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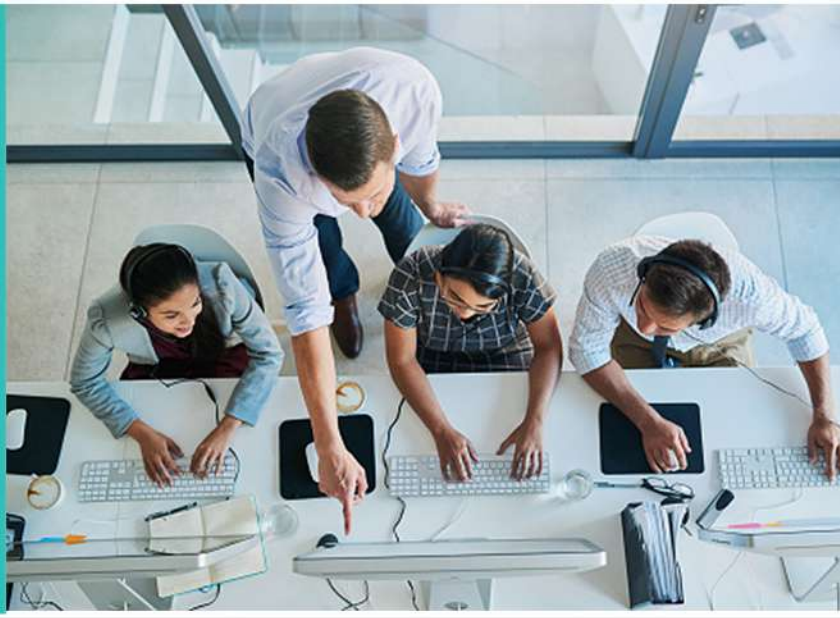


Game Development Using Buildbox

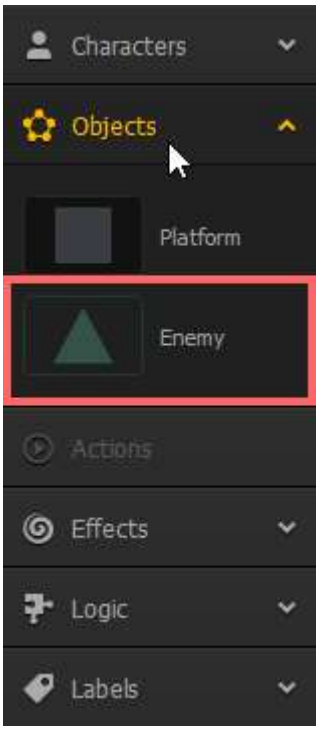
Object Designing

OBJECT DESIGNING

4.1 Role of an Object in Gaming:

Objects are non-living things that improve or change the gameplay. This could include items like a barrel that the character jumps over, a flag the character must touch at the end of a race or the barriers that keep two fighters from coming out of a wrestling ring. These are such an important part of the game that they cannot be overlooked.

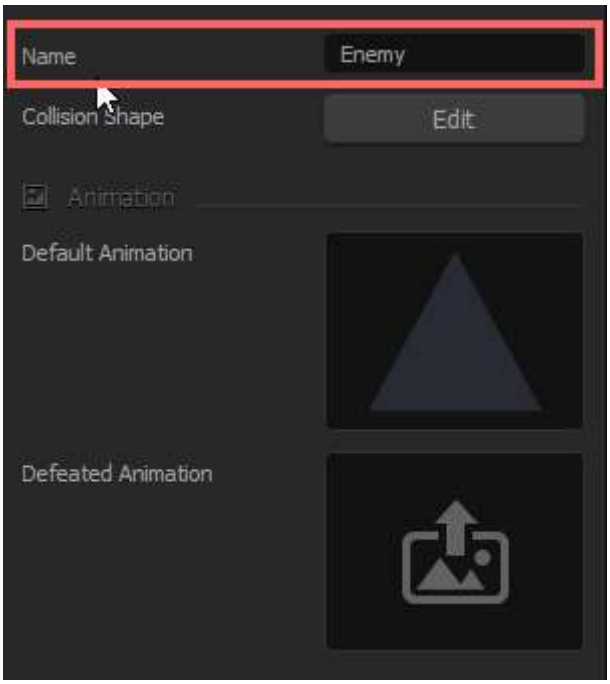
4.2 Object Designing:



