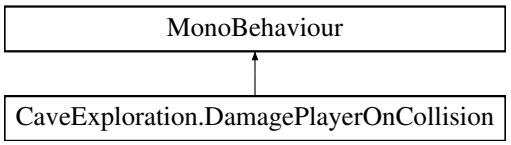
The documentation for this class was generated from the following file:

- CollectibleSpawner.cs

## 5.11 CaveExploration.DamagePlayerOnCollision Class Reference

Attach to any object to damage the player when a collision with this object occurs.

Inheritance diagram for CaveExploration.DamagePlayerOnCollision:




### Public Attributes

- int DamageAmount = 1

  *The damage amount.*
- float DamageForce = 50f

  *The damage knockback force.*

### 5.11.1 Detailed Description

Attach to any object to damage the player when a collision with this object occurs.

### 5.11.2 Member Data Documentation

#### 5.11.2.1 int CaveExploration.DamagePlayerOnCollision.DamageAmount = 1

The damage amount.

#### 5.11.2.2 float CaveExploration.DamagePlayerOnCollision.DamageForce = 50f

The damage knockback force.

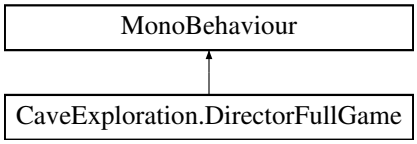
The documentation for this class was generated from the following file:

- DamagePlayerOnCollision.cs

## 5.12 CaveExploration.DirectorFullGame Class Reference

Manages the game scene. Starts level, player, and collectible placement/creation. Handles player dead and level complete events.

Inheritance diagram for CaveExploration.DirectorFullGame:




### Public Attributes

- int Seed = 1

  *The seed used to generate the level. The same seed and generation settings will always generate the same level.*
- GameObject PlayerPrefab

  *The player prefab.*
- GameObject EndCollectiblePrefab

  *The end collectible prefab.*

### 5.12.1 Detailed Description

Manages the game scene. Starts level, player, and collectible placement/creation. Handles player dead and level complete events.

### 5.12.2 Member Data Documentation

#### 5.12.2.1 GameObject CaveExploration.DirectorFullGame.EndCollectiblePrefab

The end collectible prefab.

#### 5.12.2.2 GameObject CaveExploration.DirectorFullGame.PlayerPrefab

The player prefab.

#### 5.12.2.3 int CaveExploration.DirectorFullGame.Seed = 1

The seed used to generate the level. The same seed and generation settings will always generate the same level.

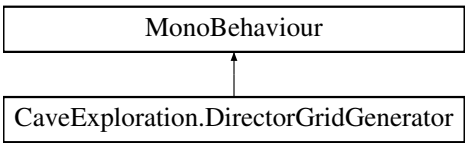
The documentation for this class was generated from the following file:

- DirectorFullGame.cs

## 5.13 CaveExploration.DirectorGridGenerator Class Reference

Managers the example grid generator scene.

Inheritance diagram for CaveExploration.DirectorGridGenerator:




### Public Attributes

- int Seed = 1

  *The seed used to generate the level. The same seed and generation settings will always generate the same level.*

### 5.13.1 Detailed Description

Managers the example grid generator scene.

### 5.13.2 Member Data Documentation

#### 5.13.2.1 int CaveExploration.DirectorGridGenerator.Seed = 1

The seed used to generate the level. The same seed and generation settings will always generate the same level.

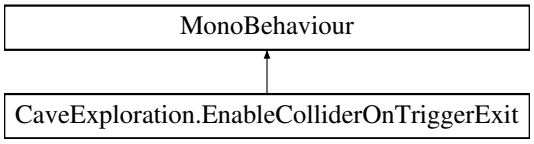
The documentation for this class was generated from the following file:

- DirectorGridGenerator.cs

## 5.14 CaveExploration.EnableColliderOnTriggerExit Class Reference

Disables a colliders trigger (i.e. enables collisions with a collider) when the collider exits the specified trigger. Useful for shooting a projectile to ensure it does not collide with the enemy/player that shot the projectile.

Inheritance diagram for CaveExploration.EnableColliderOnTriggerExit:




### Public Attributes

- bool MultipleColliders = true

  *Enable this is the object contains multiple colliders.*
- string Tag = "Player"

  *The tag of the gameobject that will be shooting projectile.*

### 5.14.1 Detailed Description

Disables a colliders trigger (i.e. enables collisions with a collider) when the collider exits the specified trigger. Useful for shooting a projectile to ensure it does not collide with the enemy/player that shot the projectile.

### 5.14.2 Member Data Documentation

#### 5.14.2.1 bool CaveExploration.EnableColliderOnTriggerExit.MultipleColliders = true

Enable this is the object contains multiple colliders.

#### 5.14.2.2 string CaveExploration.EnableColliderOnTriggerExit.Tag = "Player"

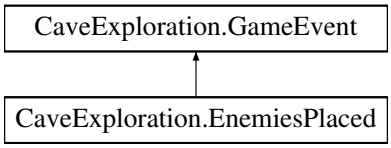
The tag of the gameobject that will be shooting projectile.

The documentation for this class was generated from the following file:

- EnableColliderOnTriggerExit.cs

## 5.15 CaveExploration.EnemiesPlaced Class Reference

Inheritance diagram for CaveExploration.EnemiesPlaced:




### Public Member Functions

- **EnemiesPlaced** (int enemyCount)

### Properties

- int **EnemyCount** `[get]`

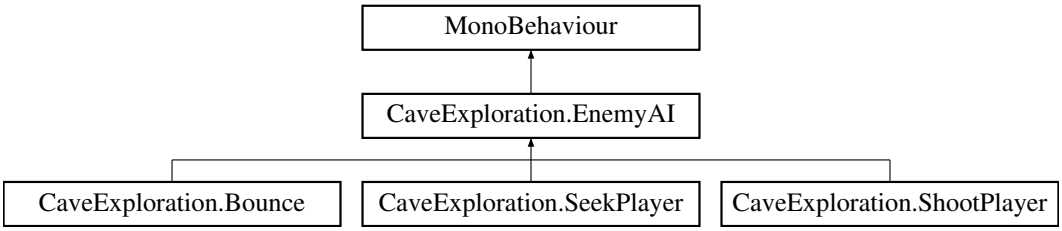
The documentation for this class was generated from the following file:

- EnemiesPlaced.cs

## 5.16 CaveExploration.EnemyAI Class Reference

Abstract base class for all enemy AI.

Inheritance diagram for CaveExploration.EnemyAI:




### Public Member Functions

- virtual void Update ()

  *Update this instance using a simple state machine.*

### Protected Member Functions

- abstract void **Idle** ()
- abstract void **AttackPlayer** ()
- abstract void **DecideState** ()
- bool **PlayerNearby** ()

### Protected Attributes

- AIState **state**
- Transform **player**

### 5.16.1 Detailed Description

Abstract base class for all enemy AI.

### 5.16.2 Member Function Documentation

#### 5.16.2.1 virtual void CaveExploration.EnemyAI.Update ( ) [virtual]

Update this instance using a simple state machine.

Reimplemented in CaveExploration.SeekPlayer, CaveExploration.ShootPlayer, and CaveExploration.Bounce.

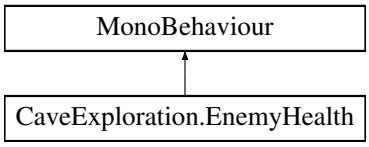
The documentation for this class was generated from the following file:

- EnemyAI.cs

## 5.17 CaveExploration.EnemyHealth Class Reference

Handles enemy health and death (including audio and animation).

Inheritance diagram for CaveExploration.EnemyHealth:




### Public Member Functions

- void Kill (Vector3 projectilePosition, float force)

  *Kill the specified enemy and applys knockback force.*

### Public Attributes

- float DeathDuration = 0.5f

  *The duration of the death animation.*
- bool CountTowardsEnemyCount = true

  *Counts towards number of enemies killed.*
- AudioClip SoundOnDeath

  *The sound played on death.*

### 5.17.1 Detailed Description

Handles enemy health and death (including audio and animation).

### 5.17.2 Member Function Documentation

#### 5.17.2.1 void CaveExploration.EnemyHealth.Kill ( Vector3 *projectilePosition,* float *force* )

Kill the specified enemy and applys knockback force.

**Parameters**

| | |
|---|---|
| *projectilePosition* | Projectile position. |
| *force* | Force. |

### 5.17.3 Member Data Documentation

#### 5.17.3.1 bool CaveExploration.EnemyHealth.CountTowardsEnemyCount = true

Counts towards number of enemies killed.

#### 5.17.3.2 float CaveExploration.EnemyHealth.DeathDuration = 0.5f

The duration of the death animation.

#### 5.17.3.3 AudioClip CaveExploration.EnemyHealth.SoundOnDeath

The sound played on death.

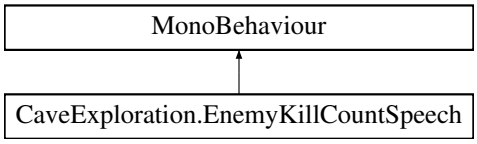
The documentation for this class was generated from the following file:

- EnemyHealth.cs

## 5.18 CaveExploration.EnemyKillCountSpeech Class Reference

Shows character speech on enemy killed.

Inheritance diagram for CaveExploration.EnemyKillCountSpeech:




### Public Attributes

- string[ ] EnemyKilledSpeech = {"Got em!", "", "1 Down", "How many are left?", "", "Good Shot"}
  *Speech options on enemy killed.*

### 5.18.1 Detailed Description

Shows character speech on enemy killed.

### 5.18.2 Member Data Documentation

#### 5.18.2.1 string [ ] CaveExploration.EnemyKillCountSpeech.EnemyKilledSpeech = {"Got em!", "", "1 Down", "How many are left?", "", "Good Shot"}

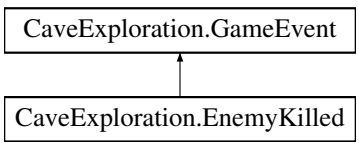
Speech options on enemy killed.

The documentation for this class was generated from the following file:

- EnemyKillCountSpeech.cs

## 5.19 CaveExploration.EnemyKilled Class Reference

Inheritance diagram for CaveExploration.EnemyKilled:



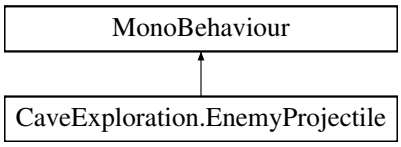

The documentation for this class was generated from the following file:

- EnemyKilled.cs

## 5.20 CaveExploration.EnemyProjectile Class Reference

Responsible to updating enemy projectiles. And applying damage on collision.

Inheritance diagram for CaveExploration.EnemyProjectile:




### Public Member Functions

- void ReturnToPool ()

  *Returns to pool.*

### Public Attributes

- int DamageAmount = 1

  *The amount of damage to apply to the player.*
- float DamageForce = 50f

  *The knockback force of the projectile.*
- float MaxTimeAlive = 2f

  *The maximum time the projectile can be in the scene. It is added to the pool once this time has been reached.*

### 5.20.1 Detailed Description

Responsible to updating enemy projectiles. And applying damage on collision.

### 5.20.2 Member Function Documentation

#### 5.20.2.1 void CaveExploration.EnemyProjectile.ReturnToPool ( )

Returns to pool.

### 5.20.3 Member Data Documentation

#### 5.20.3.1 int CaveExploration.EnemyProjectile.DamageAmount = 1

The amount of damage to apply to the player.

#### 5.20.3.2 float CaveExploration.EnemyProjectile.DamageForce = 50f

The knockback force of the projectile.

#### 5.20.3.3 float CaveExploration.EnemyProjectile.MaxTimeAlive = 2f

The maximum time the projectile can be in the scene. It is added to the pool once this time has been reached.

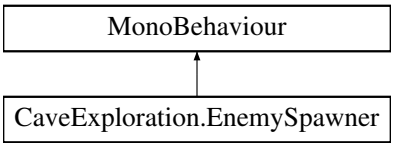
The documentation for this class was generated from the following file:

- EnemyProjectile.cs

## 5.21 CaveExploration.EnemySpawner Class Reference

Responsible for spawning enemies at level start.

Inheritance diagram for CaveExploration.EnemySpawner:




### Public Types

- enum **EnemyPlacementType** { **RandomBackgroundTile**, **RandomFloorTile**, **RandomTileWithRectSpaceAround**, **RandomTileWithCircleSpaceAround** }

### Public Member Functions

- void OnLevelGenerated (GameEvent e)

  *Handles the level generated event. Places the enemies based on placement type.*

### Public Attributes

- bool RandomRotation = false

  *Apply random rotation to enemy when spawned.*
- GameObject Enemy

  *The enemy prefab to spawn.*
- int MaxEnemies = 10

  *The maximum number of enemies of this type to spawn.*
- EnemyPlacementType PlacementType = EnemyPlacementType.RandomBackgroundTile

  *The enemy placement type. Please see Read Me for more information on placement types.*

### 5.21.1 Detailed Description

Responsible for spawning enemies at level start.

### 5.21.2 Member Function Documentation

#### 5.21.2.1 void CaveExploration.EnemySpawner.OnLevelGenerated ( GameEvent *e* )

Handles the level generated event. Places the enemies based on placement type.

**Parameters**

| | |
|---|---|
| *e* | E. |

### 5.21.3 Member Data Documentation

#### 5.21.3.1 GameObject CaveExploration.EnemySpawner.Enemy

The enemy prefab to spawn.

#### 5.21.3.2 int CaveExploration.EnemySpawner.MaxEnemies = 10

The maximum number of enemies of this type to spawn.

#### 5.21.3.3 EnemyPlacementType CaveExploration.EnemySpawner.PlacementType = EnemyPlacementType.RandomBackgroundTile

The enemy placement type. Please see Read Me for more information on placement types.

#### 5.21.3.4 bool CaveExploration.EnemySpawner.RandomRotation = false

Apply random rotation to enemy when spawned.

The documentation for this class was generated from the following file:

- EnemySpawner.cs

## 5.22 CaveExploration.Events Class Reference

### Public Member Functions

- delegate void **EventDelegate**< **T** > (T e)
- void **AddListener**< **T** > (EventDelegate< T > del)
- void **RemoveListener**< **T** > (EventDelegate< T > del)
- void **Raise** (GameEvent e)

### Properties

- static Events **instance** `[get]`

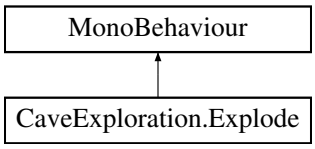
The documentation for this class was generated from the following file:

- Events.cs

## 5.23 CaveExploration.Explode Class Reference

Spawns an explosion on mouse click at the objects position.

Inheritance diagram for CaveExploration.Explode:




### Public Member Functions

- void **Execute** ()

### Public Attributes

- GameObject **Explosion**

#### 5.23.1 Detailed Description

Spawns an explosion on mouse click at the objects position.

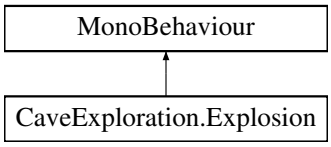
The documentation for this class was generated from the following file:

- Explode.cs

## 5.24 CaveExploration.Explosion Class Reference

Attach to an explosion. Kills an enemy in explosion radius.

Inheritance diagram for CaveExploration.Explosion:




### Public Member Functions

- void PlayExplosionSound ()

  *Plays the explosion sound.*
- void ReturnToPool ()

  *Returns the explosion to the object pool. Called by animation.*

### Public Attributes

- float ExplosionForce = 25f

  *The force used to knockback objects in radius.*
- AudioClip ExplosionClip

  *The audio clip to play on explosion.*

#### 5.24.1 Detailed Description

Attach to an explosion. Kills an enemy in explosion radius.

### 5.24.2 Member Function Documentation

#### 5.24.2.1 void CaveExploration.Explosion.PlayExplosionSound ( )

Plays the explosion sound.

#### 5.24.2.2 void CaveExploration.Explosion.ReturnToPool ( )

Returns the explosion to the object pool. Called by animation.

### 5.24.3 Member Data Documentation

#### 5.24.3.1 AudioClip CaveExploration.Explosion.ExplosionClip

The audio clip to play on explosion.

#### 5.24.3.2 float CaveExploration.Explosion.ExplosionForce = 25f

The force used to knockback objects in radius.

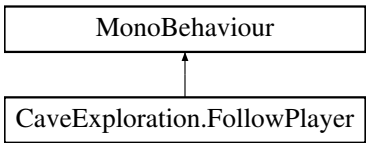
The documentation for this class was generated from the following file:

- Explosion.cs

## 5.25 CaveExploration.FollowPlayer Class Reference

Attach to camera. Used to follow player once spawned.

Inheritance diagram for CaveExploration.FollowPlayer:




### Public Attributes

- Vector3 Displacement

  *The displacement from the player.*

### 5.25.1 Detailed Description

Attach to camera. Used to follow player once spawned.

### 5.25.2 Member Data Documentation

#### 5.25.2.1 Vector3 CaveExploration.FollowPlayer.Displacement

The displacement from the player.

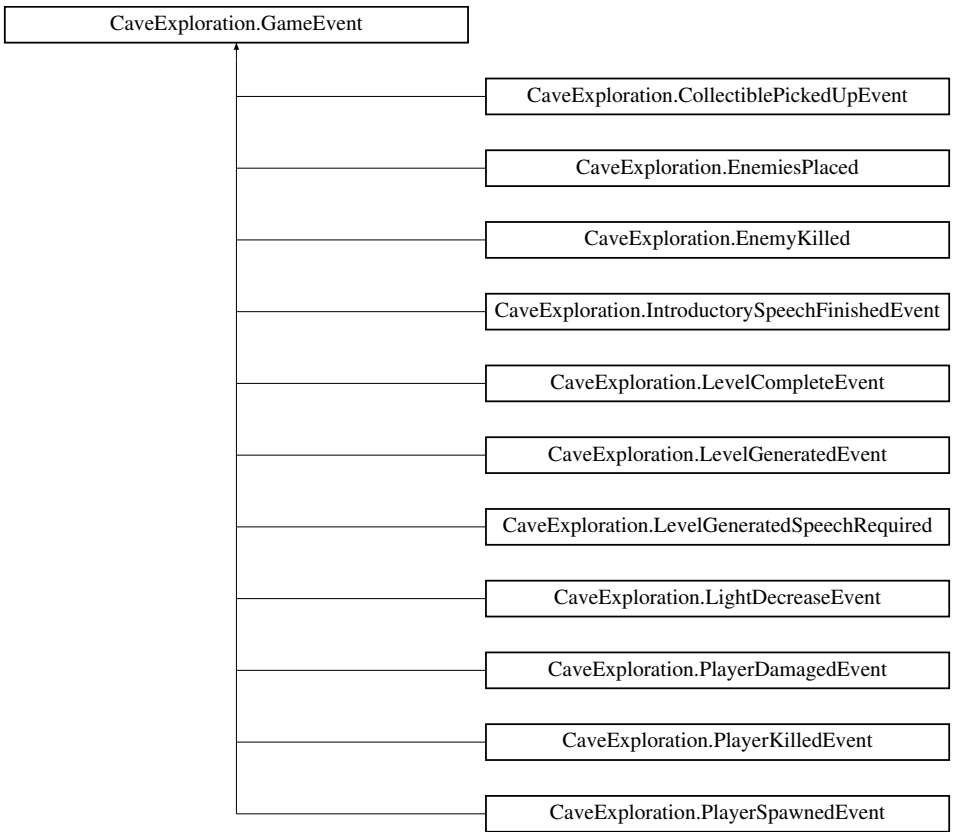
The documentation for this class was generated from the following file:

- FollowPlayer.cs

## 5.26 CaveExploration.GameEvent Class Reference

All game events inherit this abstract base class.

Inheritance diagram for CaveExploration.GameEvent:




### 5.26.1 Detailed Description

All game events inherit this abstract base class.

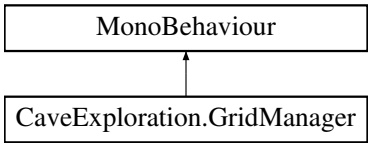
The documentation for this class was generated from the following file:

- GameEvent.cs

## 5.27 CaveExploration.GridManager Class Reference

Singleton. Handles level generation.

Inheritance diagram for CaveExploration.GridManager:



### Public Member Functions

- void GenerateWithSeed (int seed, bool firstLevel)

  *Generates the environment with specified seed. If you pass same value for seed it will generate same environment.*
- Node GetFloorNodeMaxDistanceFromStartNode (float maxDistance, Node startNode)

  *Gets the floor node at a distance less than max distance from start node.*
- Node GetFloorNodeMinDistanceFromStartNode (float minDistance, Node startNode)

  *Gets the floor node at a distance greater than min distance from start node.*
- Node GetRandomBackgroundNode ()

  *Gets a random background node.*
- List< Node > GetBackgroundNodes ()

  *Returns a list of all background nodes.*
- Node GetRandomFloorNode ()

  *Gets a random floor node.*
- int CountWallMooreNeighbours (Vector2 coord)

  *Returns a count of the number of neighbours of the cell at the specified coord that are walls.*

### Public Attributes

- Rect GridSize

  *The size of the grid.*
- int NumberOfTransistionSteps = 0

  *The number of transistion steps to perform when generating the level. The higher this number the more the the specified rules are applied.*
- float ChanceToBecomeWall = 0.40f

  *The chance for a floor tile to become a wall tile when first generating the level.*
- int FloorsToWallConversion = 4

  *If a tile has a number of neighbours higher than this then it too will be changed into a wall tile.*
- int WallsToFloorConversion = 3

  *If a wall tile has less than this number of neighbours that are wall tiles then it is converted into a background tile.*
- GameObject Cell

  *The tile prefab.*

### Properties

- NodeList Grid `[get, set]`

  *Gets or sets the grid.*
- Node StartNode `[get, set]`

  *Gets or sets the start node (where the player is spawned).*
- Node EndNode `[get, set]`

  *Gets or sets the end node (where the end object is spawned).*
- TexturePack TexturePack `[get]`

  *Gets the current texture pack.*
- static GridManager instance `[get]`

  *Gets the instance.*

#### 5.27.1 Detailed Description

Singleton. Handles level generation.

### 5.27.2 Member Function Documentation

#### 5.27.2.1 int CaveExploration.GridManager.CountWallMooreNeighbours ( Vector2 *coord* )

Returns a count of the number of neighbours of the cell at the specified coord that are walls.

**Returns**

The wall moore neighbours.

**Parameters**

| | |
|---|---|
| *coord* | Coordinate. |

#### 5.27.2.2 void CaveExploration.GridManager.GenerateWithSeed ( int *seed,* bool *firstLevel* )

Generates the environment with specified seed. If you pass same value for seed it will generate same environment.

**Parameters**

| | |
|---|---|
| *seed* | Seed. |
| *firstLevel* | If set to `true` then player speech is started. |

#### 5.27.2.3 List<Node> CaveExploration.GridManager.GetBackgroundNodes ( )

Returns a list of all background nodes.

**Returns**

The background nodes.

#### 5.27.2.4 Node CaveExploration.GridManager.GetFloorNodeMaxDistanceFromStartNode ( float *maxDistance,* Node *startNode* )

Gets the floor node at a distance less than max distance from start node.

**Returns**

The floor node.

**Parameters**

| | |
|---|---|
| *maxDistance* | Maximum distance between start node and returned node. |
| *startNode* | Start node. |

#### 5.27.2.5 Node CaveExploration.GridManager.GetFloorNodeMinDistanceFromStartNode ( float *minDistance,* Node *startNode* )

Gets the floor node at a distance greater than min distance from start node.

**Returns**

The floor node.

**Parameters**

| | |
|---|---|
| *minDistance* | Minimum distance between start node and returned node. |
| *startNode* | Start node. |

#### 5.27.2.6 Node CaveExploration.GridManager.GetRandomBackgroundNode ( )

Gets a random background node.

**Returns**

The random background node.

#### 5.27.2.7 Node CaveExploration.GridManager.GetRandomFloorNode ( )

Gets a random floor node.

**Returns**

The random floor node.

### 5.27.3 Member Data Documentation

#### 5.27.3.1 GameObject CaveExploration.GridManager.Cell

The tile prefab.

#### 5.27.3.2 float CaveExploration.GridManager.ChanceToBecomeWall = 0.40f

The chance for a floor tile to become a wall tile when first generating the level.

#### 5.27.3.3 int CaveExploration.GridManager.FloorsToWallConversion = 4

If a tile has a number of neighbours higher than this then it too will be changed into a wall tile.

#### 5.27.3.4 Rect CaveExploration.GridManager.GridSize

The size of the grid.

#### 5.27.3.5 int CaveExploration.GridManager.NumberOfTransistionSteps = 0

The number of transistion steps to perform when generating the level. The higher this number the more the the specified rules are applied.