4.1 Assets panel

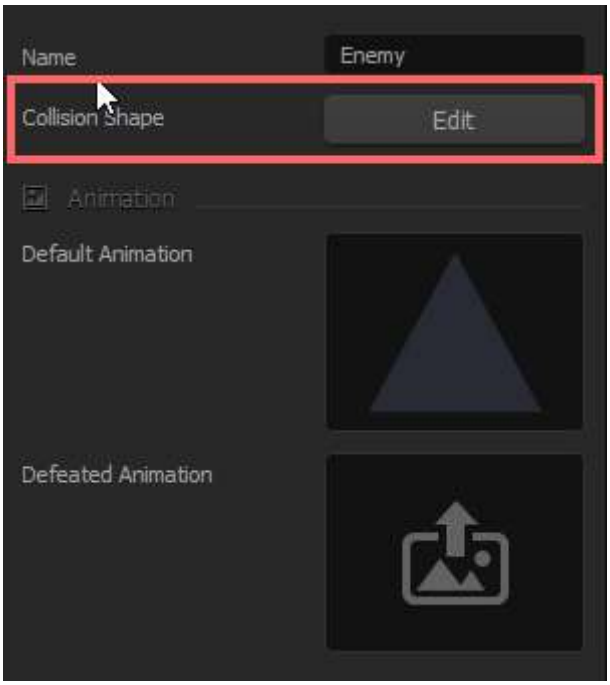
To edit the object, click on it in the asset bar, and you will see the options on the right, as you can see in the screenshot.

- **Name:** Just like in Character Asset, the name is not something that will appear in the game, not something that the end user will see. So just name your object easy for you to identify it by.



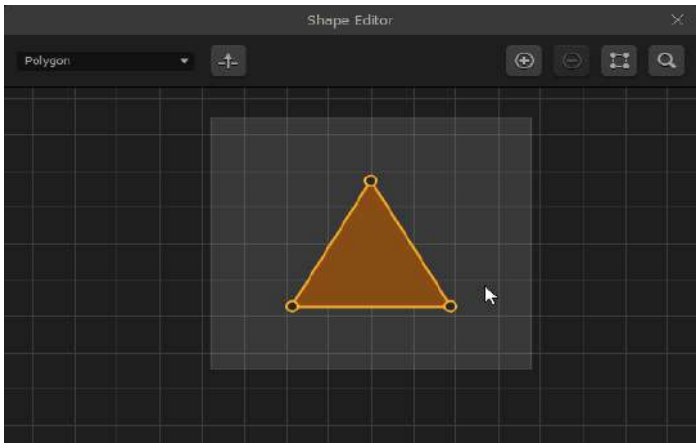
4.2 Options panel

- **Collision Shape:** Next we have the Collision Shape. Here we can edit the hit zone for this particular object.



4.3 Options Panel

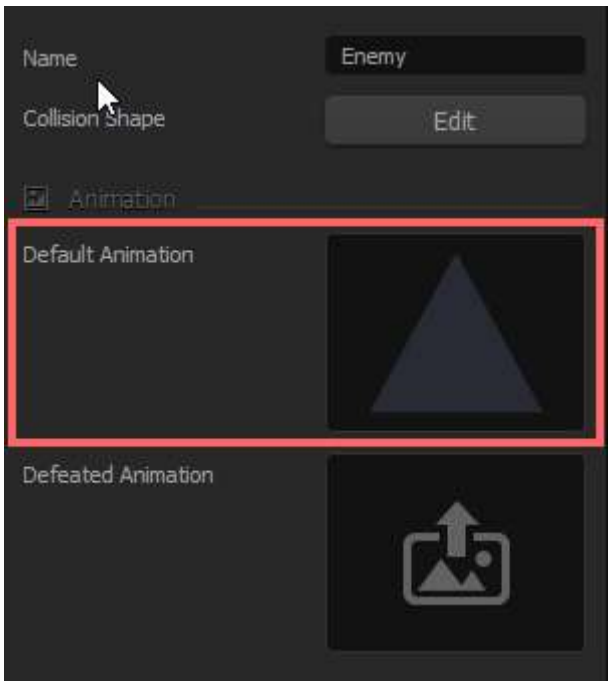
Once we click the edit button, it will launch the Shape Editor window. At the moment it is automatically set to have the shape of our enemy.