#### 5.27.3.6 int CaveExploration.GridManager.WallsToFloorConversion = 3

If a wall tile has less than this number of neighbours that are wall tiles then it is converted into a background tile.

### 5.27.4 Property Documentation

#### 5.27.4.1 Node CaveExploration.GridManager.EndNode [get],[set]

Gets or sets the end node (where the end object is spawned).

The end node.

#### 5.27.4.2 NodeList CaveExploration.GridManager.Grid [get],[set]

Gets or sets the grid.

The grid.

#### 5.27.4.3 GridManager CaveExploration.GridManager.instance [static],[get]

Gets the instance.

The instance.

#### 5.27.4.4 Node CaveExploration.GridManager.StartNode [get],[set]

Gets or sets the start node (where the player is spawned).

The start node.

#### 5.27.4.5 TexturePack CaveExploration.GridManager.TexturePack [get]

Gets the current texture pack.

The texture pack.

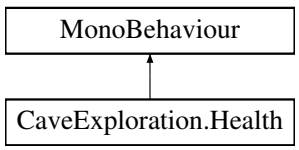
The documentation for this class was generated from the following file:

- GridManager.cs

## 5.28 CaveExploration.Health Class Reference

The players health.

Inheritance diagram for CaveExploration.Health:




### Public Member Functions

- void OnDamage (PlayerDamagedEvent e)

  *Handles the PlayerDamagedEvent. Applies damage, shows speech, and kills player (if health less than zero).*

### Public Attributes

- int MaxHealth = 5

  *The players maximum health.*
- string[ ] HurtSpeech

  *Speech options to show when the player is hurt.*
- string[ ] LowHealthSpeech

  *Speech options to show when the player has low health.*
- int LowHealthThreshold = 2

  *The low health threshold. Speech is shown when the players health is below the threshold.*
- Color HurtColour = Color.red

  *The colour to change the players sprite to when damaged.*
- float DamageAnimationTime = 0.5f

  *The damage animation time.*

## 5.28.1 Detailed Description

The players health.

## 5.28.2 Member Function Documentation

### 5.28.2.1 void CaveExploration.Health.OnDamage ( PlayerDamagedEvent *e* )

Handles the PlayerDamagedEvent. Applies damage, shows speech, and kills player (if health less than zero).

**Parameters**

| | |
|---|---|
| *e* | E. |

## 5.28.3 Member Data Documentation

### 5.28.3.1 float CaveExploration.Health.DamageAnimationTime = 0.5f

The damage animation time.

### 5.28.3.2 Color CaveExploration.Health.HurtColour = Color.red

The colour to change the players sprite to when damaged.

### 5.28.3.3 string [ ] CaveExploration.Health.HurtSpeech

Speech options to show when the player is hurt.

### 5.28.3.4 string [ ] CaveExploration.Health.LowHealthSpeech

Speech options to show when the player has low health.

### 5.28.3.5 int CaveExploration.Health.LowHealthThreshold = 2

The low health threshold. Speech is shown when the players health is below the threshold.

#### 5.28.3.6 int CaveExploration.Health.MaxHealth = 5

The players maximum health.

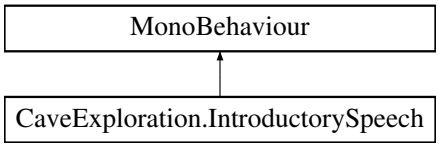
The documentation for this class was generated from the following file:

- Health.cs

## 5.29 CaveExploration.IntroductorySpeech Class Reference

Introductory speech. For example, can be used to introduce a level, the game, controls etc.

Inheritance diagram for CaveExploration.IntroductorySpeech:




### Public Attributes

- string[ ] Speech

  *Speech options. These options are shown one at a time.*

### Properties

- bool InProgress `[get]`

  *Gets a value indicating whether this CaveExploration.IntroductorySpeech is in progress.*
- static IntroductorySpeech instance `[get]`

  *Gets the instance.*

### 5.29.1 Detailed Description

Introductory speech. For example, can be used to introduce a level, the game, controls etc.

### 5.29.2 Member Data Documentation

#### 5.29.2.1 string [ ] CaveExploration.IntroductorySpeech.Speech

Speech options. These options are shown one at a time.

### 5.29.3 Property Documentation

#### 5.29.3.1 bool CaveExploration.IntroductorySpeech.InProgress `[get]`

Gets a value indicating whether this CaveExploration.IntroductorySpeech is in progress.

`true` if in progress; otherwise, `false`.

#### 5.29.3.2 IntroductorySpeech CaveExploration.IntroductorySpeech.instance [static],[get]

Gets the instance.

The instance.

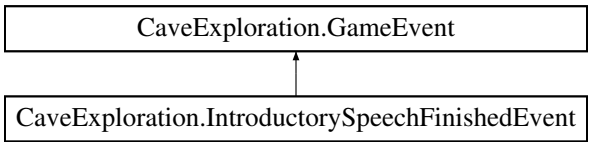
The documentation for this class was generated from the following file:

- IntroductorySpeech.cs

## 5.30 CaveExploration.IntroductorySpeechFinishedEvent Class Reference

Raised when the players intro speech has finished.

Inheritance diagram for CaveExploration.IntroductorySpeechFinishedEvent:




### 5.30.1 Detailed Description

Raised when the players intro speech has finished.

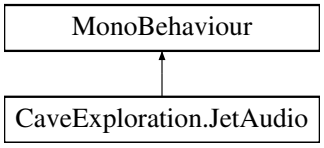
The documentation for this class was generated from the following file:

- IntroductorySpeechFinishedEvent.cs

## 5.31 CaveExploration.JetAudio Class Reference

Handles playing audio on jet pack use.

Inheritance diagram for CaveExploration.JetAudio:




### Public Attributes

- AudioClip JetAudioClip

  *The audio clip to play when the jetpack is in use.*
- float Volume = 0.2f

  *The volume to play the jet pack audio clip.*

### 5.31.1 Detailed Description

Handles playing audio on jet pack use.

### 5.31.2 Member Data Documentation

#### 5.31.2.1 AudioClip CaveExploration.JetAudio.JetAudioClip

The audio clip to play when the jetpack is in use.

#### 5.31.2.2 float CaveExploration.JetAudio.Volume = 0.2f

The volume to play the jet pack audio clip.

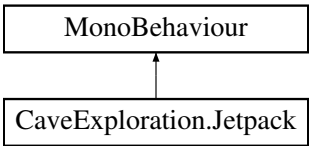
The documentation for this class was generated from the following file:

- JetAudio.cs

## 5.32 CaveExploration.Jetpack Class Reference

Responsible for controlling the players jetpack.

Inheritance diagram for CaveExploration.Jetpack:




### Public Member Functions

- bool FuelRecharging ()

  *Gets or sets a value indicating whether this CaveExploration.Jetpack is currently recharging the fuel.*

### Public Attributes

- float JetForce = 30f

  *The force applied when jet pack is active.*
- float MaxForce = 1.5f

  *The maximum force applied to the player.*
- float JetFuel = 600f

  *The maximum jet fuel.*
- float JetFuelWaste = 2f

  *The jet fuel waste per second.*

### Properties

- bool UsingJet `[get, set]`

  *Gets or sets a value indicating whether this CaveExploration.Jetpack is using the jetpack.*
- bool CanJet `[get, set]`

  *Gets or sets a value indicating whether this instance can use the jetpack.*

### 5.32.1 Detailed Description

Responsible for controlling the players jetpack.

### 5.32.2 Member Function Documentation

#### 5.32.2.1 bool CaveExploration.Jetpack.FuelRecharging ( )

Gets or sets a value indicating whether this CaveExploration.Jetpack is currently recharging the fuel.

**Returns**

`true`, if recharging was fueled, `false` otherwise.

### 5.32.3 Member Data Documentation

#### 5.32.3.1 float CaveExploration.Jetpack.JetForce = 30f

The force applied when jet pack is active.

#### 5.32.3.2 float CaveExploration.Jetpack.JetFuel = 600f

The maximum jet fuel.

#### 5.32.3.3 float CaveExploration.Jetpack.JetFuelWaste = 2f

The jet fuel waste per second.

#### 5.32.3.4 float CaveExploration.Jetpack.MaxForce = 1.5f

The maximum force applied to the player.

### 5.32.4 Property Documentation

#### 5.32.4.1 bool CaveExploration.Jetpack.CanJet `[get]`, `[set]`

Gets or sets a value indicating whether this instance can use the jetpack.

`true` if this instance can jet; otherwise, `false`.

#### 5.32.4.2 bool CaveExploration.Jetpack.UsingJet `[get]`, `[set]`

Gets or sets a value indicating whether this CaveExploration.Jetpack is using the jetpack.

`true` if using jetpack; otherwise, `false`.

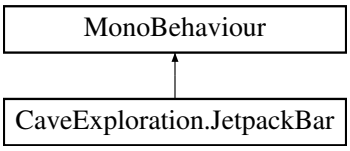
The documentation for this class was generated from the following file:

- Jetpack.cs

## 5.33 CaveExploration.JetpackBar Class Reference

Visual representation of the jetpack fuel.

Inheritance diagram for CaveExploration.JetpackBar:




## Public Member Functions

- void Disable ()

  *Disable the jetpack fuel renderer.*
- void Enable ()

  *Enables the jetpack fuel renderer.*
- void UpdateColour (float currentFuel)

  *Updates the bars colour based on the current fuel amount.*
- void UpdateLocalScaleY (float scaleY)

  *Updates the bars y scale based on current fuel amount.*

## Public Attributes

- Color ColourWhenFullFuel

  *The colour when jetpack fuel is full.*
- Color ColourWhenEmptyFuel

  *The colour when jetpack fuel is empty.*

### 5.33.1 Detailed Description

Visual representation of the jetpack fuel.

### 5.33.2 Member Function Documentation

#### 5.33.2.1 void CaveExploration.JetpackBar.Disable ( )

Disable the jetpack fuel renderer.

#### 5.33.2.2 void CaveExploration.JetpackBar.Enable ( )

Enables the jetpack fuel renderer.

#### 5.33.2.3 void CaveExploration.JetpackBar.UpdateColour ( float *currentFuel* )

Updates the bars colour based on the current fuel amount.

**Parameters**

| | |
|---|---|
| *currentFuel* | Current fuel. |

#### 5.33.2.4 void CaveExploration.JetpackBar.UpdateLocalScaleY ( float *scaleY* )

Updates the bars y scale based on current fuel amount.

**Parameters**

| | |
|---|---|
| *scaleY* | Scale y. |

### 5.33.3 Member Data Documentation

#### 5.33.3.1 Color CaveExploration.JetpackBar.ColourWhenEmptyFuel

The colour when jetpack fuel is empty.

#### 5.33.3.2 Color CaveExploration.JetpackBar.ColourWhenFullFuel

The colour when jetpack fuel is full.

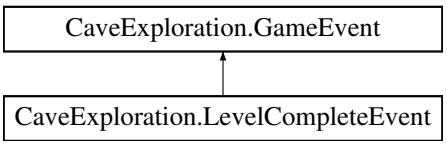
The documentation for this class was generated from the following file:

- JetpackBar.cs

## 5.34 CaveExploration.LevelCompleteEvent Class Reference

Raised when the player completes a level.

Inheritance diagram for CaveExploration.LevelCompleteEvent:




### Public Member Functions

- LevelCompleteEvent (int nextSeed)

  *Initializes a new instance of the CaveExploration.LevelCompleteEvent class.*

### Properties

- int NextSeed `[get]`

  *Gets the seed to be used when generating the next level.*

### 5.34.1 Detailed Description

Raised when the player completes a level.

### 5.34.2 Constructor & Destructor Documentation

#### 5.34.2.1 CaveExploration.LevelCompleteEvent.LevelCompleteEvent ( int *nextSeed* )

Initializes a new instance of the CaveExploration.LevelCompleteEvent class.

**Parameters**

| | |
|---|---|
| *nextSeed* | Next seed. |

### 5.34.3 Property Documentation

#### 5.34.3.1 int CaveExploration.LevelCompleteEvent.NextSeed [get]

Gets the seed to be used when generating the next level.

The next seed.

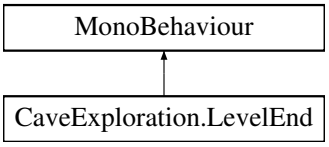
The documentation for this class was generated from the following file:

- LevelCompleteEvent.cs

## 5.35 CaveExploration.LevelEnd Class Reference

Added to the exit block for the current level. When the character enters the blocks collider LevelComplete is set to true. This is quieried in the Director Class.