4.4 Shape Editor

4.3 Object Animations:

- **Default Animations:** Next we have the Default Animation window, this is where you will drag and drop an image or animation for your object.

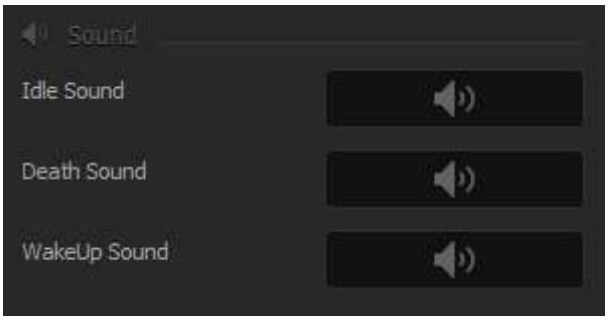


4.5 Options Panel

- **Defeated Animation:** Shown when object dies.

Sound:

You can drag any mp3 for the below option to make your game more interesting. The idle sound is the sound that plays while the enemy is on screen; the death sound is the sound that will play when the object is defeated. And then the wake up sound which is the sound that plays when the object first enters the screen or first activated in the game.

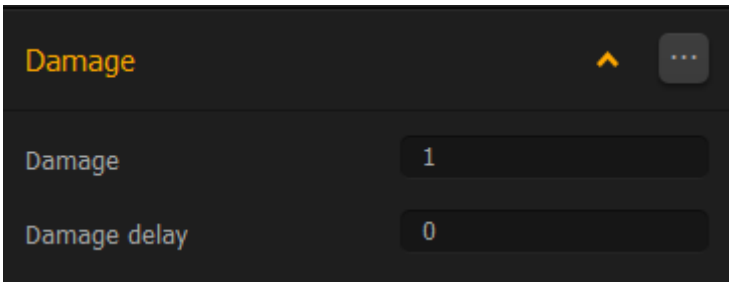


4.6 Sound Options Panel

4.4 Object Custom Components:

At the bottom of the properties section, is a button – [+ Add Component]. There are several options. Characters also have Components, but with a different set of options. Note: there are a different set of custom components you can add to an Object Instance.

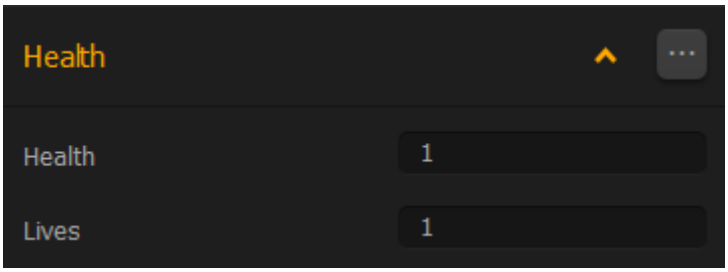
Damage:



4.7 Damage Options Panel

- **Damage:** Amount of damage inflicted on another object.
- **Damage Delay:** How long till the above damage is inflicted.

Health:

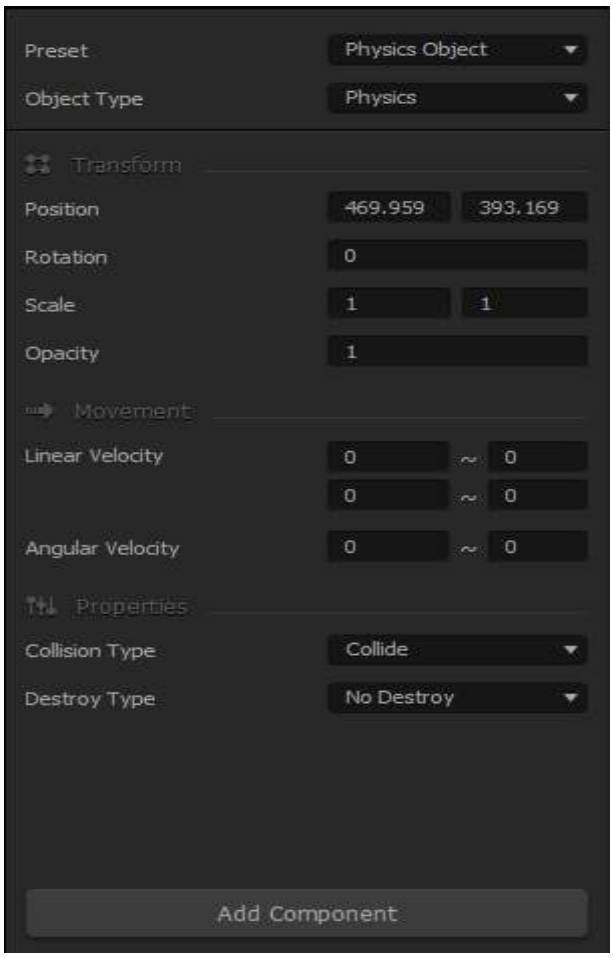


4.8 Health Options panel

- **Health:** The amount of health this character has to lose before dying.
- **Lives:** How many times this character has to lose before dying completely.

4.5 Object Instances or Sub-objects:

So now you have defined your objects, you may be wondering where most of the settings are, and how to have different versions of the same object. Sub-Objects are where we do this. You create a sub-object by clicking and dragging an object from the object bar on the left, onto the scene. Just put the object wherever you want it in the scene. Click on your object to select it, and look to the options bar on the right. Now there are various settings that really only apply to different object types. A very fast way to set most of the properties you would want for particularly object types is the very first field:



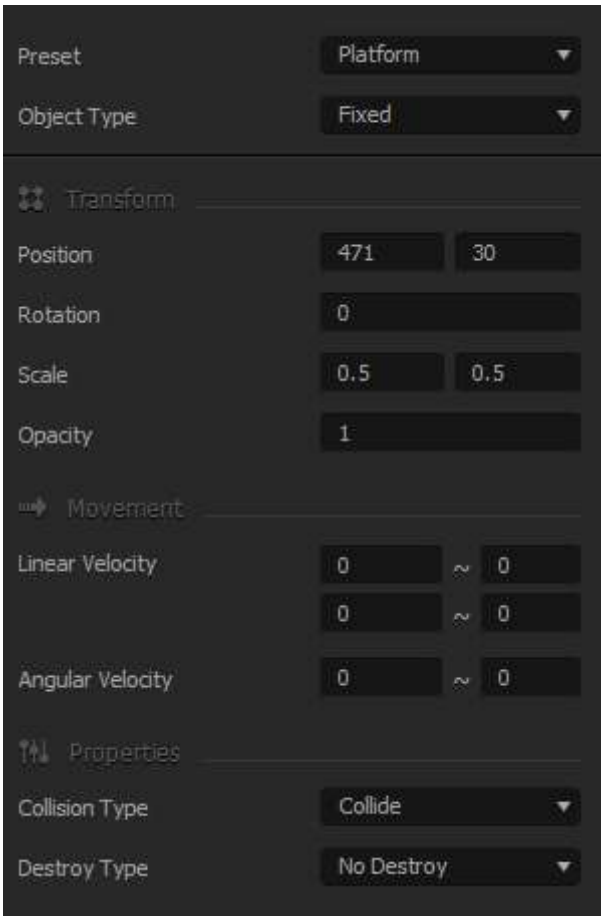
4.9 Object Options Panel

Preset: List of standard object types. These are a quick base, only. Once you select your preset, you can change all the settings – nothing restricts you.

- **Platform:** This is a non moving object that is often used as a platform for the character or any other objects to walk on or stand on. Here, in settings we observe the preset and object type.