Inheritance diagram for CaveExploration.LevelEnd:




### 5.35.1 Detailed Description

Added to the exit block for the current level. When the character enters the blocks collider LevelComplete is set to true. This is quieried in the Director Class.

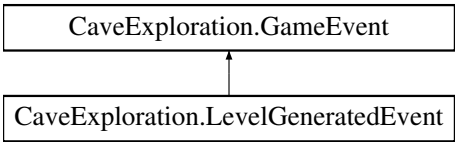
The documentation for this class was generated from the following file:

- LevelEnd.cs

## 5.36 CaveExploration.LevelGeneratedEvent Class Reference

Raised when a level has finished being generated.

Inheritance diagram for CaveExploration.LevelGeneratedEvent:




### 5.36.1 Detailed Description

Raised when a level has finished being generated.

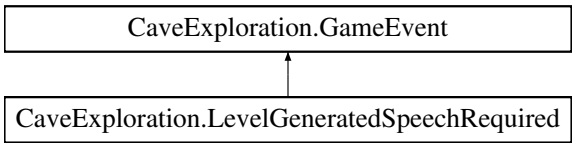
The documentation for this class was generated from the following file:

- LevelGeneratedEvent.cs

## 5.37 CaveExploration.LevelGeneratedSpeechRequired Class Reference

Raised when a level has been generated and player speech is required.

Inheritance diagram for CaveExploration.LevelGeneratedSpeechRequired:




### 5.37.1 Detailed Description

Raised when a level has been generated and player speech is required.

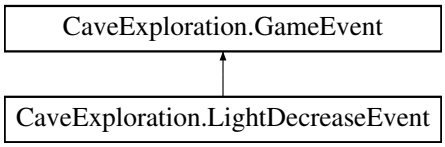
The documentation for this class was generated from the following file:

- LevelGeneratedSpeechRequired.cs

## 5.38 CaveExploration.LightDecreaseEvent Class Reference

Raised when the players light should be decreased e.g. on damage.

Inheritance diagram for CaveExploration.LightDecreaseEvent:




### Public Member Functions

- LightDecreaseEvent (float?lightAmount=null, float?radiusAmount=null)
  *Initializes a new instance of the CaveExploration.LightDecreaseEvent class.*

### Properties

- float LightAmount `[get]`
  *The amount to decrease the players light.*
- float RadiusAmount `[get]`
  *The amount to decrease the players radius.*

### 5.38.1 Detailed Description

Raised when the players light should be decreased e.g. on damage.

### 5.38.2 Constructor & Destructor Documentation

#### 5.38.2.1 CaveExploration.LightDecreaseEvent.LightDecreaseEvent ( float? *lightAmount* = `null`, float? *radiusAmount* = `null` )

Initializes a new instance of the CaveExploration.LightDecreaseEvent class.

**Parameters**

| | |
|---|---|
| *lightAmount* | Amount to decrease the players light intensity. |
| *radiusAmount* | Amount to decrease the players light radius. |

### 5.38.3 Property Documentation

#### 5.38.3.1 float CaveExploration.LightDecreaseEvent.LightAmount `[get]`

The amount to decrease the players light.

The light amount.

#### 5.38.3.2 float CaveExploration.LightDecreaseEvent.RadiusAmount `[get]`

The amount to decrease the players radius.

The radius amount.

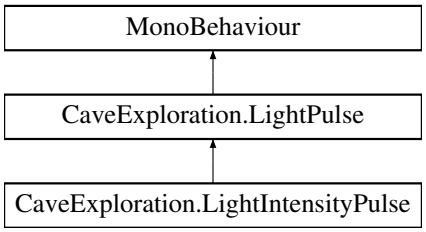
The documentation for this class was generated from the following file:

- LightDecreaseEvent.cs

## 5.39 CaveExploration.LightIntensityPulse Class Reference

Pulses a lights intensity between two values over time.

Inheritance diagram for CaveExploration.LightIntensityPulse:




### Additional Inherited Members

### 5.39.1 Detailed Description

Pulses a lights intensity between two values over time.

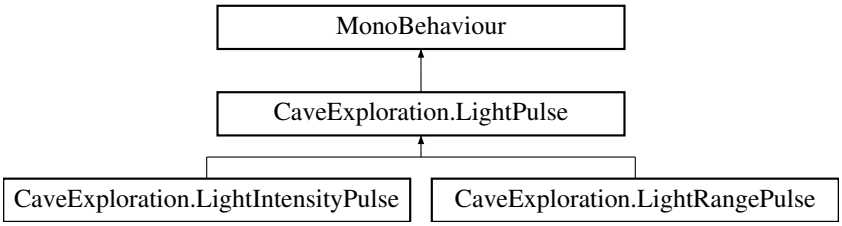
The documentation for this class was generated from the following file:

- LightIntensityPulse.cs

## 5.40 CaveExploration.LightPulse Class Reference

Used to pulse a light variable.

Inheritance diagram for CaveExploration.LightPulse:




### Public Attributes

- float Speed = 10f

  *The speed to pulse variable.*
- float Minimum = 1f

  *The minimum value.*
- float Maximum = 8f

  *The maximum value.*

### Protected Attributes

- Light **_light**

### 5.40.1 Detailed Description

Used to pulse a light variable.

### 5.40.2 Member Data Documentation

#### 5.40.2.1 float CaveExploration.LightPulse.Maximum = 8f

The maximum value.

#### 5.40.2.2 float CaveExploration.LightPulse.Minimum = 1f

The minimum value.

#### 5.40.2.3 float CaveExploration.LightPulse.Speed = 10f

The speed to pulse variable.

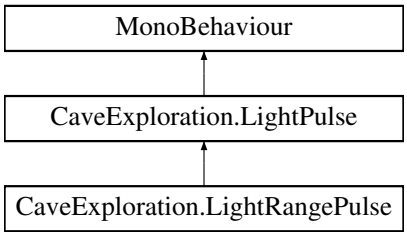
The documentation for this class was generated from the following file:

- LightPulse.cs

## 5.41 CaveExploration.LightRangePulse Class Reference

Pulses a light range between two values over time.

Inheritance diagram for CaveExploration.LightRangePulse:




### Additional Inherited Members

### 5.41.1 Detailed Description

Pulses a light range between two values over time.

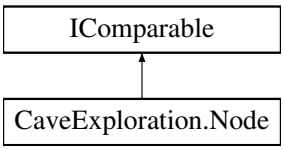
The documentation for this class was generated from the following file:

- LightRangePulse.cs

## 5.42 CaveExploration.Node Class Reference

Logical representation of a block. Holds the node type (e.g. wall, floor etc), it's coordinates (a pointer to the node in a 2d array - not it's position on screen), it's position on screen and path finding variables.

Inheritance diagram for CaveExploration.Node:




### Public Member Functions

- Node ()

  *Initializes a new instance of the CaveExploration.Node class.*
- Node (Vector2 coordinates)

  *Initializes a new instance of the CaveExploration.Node class.*
- Node (Vector2 coordinates, NodeType state)

  *Initializes a new instance of the CaveExploration.Node class.*
- Node (Vector2 coordinates, NodeType state, bool isOccupied)

  *Initializes a new instance of the CaveExploration.Node class.*
- float GetFScore ()

  *Total score. Returns GScore + HScore*
- int CompareTo (object obj)

  *Used to compare the movement cost of two nodes for pathfinding.*

### Properties

- NodeType NodeState [get, set]

  *Gets or sets the state of the node.*
- Vector2 Coordinates [get, set]

  *Gets or sets the node coordinates (i.e. location within the 2d array as opposed to actual position in world).*
- Vector2 Position [get, set]

  *Gets or sets the nodes position in the scene.*
- bool IsOccupied [get, set]

  *Gets or sets a value indicating whether this node is occupied by an enemy/player.*
- float GScore [get, set]

  *The cost to move into this node used for path finding.*
- float HScore [get, set]

  *Estimated cost to mvoe from this node to end node.*
- Node Parent [get, set]

  *Used when traversing a path.*
- bool IsObstacle [get]

  *Gets a value indicating whether this instance is obstacle and cannot be traversed.*

## 5.42.1 Detailed Description

Logical representation of a block. Holds the node type (e.g. wall, floor etc), it's coordinates (a pointer to the node in a 2d array - not it's position on screen), it's position on screen and path finding variables.

## 5.42.2 Constructor & Destructor Documentation

### 5.42.2.1 CaveExploration.Node.Node ( )

Initializes a new instance of the CaveExploration.Node class.

### 5.42.2.2 CaveExploration.Node.Node ( Vector2 *coordinates* )

Initializes a new instance of the CaveExploration.Node class.

**Parameters**

| | |
|---|---|
| *coordinates* | Coordinates. |

### 5.42.2.3 CaveExploration.Node.Node ( Vector2 *coordinates*, NodeType *state* )

Initializes a new instance of the CaveExploration.Node class.

**Parameters**

| | |
|---|---|
| *coordinates* | Coordinates. |
| *state* | State. |

### 5.42.2.4 CaveExploration.Node.Node ( Vector2 *coordinates*, NodeType *state*, bool *isOccupied* )

Initializes a new instance of the CaveExploration.Node class.

**Parameters**

| | |
|---|---|
| *coordinates* | Coordinates. |
| *state* | State. |
| *isOccupied* | If set to `true` is occupied by a player or enemy. |

### 5.42.3 Member Function Documentation

#### 5.42.3.1 int CaveExploration.Node.CompareTo ( object *obj* )

Used to compare the movement cost of two nodes for pathfinding.

**Returns**

Relative position.

**Parameters**

| | |
|---|---|
| *obj* | Object. |

#### 5.42.3.2 float CaveExploration.Node.GetFScore ( )

Total score. Returns GScore + HScore

### 5.42.4 Property Documentation

#### 5.42.4.1 Vector2 CaveExploration.Node.Coordinates `[get]`, `[set]`

Gets or sets the node coordinates (i.e. location within the 2d array as opposed to actual position in world).

The coordinates.

#### 5.42.4.2 float CaveExploration.Node.GScore `[get]`, `[set]`

The cost to move into this node used for path finding.

The G score.

#### 5.42.4.3 float CaveExploration.Node.HScore `[get]`, `[set]`

Estimated cost to mvoe from this node to end node.

The H score.

#### 5.42.4.4 bool CaveExploration.Node.IsObstacle `[get]`

Gets a value indicating whether this instance is obstacle and cannot be traversed.

`true` if this instance is obstacle; otherwise, `false`.

#### 5.42.4.5 bool CaveExploration.Node.IsOccupied `[get]`, `[set]`

Gets or sets a value indicating whether this node is occupied by an enemy/player.

`true` if this instance is occupied; otherwise, `false`.

#### 5.42.4.6 NodeType CaveExploration.Node.NodeState [get],[set]

Gets or sets the state of the node.

The state of the node.

#### 5.42.4.7 Node CaveExploration.Node.Parent [get],[set]

Used when traversing a path.

The parent.

#### 5.42.4.8 Vector2 CaveExploration.Node.Position [get],[set]

Gets or sets the nodes position in the scene.

The position.

The documentation for this class was generated from the following file:

- Node.cs

## 5.43 CaveExploration.NodeCluster Class Reference

Represents a group of neighbouring floor nodes i.e. a cavern in the environment.

### Public Member Functions

- NodeCluster ()

  *Initializes a new instance of the CaveExploration.NodeCluster class.*

### Properties

- List< Node > Nodes [get, set]

  *Gets or sets the nodes contained by this cluster.*

### 5.43.1 Detailed Description

Represents a group of neighbouring floor nodes i.e. a cavern in the environment.

### 5.43.2 Constructor & Destructor Documentation

#### 5.43.2.1 CaveExploration.NodeCluster.NodeCluster ( )

Initializes a new instance of the CaveExploration.NodeCluster class.

### 5.43.3 Property Documentation

#### 5.43.3.1 List<Node> CaveExploration.NodeCluster.Nodes [get],[set]

Gets or sets the nodes contained by this cluster.

The nodes.

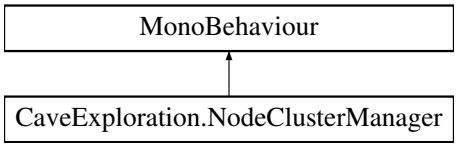
The documentation for this class was generated from the following file:

- NodeCluster.cs

## 5.44 CaveExploration.NodeClusterManager Class Reference

Singleton. Identifies, manages and holds refence to the different node clusters. Can connect un-connected clusters using path finding.

Inheritance diagram for CaveExploration.NodeClusterManager:




### Public Member Functions

- void IdentifyClusters (NodeList nodes, Rect size)

  *Identifies the clusters. Uses a flood-fill algorithm to identifty neighbouring floor tiles.*
- void ConvertDisconnectedClustersToNodeType (NodeType nodeType)

  *Converts the type of the disconnected nodes. Can be used to convert all disconnect nodes to walls.*
- void ConnectClusters ()

  *Uses A∗ algorithm to find a path from disconnected clusters to main cluster and convert nodes on that path to floors.*
- int CalculateMainCluster ()

  *Iterats through each cluster and returns the index of the cluster with the largest size.*

### Properties

- List< NodeCluster > Clusters `[get, set]`

  *Gets or sets the clusters.*
- NodeCluster MainCluster `[get]`

  *Gets the main cluster. The main cluster contains the largest number of nodes.*

### 5.44.1 Detailed Description

Singleton. Identifies, manages and holds refence to the different node clusters. Can connect un-connected clusters using path finding.

### 5.44.2 Member Function Documentation

#### 5.44.2.1 int CaveExploration.NodeClusterManager.CalculateMainCluster ( )

Iterats through each cluster and returns the index of the cluster with the largest size.

**Returns**

The main cluster index.

#### 5.44.2.2 void CaveExploration.NodeClusterManager.ConnectClusters ( )

Uses A∗ algorithm to find a path from disconnected clusters to main cluster and convert nodes on that path to floors.

#### 5.44.2.3 void CaveExploration.NodeClusterManager.ConvertDisconnectedClustersToNodeType ( NodeType *nodeType* )

Converts the type of the disconnected nodes. Can be used to convert all disconnect nodes to walls.

**Parameters**

| | |
|---|---|
| *nodeType* | The type of node to convert to. |

#### 5.44.2.4 void CaveExploration.NodeClusterManager.IdentifyClusters ( NodeList *nodes*, Rect *size* )

Identifies the clusters. Uses a flood-fill algorithm to identifty neighbouring floor tiles.

**Parameters**

| | |
|---|---|
| *nodes* | A list of all active nodes. |
| *size* | The size of the level. |

### 5.44.3 Property Documentation

#### 5.44.3.1 List<NodeCluster> CaveExploration.NodeClusterManager.Clusters [get], [set]

Gets or sets the clusters.

The clusters.

#### 5.44.3.2 NodeCluster CaveExploration.NodeClusterManager.MainCluster [get]

Gets the main cluster. The main cluster contains the largest number of nodes.

The main cluster.

The documentation for this class was generated from the following file:

- NodeClusterManager.cs

## 5.45 CaveExploration.NodeList Class Reference

Encapsulates 2D array of all active nodes in game. Provides helper methods such as Add and Contains that mimick there list counterparts.

### Public Member Functions

- **NodeList** (Rect gridSize)
- bool Contains (Node node)

  *Contains the specified node.*
- bool IsValidCoordinate (Vector2 coord)

  *Determines whether the specified coords are valid.*
- bool ContainsNodeTypeAtPosition (Vector2 coord, NodeType nodeType)

  *Determines if the node at position is of the specified type.*
- void Add (Node node)

*Add the specified node to array.*

- Node First ()

  *Returns first Node.*

- void Replace (Node origNode, Node newNode)

  *Replace the specified origNode with newNode.*

- void Replace (Vector2 origNodeCoord, Node newNode)

  *Replace the node with origNodeCoord, with the node newNode.*

- List< Node > GetAdjacentNodes (Vector2 cellCoordinate, bool includeObstacles)

  *Returns a list of adjacent nodes with or withour obstacles.*

- Node GetNodeFromPosition (Vector2 position)

  *Returns a node for a specified on-screen position.*

- Node GetNodeFromGridCoordinate (Vector2 coord)

  *Returns a node with a specified grid coordinate.*

### Properties

- int Count `[get]`

  *Gets the number of nodes contained in this list.*

## 5.45.1 Detailed Description

Encapsulates 2D array of all active nodes in game. Provides helper methods such as Add and Contains that mimick there list counterparts.

## 5.45.2 Member Function Documentation

### 5.45.2.1 void CaveExploration.NodeList.Add ( Node *node* )

Add the specified node to array.

**Parameters**

| | |
|---|---|
| *node* | Node. |

### 5.45.2.2 bool CaveExploration.NodeList.Contains ( Node *node* )

Contains the specified node.

**Parameters**

| | |
|---|---|
| *node* | Node. |

### 5.45.2.3 bool CaveExploration.NodeList.ContainsNodeTypeAtPosition ( Vector2 *coord,* NodeType *nodeType* )

Determines if the node at position is of the specified type.

**Returns**

`true`, if node at position is of specified type, `false` otherwise.

**Parameters**

| | |
|---|---|
| *coord* | Coordinate. |
| *nodeType* | Node type. |

#### 5.45.2.4 Node CaveExploration.NodeList.First ( )

Returns first Node.

#### 5.45.2.5 List<Node> CaveExploration.NodeList.GetAdjacentNodes ( Vector2 *cellCoordinate,* bool *includeObstacles* )

Returns a list of adjacent nodes with or withour obstacles.

**Returns**

The adjacent nodes.

**Parameters**

| | |
|---|---|
| *cellCoordinate* | Cell coordinate or original node. |
| *include↩ Obstacles* | If set to `true` include obstacles. |

#### 5.45.2.6 Node CaveExploration.NodeList.GetNodeFromGridCoordinate ( Vector2 *coord* )

Returns a node with a specified grid coordinate.

**Returns**

The node from grid coordinate.

**Parameters**

| | |
|---|---|
| *coord* | Coordinate. |

#### 5.45.2.7 Node CaveExploration.NodeList.GetNodeFromPosition ( Vector2 *position* )

Returns a node for a specified on-screen position.

**Returns**

The node from position.

**Parameters**

| | |
|---|---|
| *position* | Position. |

#### 5.45.2.8 bool CaveExploration.NodeList.IsValidCoordinate ( Vector2 *coord* )

Determines whether the specified coords are valid.

**Returns**

`true` if the specified coordinate are valid; otherwise, `false`.

**Parameters**

| | |
|---|---|
| *coord* | Coordinate. |

#### 5.45.2.9 void CaveExploration.NodeList.Replace ( Node *origNode*, Node *newNode* )

Replace the specified origNode with newNode.

**Parameters**

| | |
|---|---|
| *origNode* | Original node. |
| *newNode* | New node. |

#### 5.45.2.10 void CaveExploration.NodeList.Replace ( Vector2 *origNodeCoord*, Node *newNode* )

Replace the node with origNodeCoord, with the node newNode.

**Parameters**

| | |
|---|---|
| *origNodeCoord* | Original node coordinate. |
| *newNode* | New node. |

### 5.45.3 Property Documentation

#### 5.45.3.1 int CaveExploration.NodeList.Count [get]

Gets the number of nodes contained in this list.

The count.

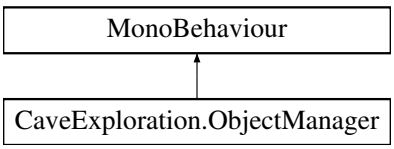
The documentation for this class was generated from the following file:

- NodeList.cs

## 5.46 CaveExploration.ObjectManager Class Reference

Manages adding and retrieving objects from the object pool.

Inheritance diagram for CaveExploration.ObjectManager:




### Public Member Functions

- GameObject GetObject (string prefabName, Vector2 position, Quaternion rotation)

  *Gets the object from the object pool. Moves to position with rotation and enables object.*
- GameObject GetObject (string prefabName, Vector2 position)

  *Gets the object from the object pool. Moves to position and enables object.*
- GameObject GetObject (string prefabName, Vector2 position, bool onlyPooledObjects)

  *Gets the object from the object pool. Moves to position and enables object.*

- void RemoveObject (GameObject obj)

  *Removes the object from the scene and adds it to the pool.*
- void RemoveObjects ()

  *Removes all spawned objects and clears spawn list.*

### Protected Attributes

- List< GameObject > **objects** = new List<GameObject> ()

### Properties

- static ObjectManager instance `[get]`

  *Gets the instance.*

## 5.46.1 Detailed Description

Manages adding and retrieving objects from the object pool.

## 5.46.2 Member Function Documentation

#### 5.46.2.1 GameObject CaveExploration.ObjectManager.GetObject ( string *prefabName*, Vector2 *position*, Quaternion *rotation* )

Gets the object from the object pool. Moves to position with rotation and enables object.

**Returns**

The object.

**Parameters**

| | |
|---|---|
| *prefabName* | Prefab name. |
| *position* | Position. |
| *rotation* | Rotation. |

#### 5.46.2.2 GameObject CaveExploration.ObjectManager.GetObject ( string *prefabName*, Vector2 *position* )

Gets the object from the object pool. Moves to position and enables object.

**Returns**

The object.

**Parameters**

| | |
|---|---|
| *prefabName* | Prefab name. |
| *position* | Position. |

#### 5.46.2.3 GameObject CaveExploration.ObjectManager.GetObject ( string *prefabName*, Vector2 *position*, bool *onlyPooledObjects* )

Gets the object from the object pool. Moves to position and enables object.

**Returns**

The object.

**Parameters**

| | |
|---|---|
| *prefabName* | Prefab name. |
| *position* | Position. |
| *onlyPooled↩ Objects* | If set to `true` only pooled objects will be returned. If no object is found in pool then null is returned. |

#### 5.46.2.4 void CaveExploration.ObjectManager.RemoveObject ( GameObject *obj* )

Removes the object from the scene and adds it to the pool.

**Parameters**

| | |
|---|---|
| *obj* | Object. |

#### 5.46.2.5 void CaveExploration.ObjectManager.RemoveObjects ( )

Removes all spawned objects and clears spawn list.

### 5.46.3 Property Documentation

#### 5.46.3.1 ObjectManager CaveExploration.ObjectManager.instance [static],[get]

Gets the instance.

The instance.

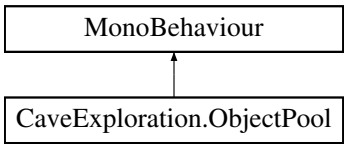
The documentation for this class was generated from the following file:

- ObjectManager.cs

## 5.47 CaveExploration.ObjectPool Class Reference

Object pool system.

Inheritance diagram for CaveExploration.ObjectPool:




### Public Member Functions

- GameObject GetObjectForType (string objectType, bool onlyPooled)

  *Gets a new object for the name type provided. If no object type exists or if onlypooled is true and there is no objects of that type in the pool then null will be returned.*
- void PoolObject (GameObject obj)

  *Pools the object specified. Will not be pooled if there is no prefab of that type.*

### Public Attributes

- GameObject[ ] objectPrefabs

  *The object prefabs which the pool can handle.*
- List< GameObject >[ ] pooledObjects

  *The pooled objects currently available.*
- int[ ] amountToBuffer

  *The amount of objects of each type to buffer.*
- int **defaultBufferAmount** = 3

### Protected Attributes

- GameObject containerObject

  *The container object that we will keep unused pooled objects so we dont clog up the editor with objects.*

## 5.47.1 Detailed Description

Object pool system.

## 5.47.2 Member Function Documentation

#### 5.47.2.1 GameObject CaveExploration.ObjectPool.GetObjectForType ( string *objectType,* bool *onlyPooled* )

Gets a new object for the name type provided. If no object type exists or if onlypooled is true and there is no objects of that type in the pool then null will be returned.

**Returns**

The object for type.

**Parameters**

| | |
|---|---|
| *objectType* | Object type. |
| *onlyPooled* | If true, it will only return an object if there is one currently pooled. |

#### 5.47.2.2 void CaveExploration.ObjectPool.PoolObject ( GameObject *obj* )

Pools the object specified. Will not be pooled if there is no prefab of that type.

**Parameters**

| | |
|---|---|
| *obj* | Object to be pooled. |

## 5.47.3 Member Data Documentation

#### 5.47.3.1 int [ ] CaveExploration.ObjectPool.amountToBuffer

The amount of objects of each type to buffer.

#### 5.47.3.2 GameObject CaveExploration.ObjectPool.containerObject [protected]

The container object that we will keep unused pooled objects so we dont clog up the editor with objects.

#### 5.47.3.3 GameObject [ ] CaveExploration.ObjectPool.objectPrefabs

The object prefabs which the pool can handle.