  Preset: Platform

  Object Type: Fixed

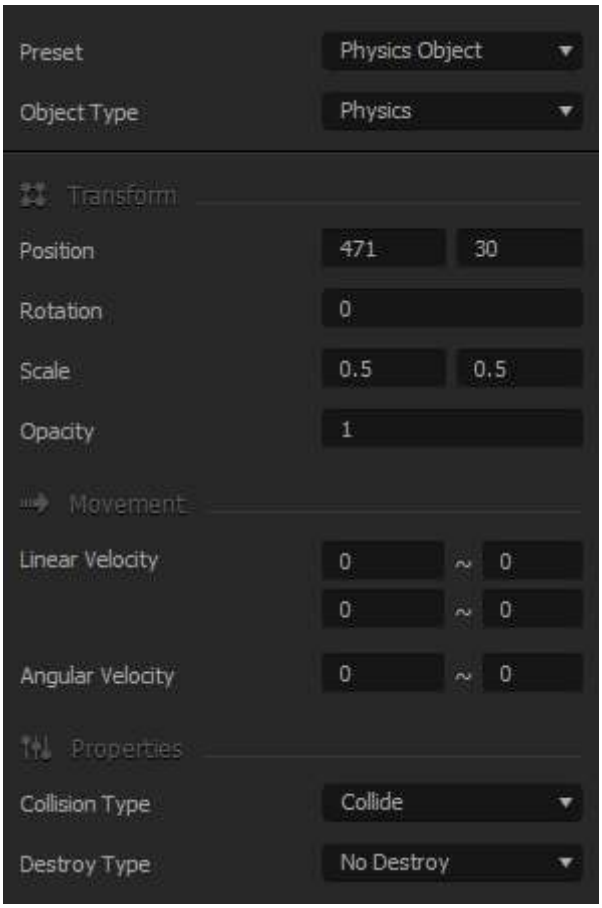


4.10 Platform Options Panel

- **Physics Object:** This is for an object that you want to obey the laws of game physics. It will move around, bounce, etc and respond to forces acting on it. Here, in settings we observe the preset and object type.

  Preset: Physics Object

  Object Type: Physics



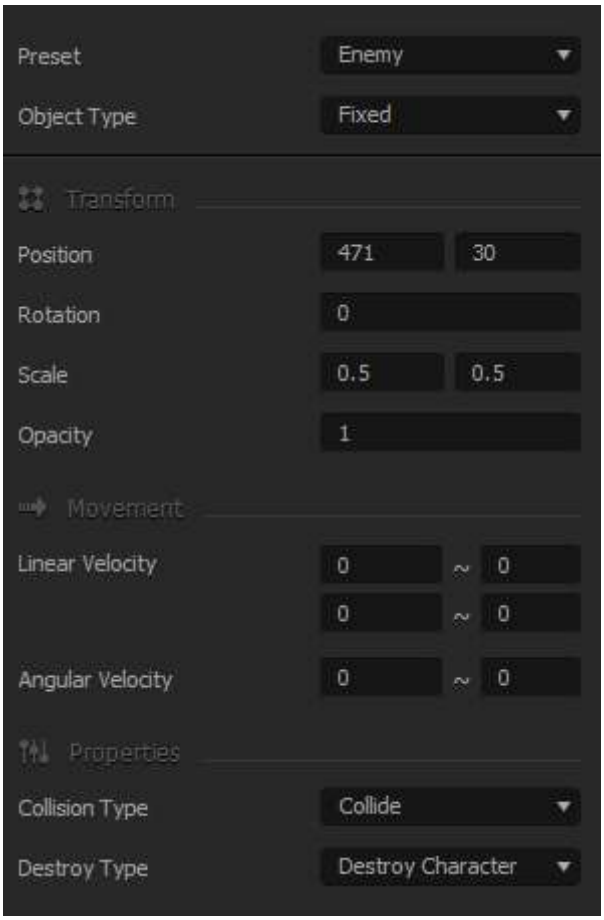
4.11 Physics Options panel

- **Enemy:** This is an object that will kill the character on contact, and can be killed by attacking it. Here, in settings we observe the preset and object type and some other options:

  Preset: Enemy

  Object Type: Fixed

  Destroy Type: Destroy Character, will damage the player Character on contact, only. Destruction of objects collided with can apparently be avoided by giving it a high health value.



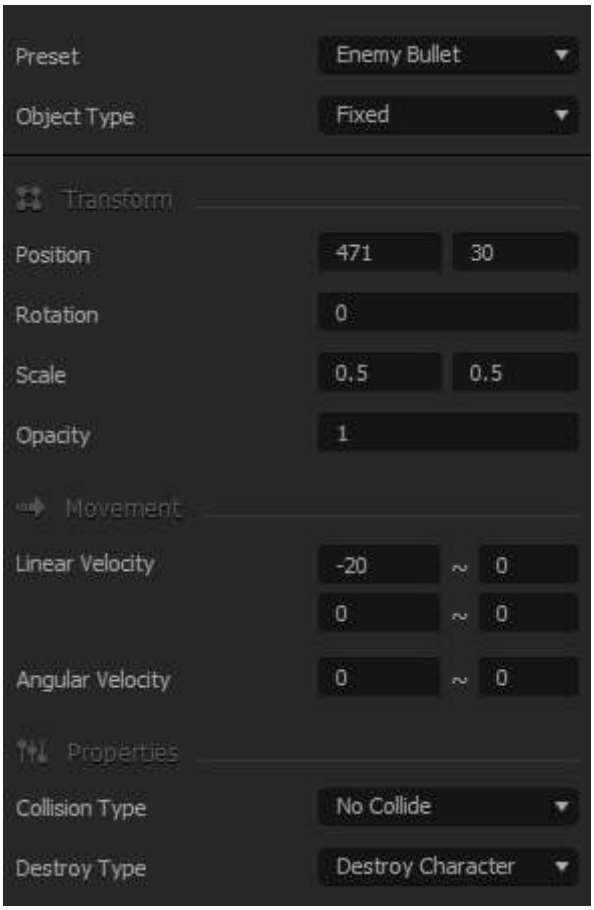
4.12 Enemy Options panel

- **Enemy Bullet:** Similar to the above, this will spawn copies of itself at intervals. Here, in settings we observe the preset and object type and some other options:

  Preset: Enemy

  Object Type: Fixed

  Destroy Type: Destroy Character



4.13 Enemy Bullet Options Panel

- **Character Bullet:** This will spawn copies of itself at intervals. All copies produced will kill the character on contact. Here, in settings we observe the preset and object type and some other options:

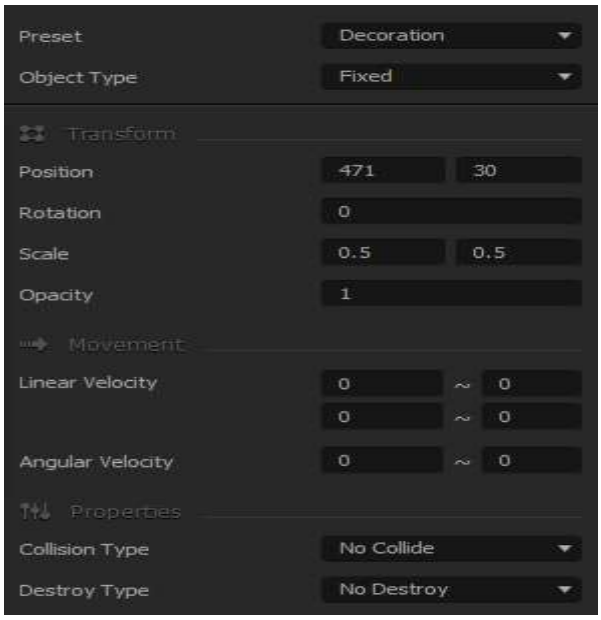
  Preset: Enemy

  Object Type: Fixed

  Destroy Type: Destroy Enemy

4.14 Character Bullet options panel

- **Decoration:** This is used for scenery. It affects nothing, is affected by nothing. Its job is to look good.



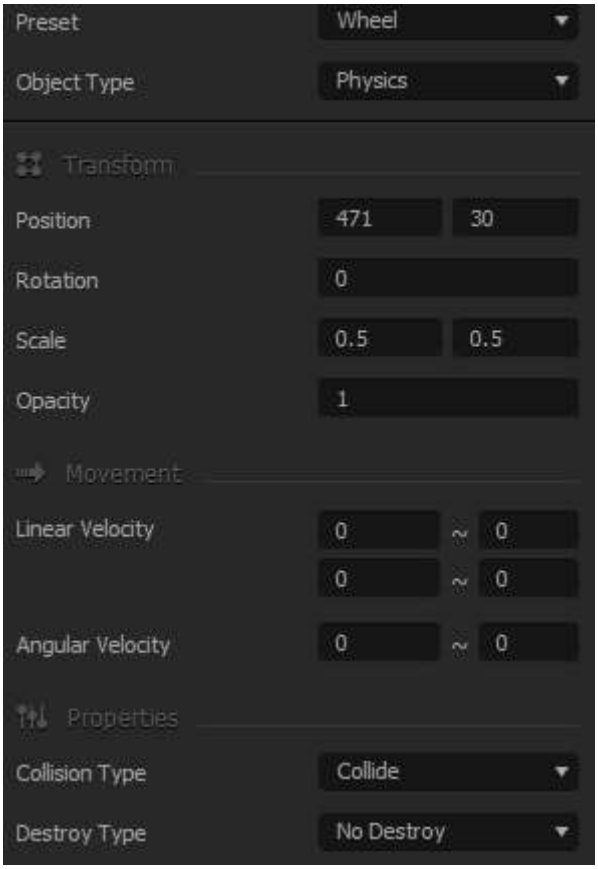
4.15 Decoration Options panel

- **Wheel:** As it sounds. Used for wheels including wheels attached to the character. Here, in settings we observe the preset and object type and some other options:

Preset: Wheel

Object Type: Physics

Destroy Type: No Destroy



4.16 Wheel Options panel

Common Properties of all Type of Objects: How the object moves

- **Fixed:** Objects will not be affected by forces of gravity or other objects working upon it.
- **Physics:** Objects will be affected by gravity and other external forces.