#### 5.47.3.4 List<GameObject> [ ] CaveExploration.ObjectPool.pooledObjects

The pooled objects currently available.

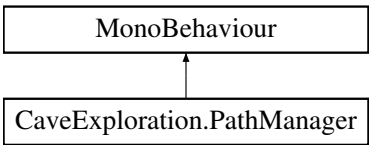
The documentation for this class was generated from the following file:

- ObjectPool.cs

## 5.48 CaveExploration.PathManager Class Reference

Creates a path between two nodes.

Inheritance diagram for CaveExploration.PathManager:




### Public Member Functions

- List< Node > GetShortestPath (Node orig, Node dest, float wallMovementCost, bool includeObstacles)
  *Gets the shortest path using A∗.*

### 5.48.1 Detailed Description

Creates a path between two nodes.

### 5.48.2 Member Function Documentation

#### 5.48.2.1 List<Node> CaveExploration.PathManager.GetShortestPath ( Node *orig*, Node *dest*, float *wallMovementCost*, bool *includeObstacles* )

Gets the shortest path using A∗.

**Returns**

A list of nodes between start and end that represents the shortest path.

**Parameters**

| | |
|---|---|
| *orig* | Original cell. |
| *dest* | Destination cell. |
| *wallMovement↩ Cost* | Wall movement cost. |

| | |
|---|---|
| *include↩ Obstacles* | If set to `true` include obstacles. |

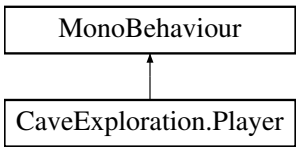
The documentation for this class was generated from the following file:

- PathManager.cs

## 5.49 CaveExploration.Player Class Reference

Handles player movement.

Inheritance diagram for CaveExploration.Player:




### Public Attributes

- bool IsFacingRight

  *Determines wether the player is facing right. Used to face the sprite in the movement direction.*
- float MaxWalkSpeed = 2f

  *The maximum walk speed.*
- float MaxRunSpeed = 4f

  *The maximum run speed.*
- float JumpForce = 500f

  *The jump force.*

### Properties

- bool IsDead `[get, set]`

  *Gets or sets a value indicating whether this instance is dead.*
- bool HasJumped `[get, set]`

  *Gets or sets a value indicating whether this instance has jumped. Used for double jumping.*
- float MoveSpeed `[get]`

  *Gets the current movement speed.*

### 5.49.1 Detailed Description

Handles player movement.

### 5.49.2 Member Data Documentation

#### 5.49.2.1 bool CaveExploration.Player.IsFacingRight

Determines wether the player is facing right. Used to face the sprite in the movement direction.

#### 5.49.2.2 float CaveExploration.Player.JumpForce = 500f

The jump force.

#### 5.49.2.3 float CaveExploration.Player.MaxRunSpeed = 4f

The maximum run speed.

#### 5.49.2.4 float CaveExploration.Player.MaxWalkSpeed = 2f

The maximum walk speed.

### 5.49.3 Property Documentation

#### 5.49.3.1 bool CaveExploration.Player.HasJumped [get], [set]

Gets or sets a value indicating whether this instance has jumped. Used for double jumping.

`true` if this instance has jumped; otherwise, `false`.

#### 5.49.3.2 bool CaveExploration.Player.IsDead [get], [set]

Gets or sets a value indicating whether this instance is dead.

`true` if this instance is dead; otherwise, `false`.

#### 5.49.3.3 float CaveExploration.Player.MoveSpeed [get]

Gets the current movement speed.

The move speed.

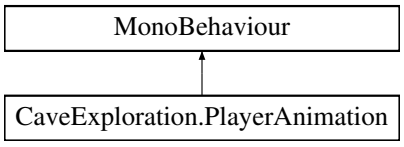
The documentation for this class was generated from the following file:

- Player.cs

## 5.50 CaveExploration.PlayerAnimation Class Reference

Responsible for updating the players animation based on movement.

Inheritance diagram for CaveExploration.PlayerAnimation:




### Public Member Functions

- void FinishedSpawning ()

  *Sets spawning as finished.*

### Properties

- bool IsSpawning `[get]`

  *Gets a value indicating whether this instance is spawning.*

### 5.50.1 Detailed Description

Responsible for updating the players animation based on movement.

### 5.50.2 Member Function Documentation

#### 5.50.2.1 void CaveExploration.PlayerAnimation.FinishedSpawning ( )

Sets spawning as finished.

### 5.50.3 Property Documentation

#### 5.50.3.1 bool CaveExploration.PlayerAnimation.IsSpawning `[get]`

Gets a value indicating whether this instance is spawning.

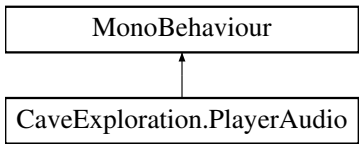
`true` if this instance is spawning; otherwise, `false`.

The documentation for this class was generated from the following file:

- PlayerAnimation.cs

## 5.51 CaveExploration.PlayerAudio Class Reference

Inheritance diagram for CaveExploration.PlayerAudio:




### Public Member Functions

- void PlayStepAudio ()

  *Plays random clip on player step.*
- void OnPlayerDamaged ()

  *Plays sound when player damaged.*
- void PlaySpawnSound ()

  *Plays spawn sound.*

### Public Attributes

- AudioClip[ ] StepClips

  *Audio to be played on player taking a step.*
- AudioClip FallingAudio

*Audio to be played on player falling.*

- AudioClip JumpAudio

  *Audio to be played on player jumping.*

- AudioClip HurtAudio

  *Audio to be played on player hurt.*

- AudioClip SpawnSound

  *Audio to be played on player spawned.*

### 5.51.1 Member Function Documentation

#### 5.51.1.1 void CaveExploration.PlayerAudio.OnPlayerDamaged ( )

Plays sound when player damaged.

#### 5.51.1.2 void CaveExploration.PlayerAudio.PlaySpawnSound ( )

Plays spawn sound.

#### 5.51.1.3 void CaveExploration.PlayerAudio.PlayStepAudio ( )

Plays random clip on player step.

### 5.51.2 Member Data Documentation

#### 5.51.2.1 AudioClip CaveExploration.PlayerAudio.FallingAudio

Audio to be played on player falling.

#### 5.51.2.2 AudioClip CaveExploration.PlayerAudio.HurtAudio

Audio to be played on player hurt.

#### 5.51.2.3 AudioClip CaveExploration.PlayerAudio.JumpAudio

Audio to be played on player jumping.

#### 5.51.2.4 AudioClip CaveExploration.PlayerAudio.SpawnSound

Audio to be played on player spawned.

#### 5.51.2.5 AudioClip [ ] CaveExploration.PlayerAudio.StepClips

Audio to be played on player taking a step.

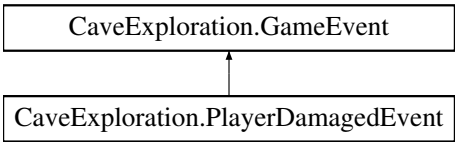
The documentation for this class was generated from the following file:

- PlayerAudio.cs

## 5.52 CaveExploration.PlayerDamagedEvent Class Reference

Raised when the player takes damage.

Inheritance diagram for CaveExploration.PlayerDamagedEvent:




### Public Member Functions

- PlayerDamagedEvent (int damageAmount)

  *Initializes a new instance of the CaveExploration.PlayerDamagedEvent class.*
- PlayerDamagedEvent (int damageAmount, Vector2?forceDirection, float force)

  *Initializes a new instance of the CaveExploration.PlayerDamagedEvent class.*
- Vector2 DamageForce ()

  *The force to apply as knockback when player recieves damage.*

### Properties

- int DamageAmount `[get]`

  *The amount to reduce the players health.*

### 5.52.1 Detailed Description

Raised when the player takes damage.

### 5.52.2 Constructor & Destructor Documentation

#### 5.52.2.1 CaveExploration.PlayerDamagedEvent.PlayerDamagedEvent ( int *damageAmount* )

Initializes a new instance of the CaveExploration.PlayerDamagedEvent class.

**Parameters**

| | |
|---|---|
| *damageAmount* | Damage amount. |

#### 5.52.2.2 CaveExploration.PlayerDamagedEvent.PlayerDamagedEvent ( int *damageAmount,* Vector2? *forceDirection,* float *force* )

Initializes a new instance of the CaveExploration.PlayerDamagedEvent class.

**Parameters**

| | |
|---|---|
| *damageAmount* | Damage amount. |
| *forceDirection* | Force direction. |

| | |
|---|---|
| *force* | Force. |

### 5.52.3 Member Function Documentation

#### 5.52.3.1 Vector2 CaveExploration.PlayerDamagedEvent.DamageForce ( )

The force to apply as knockback when player recieves damage.

**Returns**

The force.

### 5.52.4 Property Documentation

#### 5.52.4.1 int CaveExploration.PlayerDamagedEvent.DamageAmount [get]

The amount to reduce the players health.

The damage amount.

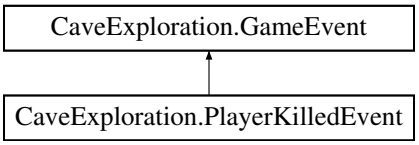
The documentation for this class was generated from the following file:

- PlayerDamagedEvent.cs

## 5.53 CaveExploration.PlayerKilledEvent Class Reference

Raised when the player is killed.

Inheritance diagram for CaveExploration.PlayerKilledEvent:




### 5.53.1 Detailed Description

Raised when the player is killed.

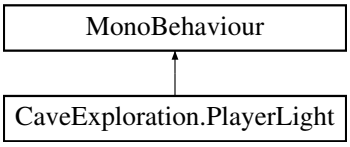
The documentation for this class was generated from the following file:

- PlayerKilledEvent.cs

## 5.54 CaveExploration.PlayerLight Class Reference

Responsible for updating the players light.

Inheritance diagram for CaveExploration.PlayerLight:




### Public Attributes

- float LightDecreaseOverTime = 0.001f

  *The light intensity decrease per fixed update.*
- float RadiusDecreaseOverTime = 0.0002f

  *The radius decrease per fixed update.*
- AudioClip PickUpAudio

  *The audio clip to play when light collectible picked up.*
- bool RestartLevelOnEmptyLight = false

  *Sets whether the level should be reset when light reaches zero.*
- string[ ] LightLowSpeech

  *Speech options when light reaches threshold.*
- float LowLightThreshold = 2f

  *The low light threshold (LowLightSpeech is shown when the light reaches this threshold).*
- Color LightDecreaseColour = Color.black

  *The light colour when player has been hit.*
- float DamageAnimationTime = 0.5f

  *The time to change the light colour.*
- string[ ] LightDecreaseSpeech

  *Speech options to show then the light decreases.*

## 5.54.1 Detailed Description

Responsible for updating the players light.

## 5.54.2 Member Data Documentation

### 5.54.2.1 float CaveExploration.PlayerLight.DamageAnimationTime = 0.5f

The time to change the light colour.

### 5.54.2.2 Color CaveExploration.PlayerLight.LightDecreaseColour = Color.black

The light colour when player has been hit.

### 5.54.2.3 float CaveExploration.PlayerLight.LightDecreaseOverTime = 0.001f

The light intensity decrease per fixed update.

### 5.54.2.4 string [ ] CaveExploration.PlayerLight.LightDecreaseSpeech

Speech options to show then the light decreases.

#### 5.54.2.5 string [ ] CaveExploration.PlayerLight.LightLowSpeech

Speech options when light reaches threshold.

#### 5.54.2.6 float CaveExploration.PlayerLight.LowLightThreshold = 2f

The low light threshold (LowLightSpeech is shown when the light reaches this threshold).

#### 5.54.2.7 AudioClip CaveExploration.PlayerLight.PickUpAudio

The audio clip to play when light collectible picked up.

#### 5.54.2.8 float CaveExploration.PlayerLight.RadiusDecreaseOverTime = 0.0002f

The radius decrease per fixed update.

#### 5.54.2.9 bool CaveExploration.PlayerLight.RestartLevelOnEmptyLight = false

Sets whether the level should be reset when light reaches zero.

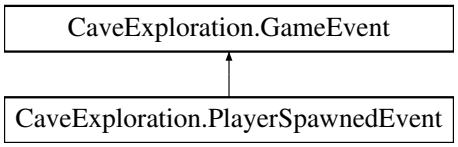
The documentation for this class was generated from the following file:

- PlayerLight.cs

## 5.55 CaveExploration.PlayerSpawnedEvent Class Reference

Raised when the player is spawned.

Inheritance diagram for CaveExploration.PlayerSpawnedEvent:




### Public Member Functions

- PlayerSpawnedEvent (Transform player)

  *Initializes a new instance of the CaveExploration.PlayerSpawnedEvent class.*

### Properties

- Transform Player `[get]`

  *The players transform.*

### 5.55.1 Detailed Description

Raised when the player is spawned.

### 5.55.2 Constructor & Destructor Documentation

#### 5.55.2.1 CaveExploration.PlayerSpawnedEvent.PlayerSpawnedEvent ( Transform *player* )

Initializes a new instance of the CaveExploration.PlayerSpawnedEvent class.

**Parameters**

| | |
|---|---|
| *player* | Player. |

### 5.55.3 Property Documentation

#### 5.55.3.1 Transform CaveExploration.PlayerSpawnedEvent.Player [get]

The players transform.

The player.

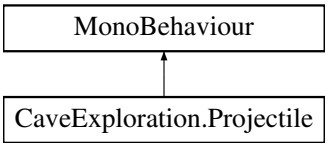
The documentation for this class was generated from the following file:

- PlayerSpawnedEvent.cs

## 5.56 CaveExploration.Projectile Class Reference

Attach to players light projectile. Handles seeking enemies, collision, and returning projectile to pool.

Inheritance diagram for CaveExploration.Projectile:




### Public Attributes

- bool SeekEnemies = false

  *Sets whether this projectile should seek an enemy.*
- float SeekSpeed = 2f

  *THe speed to seek enemies.*
- float RotationSpeed = 0.5f

  *The maximum speed at which the projectile can rotate to move towards an enemy.*
- float MaxTimeAlive = 5f

  *The maximum time the projectile can be in the scene. It is added to the pool once this time has been reached.*

### 5.56.1 Detailed Description

Attach to players light projectile. Handles seeking enemies, collision, and returning projectile to pool.

### 5.56.2 Member Data Documentation

#### 5.56.2.1 float CaveExploration.Projectile.MaxTimeAlive = 5f

The maximum time the projectile can be in the scene. It is added to the pool once this time has been reached.

#### 5.56.2.2 float CaveExploration.Projectile.RotationSpeed = 0.5f

The maximum speed at which the projectile can rotate to move towards an enemy.

#### 5.56.2.3 bool CaveExploration.Projectile.SeekEnemies = false

Sets whether this projectile should seek an enemy.

#### 5.56.2.4 float CaveExploration.Projectile.SeekSpeed = 2f

THe speed to seek enemies.

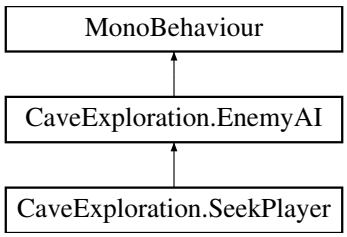
The documentation for this class was generated from the following file:

- Projectile.cs

## 5.57 CaveExploration.SeekPlayer Class Reference

AI for the "SeekPlayer" enemy. Handles animation, audio, and AI states.

Inheritance diagram for CaveExploration.SeekPlayer:




### Public Member Functions

- override void Update ()

  *Update this instance using a simple state machine.*
- void BurstMoveTowardsPlayer ()

  *Burst moves towards the player. Called by animation.*

### Public Attributes

- float MoveBurstForce = 1f

  *The burst force to use when seeking player.*
- float RotationSpeed = 0.5f

  *The maximum speed at which the enemy can rotate towards player.*
- float TimeBetweenMovementBursts = 0.2f

  *The time between movement bursts.*
- float MaxForce = 2f

  *The maximum movement force.*
- AudioClip MoveAudio

  *Audio clip to play on enemy movement.*

### Protected Member Functions

- override void **Idle** ()
- override void **AttackPlayer** ()
- override void **DecideState** ()

### Additional Inherited Members

## 5.57.1 Detailed Description

AI for the "SeekPlayer" enemy. Handles animation, audio, and AI states.

## 5.57.2 Member Function Documentation

#### 5.57.2.1 void CaveExploration.SeekPlayer.BurstMoveTowardsPlayer ( )

Burst moves towards the player. Called by animation.

#### 5.57.2.2 override void CaveExploration.SeekPlayer.Update ( ) [virtual]

Update this instance using a simple state machine.

Reimplemented from CaveExploration.EnemyAI.

## 5.57.3 Member Data Documentation

#### 5.57.3.1 float CaveExploration.SeekPlayer.MaxForce = 2f

The maximum movement force.

#### 5.57.3.2 AudioClip CaveExploration.SeekPlayer.MoveAudio

Audio clip to play on enemy movement.

#### 5.57.3.3 float CaveExploration.SeekPlayer.MoveBurstForce = 1f

The burst force to use when seeking player.

#### 5.57.3.4 float CaveExploration.SeekPlayer.RotationSpeed = 0.5f

The maximum speed at which the enemy can rotate towards player.

#### 5.57.3.5 float CaveExploration.SeekPlayer.TimeBetweenMovementBursts = 0.2f

The time between movement bursts.

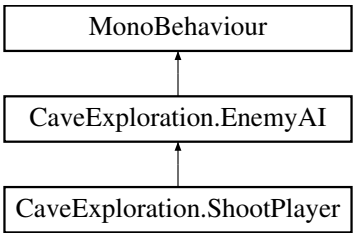
The documentation for this class was generated from the following file:

- SeekPlayer.cs

## 5.58 CaveExploration.ShootPlayer Class Reference

AI for the "ShootPlayer" enemy. Handles animation, audio, and AI states.

Inheritance diagram for CaveExploration.ShootPlayer:




### Public Member Functions

- override void Update ()

  *Update this instance using a simple state machine.*
- void ShootProjectile ()

  *Shoots the projectile in direction of player.*

### Public Attributes

- float MoveSpeed = 1f

  *The maximum movement speed.*
- float ProjectileForce = 1f

  *The force used to shoot projectiles towards player.*
- GameObject Projectile

  *The projectile prefab.*
- Transform ProjectileSpawnLocation

  *The projectile spawn location relative to enemy.*
- bool IsFacingRight = true

  *Determines whether enemy is facing right. Used to flip sprite to face movement direction.*
- AudioClip ShootAudioClip

  *Audio clip to play on shoot.*

### Protected Member Functions

- override void **DecideState** ()
- override void **Idle** ()
- override void **AttackPlayer** ()

### Additional Inherited Members

### 5.58.1 Detailed Description

AI for the "ShootPlayer" enemy. Handles animation, audio, and AI states.

### 5.58.2 Member Function Documentation

#### 5.58.2.1 void CaveExploration.ShootPlayer.ShootProjectile ( )

Shoots the projectile in direction of player.

#### 5.58.2.2 override void CaveExploration.ShootPlayer.Update ( ) [virtual]

Update this instance using a simple state machine.

Reimplemented from CaveExploration.EnemyAI.

### 5.58.3 Member Data Documentation

#### 5.58.3.1 bool CaveExploration.ShootPlayer.IsFacingRight = true

Determines whether enemy is facing right. Used to flip sprite to face movement direction.

#### 5.58.3.2 float CaveExploration.ShootPlayer.MoveSpeed = 1f

The maximum movement speed.

#### 5.58.3.3 GameObject CaveExploration.ShootPlayer.Projectile

The projectile prefab.

#### 5.58.3.4 float CaveExploration.ShootPlayer.ProjectileForce = 1f

The force used to shoot projectiles towards player.

#### 5.58.3.5 Transform CaveExploration.ShootPlayer.ProjectileSpawnLocation

The projectile spawn location relative to enemy.

#### 5.58.3.6 AudioClip CaveExploration.ShootPlayer.ShootAudioClip

Audio clip to play on shoot.

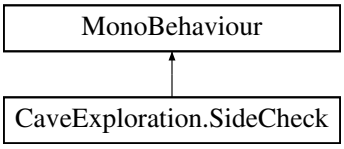
The documentation for this class was generated from the following file:

- ShootPlayer.cs

## 5.59 CaveExploration.SideCheck Class Reference

Checks whether the player is colliding on the sides with a wall tile.

Inheritance diagram for CaveExploration.SideCheck:




### Public Attributes

- LayerMask GroundMask
  *The ground mask.*
- float KnockbackForce = 200f
  *The force to apply when a player walks into a wall.*

### 5.59.1 Detailed Description

Checks whether the player is colliding on the sides with a wall tile.

### 5.59.2 Member Data Documentation

#### 5.59.2.1 LayerMask CaveExploration.SideCheck.GroundMask

The ground mask.

#### 5.59.2.2 float CaveExploration.SideCheck.KnockbackForce = 200f

The force to apply when a player walks into a wall.

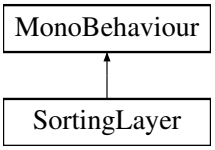
The documentation for this class was generated from the following file:

- SideCheck.cs

## 5.60 SortingLayer Class Reference

Changes a mesh renderers sorting layer.

Inheritance diagram for SortingLayer:




### Public Attributes

- int SortingOrder = 0
  *The sorting order.*

### 5.60.1 Detailed Description

Changes a mesh renderers sorting layer.

### 5.60.2 Member Data Documentation

#### 5.60.2.1 int SortingLayer.SortingOrder = 0

The sorting order.

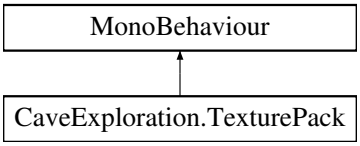
The documentation for this class was generated from the following file:

- SortingLayer.cs

## 5.61 CaveExploration.TexturePack Class Reference

Singleton. Provides a centralised location for block tetures. Provides a method to retrieve a texture based on a node type.

Inheritance diagram for CaveExploration.TexturePack:




### Public Member Functions

- Sprite GetSpriteFromCellType (NodeType cellType)

  *Returns a texture based on a node type.*
- Vector2 GetSpriteSize (NodeType cellType, Vector2 localScale)

  *Gets the size of the sprite.*

### Public Attributes

- bool Enabled = true

  *Whether this texture pack can be used in the game.*
- Sprite WallTopLeft

  *The wall top left sprite.*
- Sprite WallTopMiddle

  *The wall top middle sprite.*
- Sprite WallTopRight

  *The wall top right sprite.*
- Sprite WallMiddleLeft

  *The wall middle left sprite.*
- Sprite WallMiddle

  *The wall middle sprite.*
- Sprite WallMiddleRight

  *The wall middle right sprite.*
- Sprite WallBottomLeft

  *The wall bottom left sprite.*
- Sprite WallBottomMiddle

  *The wall bottom middle sprite.*
- Sprite WallBottomRight

*The wall bottom right sprite.*

- Sprite Background

  *The background sprite.*

### 5.61.1 Detailed Description

Singleton. Provides a centralised location for block tetures. Provides a method to retrieve a texture based on a node type.

### 5.61.2 Member Function Documentation

#### 5.61.2.1 Sprite CaveExploration.TexturePack.GetSpriteFromCellType ( NodeType *cellType* )

Returns a texture based on a node type.

#### 5.61.2.2 Vector2 CaveExploration.TexturePack.GetSpriteSize ( NodeType *cellType,* Vector2 *localScale* )

Gets the size of the sprite.

**Returns**

The sprite size.

**Parameters**

| | |
|---|---|
| *cellType* | Cell type. |
| *localScale* | Local scale. |

### 5.61.3 Member Data Documentation

#### 5.61.3.1 Sprite CaveExploration.TexturePack.Background

The background sprite.

#### 5.61.3.2 bool CaveExploration.TexturePack.Enabled = true

Whether this texture pack can be used in the game.

#### 5.61.3.3 Sprite CaveExploration.TexturePack.WallBottomLeft

The wall bottom left sprite.

#### 5.61.3.4 Sprite CaveExploration.TexturePack.WallBottomMiddle

The wall bottom middle sprite.

#### 5.61.3.5 Sprite CaveExploration.TexturePack.WallBottomRight

The wall bottom right sprite.

#### 5.61.3.6 Sprite CaveExploration.TexturePack.WallMiddle

The wall middle sprite.

#### 5.61.3.7 Sprite CaveExploration.TexturePack.WallMiddleLeft

The wall middle left sprite.

#### 5.61.3.8 Sprite CaveExploration.TexturePack.WallMiddleRight

The wall middle right sprite.

#### 5.61.3.9 Sprite CaveExploration.TexturePack.WallTopLeft

The wall top left sprite.

#### 5.61.3.10 Sprite CaveExploration.TexturePack.WallTopMiddle

The wall top middle sprite.