Transform:

- **Position(x,y):** Object position in scene.
- **Rotation:** Rotation in degrees clockwise. 0 is not rotated at all.
- **Scale(x,y):** How much bigger or smaller in either direction the sub-object is compared to the base object. 1 is normal size.
- **Opacity:** How transparent the object is.

Movement:

- **Linear Velocity(x,y):** Object starting speed/direction. 0 is not moving at all. Random factor: An amount between 0 and this value will be added to the basic value.

- **Angular Velocity & Random factor:** Value in degrees per second that the object will rotate about its pivot point. Positive values are clockwise. Random factor is an amount between 0 and this value will be added to the basic value.

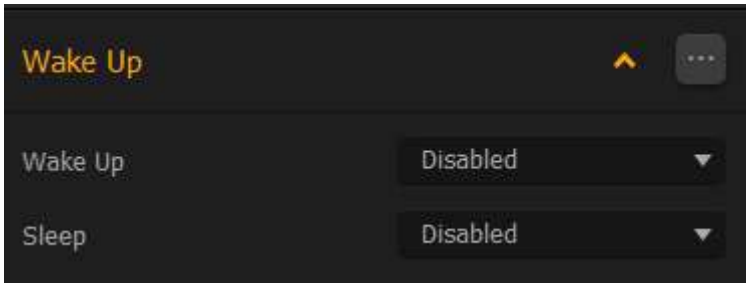
Properties:

- **Collision Type:**
  - **No Collide:** object will ever collide with anything.
  - **Collide:** object will collide with other objects
- **Destroy Type:** This has been split from Collision Type for greater flexibility. Determines if the Object's Damage value will be subtracted from an object's Health value on contact (both those values are set on the parent Object)
  1. **No Destroy:** Nothing will contact when this object's collision box touches any others.
  2. **Destroy Character:** Will damage the player Character on contact, only. Destruction of objects collided with can apparently be avoided by giving it a high health value.
  3. **Destroy Enemy:** Will damage Enemy objects on contact, only. Destruction of objects collided with can apparently be avoided by giving it a high health value.
  4. **Destroy All:** Will damage any enemy or player Character. Destruction of objects collided with can apparently be avoided by giving it a high health value.

4.6 Sub- Object Custom Components:

To access these, press the [+ Add Component] button at the bottom of the screen.

1. Wakeup:



4.17 Wakeup Settings

Wake Up:

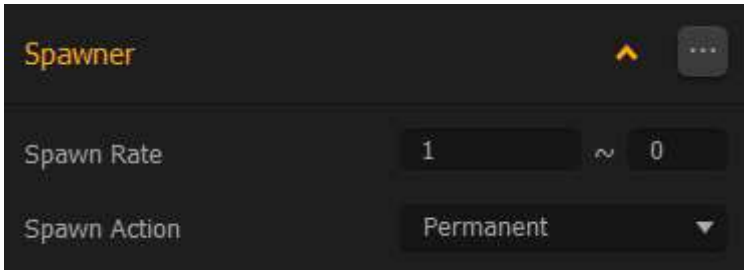
- Disabled: Object will start awake.
- Distance Based: Object will wake up when the character is the specified pixels away from the centre point.

- Collision Based: Object will wake up when the character's collision box collides with it.
- Wakeup Distance: Distance in pixels (shows if Distance Based)

Sleep:

- Disabled: Object will never sleep
- Distance Based: Object will sleep after moving the character is the specified pixels.
- Sleep Distance: Distance in pixels (shows if Distance based).

2. Spawner:



4.18 Spawner Options

Spawn Rate: Time in seconds between object spawning.

Spawn Action:

- Permanent: Always spawn.
- Shooting: Spawn when the shoot button pressed.
- Single Shooting: As above but approximately only a single “bullet” on screen at any one time.
- Jumping: Spawn when the jump button pressed.