#### 5.61.3.11 Sprite CaveExploration.TexturePack.WallTopRight

The wall top right sprite.

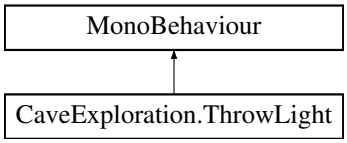
The documentation for this class was generated from the following file:

- TexturePack.cs

## 5.62 CaveExploration.ThrowLight Class Reference

Handles the players ability to throw light.

Inheritance diagram for CaveExploration.ThrowLight:




### Public Attributes

- int Capacity = 3

  *The number of lights held by the plyer at game start.*
- GameObject Throwable

  *The throwable prefab.*
- float Force = 5f

  *The force that light is thrown.*
- string[ ] SpeechOnEmpty

  *Speech options to show when there are no more lights to be thrown.*

### 5.62.1 Detailed Description

Handles the players ability to throw light.

### 5.62.2 Member Data Documentation

#### 5.62.2.1 int CaveExploration.ThrowLight.Capacity = 3

The number of lights held by the plyer at game start.

#### 5.62.2.2 float CaveExploration.ThrowLight.Force = 5f

The force that light is thrown.

#### 5.62.2.3 string [ ] CaveExploration.ThrowLight.SpeechOnEmpty

Speech options to show when there are no more lights to be thrown.

#### 5.62.2.4 GameObject CaveExploration.ThrowLight.Throwable

The throwable prefab.

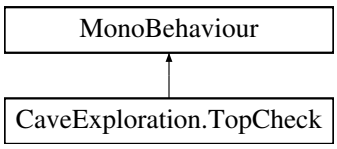
The documentation for this class was generated from the following file:

- ThrowLight.cs

## 5.63 CaveExploration.TopCheck Class Reference

Checks whether the player is colliding on the top with a wall tile.

Inheritance diagram for CaveExploration.TopCheck:




### Public Attributes

- LayerMask GroundMask

  *The ground mask.*
- float KnockbackForce = 20f

  *The force to apply when a player collides with a wall.*
- ParticleSystem particle

  *The particle.*

### 5.63.1 Detailed Description

Checks whether the player is colliding on the top with a wall tile.

### 5.63.2 Member Data Documentation

#### 5.63.2.1 LayerMask CaveExploration.TopCheck.GroundMask

The ground mask.

#### 5.63.2.2 float CaveExploration.TopCheck.KnockbackForce = 20f

The force to apply when a player collides with a wall.

#### 5.63.2.3 ParticleSystem CaveExploration.TopCheck.particle

The particle.

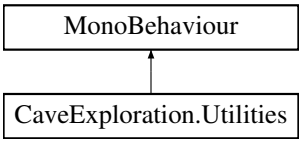
The documentation for this class was generated from the following file:

- TopCheck.cs

## 5.64 CaveExploration.Utilities Class Reference

Singleton. Provides centralised access to methods used by different classes.

Inheritance diagram for CaveExploration.Utilities:




### Public Member Functions

- Vector2 GetNodePosition (Node node)

  *Returns world position of a specified node*
- Vector2 GetGridCoordinateForPosition (Vector2 position)

  *Returns grid coordinates for a node at*
- float IncrementTowards (float n, float target, float acc)

  *Increments n towards target based on acceleration. Useful in bespoke physics engine to increment a characters position towards their toarget.*
- GameObject FindObjectWithTag (string scriptName, string tag)

  *Implementation of unitys FindObjectWithTag with additional logging.*
- T FindObjectOfType< T > (string scriptName)

  *Implementation of unitys FindObjectOfType with additional logging.*
- T GetChildComponent< T > (string scriptName, Transform owner)

  *Implementation of unitys GetChildComponenet with additional logging.*
- T GetComponent< T > (string scriptName)

  *Implementation of unitys GetComponenet with additional logging.*
- void **UpdateNodeSortingOrder** (string scriptName, GameObject node, int order)
- GameObject InstantiatePrefabAtPosition (string scriptName, GameObject prefab, Vector2 position)

  *Implementation of unitys Instantiate with additional logging. Instantiates object at specified position. Preferably use ObjectManager to initialise objects as this uses the object pool.*
- GameObject InstantiatePrefab (string scriptName, GameObject prefab)

*Implementation of unitys Instantiate with additional logging. Preferably use ObjectManager to initialise objects as this uses the object pool.*

- GameObject GetPrefab (string scriptName, string prefabName)

  *Returns prefab with specified name. Outputs error if prefab not found.*
- List< Ray2D > CreateRays (Vector2 position, Vector2 heading, float angle, int number)

  *Creates rays with angle difference.*
- List< Ray2D > CreateRays (Vector2 position, Vector2 heading, float angle)

  *Creates three rays with angle difference.*

### Public Attributes

- bool IsDebug = false

  *Sets whether the game is in debug mode. WHen in debug mode extra logs are shown and player can use cheat keys to skip levels.*

### Properties

- static Utilities instance `[get]`

  *Gets the instance.*

## 5.64.1 Detailed Description

Singleton. Provides centralised access to methods used by different classes.

## 5.64.2 Member Function Documentation

### 5.64.2.1 List<Ray2D> CaveExploration.Utilities.CreateRays ( Vector2 *position*, Vector2 *heading*, float *angle*, int *number* )

Creates rays with angle difference.

#### Returns

The rays.

#### Parameters

| | |
|---|---|
| *position* | Position of rays. |
| *heading* | Heading of central ray. |
| *angle* | Angle between each ray. |
| *number* | Number of rays to create. |

### 5.64.2.2 List<Ray2D> CaveExploration.Utilities.CreateRays ( Vector2 *position*, Vector2 *heading*, float *angle* )

Creates three rays with angle difference.

#### Returns

The created rays.

**Parameters**

| | |
|---|---|
| *position* | Position of rays. |
| *heading* | Heading of central ray. |
| *angle* | Angle between each ray. |

#### 5.64.2.3 T CaveExploration.Utilities.FindObjectOfType< T > ( string *scriptName* )

Implementation of unitys FindObjectOfType with additional logging.

**Type Constraints**

***T* : *Component***

#### 5.64.2.4 GameObject CaveExploration.Utilities.FindObjectWithTag ( string *scriptName,* string *tag* )

Implementation of unitys FindObjectWithTag with additional logging.

#### 5.64.2.5 T CaveExploration.Utilities.GetChildComponent< T > ( string *scriptName,* Transform *owner* )

Implementation of unitys GetChildComponenet with additional logging.

**Type Constraints**

***T* : *Component***

#### 5.64.2.6 T CaveExploration.Utilities.GetComponent< T > ( string *scriptName* )

Implementation of unitys GetComponenet with additional logging.

**Type Constraints**

***T* : *Component***

#### 5.64.2.7 Vector2 CaveExploration.Utilities.GetGridCoordinateForPosition ( Vector2 *position* )

Returns grid coordinates for a node at

#### 5.64.2.8 Vector2 CaveExploration.Utilities.GetNodePosition ( Node *node* )

Returns world position of a specified node

#### 5.64.2.9 GameObject CaveExploration.Utilities.GetPrefab ( string *scriptName,* string *prefabName* )

Returns prefab with specified name. Outputs error if prefab not found.

#### 5.64.2.10 float CaveExploration.Utilities.IncrementTowards ( float *n,* float *target,* float *acc* )

Increments n towards target based on acceleration. Useful in bespoke physics engine to increment a characters position towards their toarget.

#### 5.64.2.11 GameObject CaveExploration.Utilities.InstantiatePrefab ( string *scriptName,* GameObject *prefab* )

Implementation of unitys Instantiate with additional logging. Preferably use ObjectManager to initialise objects as this uses the object pool.

#### 5.64.2.12 GameObject CaveExploration.Utilities.InstantiatePrefabAtPosition ( string *scriptName,* GameObject *prefab,* Vector2 *position* )

Implementation of unitys Instantiate with additional logging. Instantiates object at specified position. Preferably use ObjectManager to initialise objects as this uses the object pool.

### 5.64.3 Member Data Documentation

#### 5.64.3.1 bool CaveExploration.Utilities.IsDebug = false

Sets whether the game is in debug mode. WHen in debug mode extra logs are shown and player can use cheat keys to skip levels.

### 5.64.4 Property Documentation

#### 5.64.4.1 Utilities CaveExploration.Utilities.instance [static],[get]

Gets the instance.

The instance.

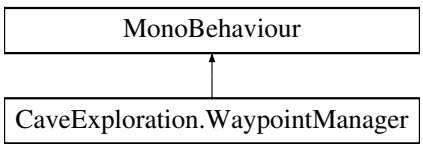
The documentation for this class was generated from the following file:

- Utilities.cs

## 5.65 CaveExploration.WaypointManager Class Reference

Holds list of waypoints and allows iteration over waypoints.

Inheritance diagram for CaveExploration.WaypointManager:




### Public Member Functions

- void InitialiseWaypointsFromNodes (List< Node > path)

  *Initialises the internal waypoints from a list of nodes.*
- bool HasReachedCurrentWaypoint (Vector2 characterPosition)

  *Determines whether this object has reached current waypoint.*
- Node GetCurrentWaypoint ()

  *Gets the current waypoint.*
- bool Initialised ()

  *Gets wether the waypoint manager has been initialised.*

- Vector2 GetNextReactivePosition (Vector2 currentPosition)

  *Gets the next reactive position. The next position within the players line of sight (LOS) is returned. This iterates from the current waypoint to the next 5 waypoints and returns the last waypoint in the characters LOS.*
- Vector2 GetNextPosition (Vector2 currentPosition)

  *Gets the next position that character should move towards.*

### Public Attributes

- bool IsLooped = false

  *If not looped will end at last wapoint*
- float WaypointProximity = 0.1f

  *When entity is within this distance to waypoint it will be registered as visited*
- List< Node > Waypoints = new List<Node> ()

  *List of waypoint objects - initialised in InitialiliseWayPoints*

### Properties

- bool IsComplete `[get, set]`

  *Gets or sets a value indicating whether this instance is complete.*

## 5.65.1 Detailed Description

Holds list of waypoints and allows iteration over waypoints.

## 5.65.2 Member Function Documentation

### 5.65.2.1 Node CaveExploration.WaypointManager.GetCurrentWaypoint ( )

Gets the current waypoint.

**Returns**

The current waypoint.

### 5.65.2.2 Vector2 CaveExploration.WaypointManager.GetNextPosition ( Vector2 *currentPosition* )

Gets the next position that character should move towards.

**Returns**

The next position.

**Parameters**

| | |
|---|---|
| *currentPosition* | Current position. |

### 5.65.2.3 Vector2 CaveExploration.WaypointManager.GetNextReactivePosition ( Vector2 *currentPosition* )

Gets the next reactive position. The next position within the players line of sight (LOS) is returned. This iterates from the current waypoint to the next 5 waypoints and returns the last waypoint in the characters LOS.

**Returns**

The next reactive position.

**Parameters**

| | |
|---|---|
| *currentPosition* | Current position. |

#### 5.65.2.4 bool CaveExploration.WaypointManager.HasReachedCurrentWaypoint ( Vector2 *characterPosition* )

Determines whether this object has reached current waypoint.

**Returns**

`true` if this instance has reached the current waypoint; otherwise, `false`.

**Parameters**

| | |
|---|---|
| *characterPosition* | Characters current position. |

#### 5.65.2.5 bool CaveExploration.WaypointManager.Initialised ( )

Gets wether the waypoint manager has been initialised.

#### 5.65.2.6 void CaveExploration.WaypointManager.InitialiseWaypointsFromNodes ( List< Node > *path* )

Initialises the internal waypoints from a list of nodes.

**Parameters**

| | |
|---|---|
| *path* | Path. |

### 5.65.3 Member Data Documentation

#### 5.65.3.1 bool CaveExploration.WaypointManager.IsLooped = false

If not looped will end at last wapoint

#### 5.65.3.2 float CaveExploration.WaypointManager.WaypointProximity = 0.1f

When entity is within this distance to waypoint it will be registered as visited

#### 5.65.3.3 List<Node> CaveExploration.WaypointManager.Waypoints = new List<Node> ()

List of waypoint objects - initialised in InitiailiseWayPoints

### 5.65.4 Property Documentation

#### 5.65.4.1 bool CaveExploration.WaypointManager.IsComplete [get], [set]

Gets or sets a value indicating whether this instance is complete.

`true` if this instance is complete; otherwise, `false`.

The documentation for this class was generated from the following file:

- WaypointManager.cs

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