UseParentSpace for Spawners using Relative Position and Scale

This is a follow-on from UseParentSpace for Relative Object Positioning and Scaling.

In the same way that child Objects can use the `UseParentSpace` property to operate within a Parent's relative position and scale... spawners can benefit from the same functionality.

Setting up a new project

To help you work through this tutorial, first create a new blank project using the init script.

Objects and Spawners

In general when specifying what object to spawn, the object is given co-ordinates in world space like:

```
  Position = (35, 100, 0.0)
```

With relative positioning, the object that is spawned will be positioned relative to the Parent Object's Size (The Parent Object is one that has a spawner attached).

That can be confusing. Let's view it as a tree:

- Main Object
  - Spawner connected
    - Object to Spawn

It is the Object to Spawn, that will use the `UseParentSpace` property.

But before we get there, let's set up a spawner in the usual way using world coordinates.

Making it rain

Start by making a rain cloud that spawns raindrops. Here's a cloud for you to use:



Define a `Cloud` object in config:

```
[Cloud]
Spawner  = RainSpawner
Pivot    = center
Graphic  = @
Texture  = cloud.png
Position = (0.0, -200.0, -0.1)
```

Then change the `Object` to `Cloud` in the create line in the code:

```
orxObject_CreateFromConfig("Cloud");
```

This will create a cloud object a little up from the centre of the screen. We haven't provided a spawner yet so it doesn't do anything. So define both the spawner and object to spawn with:

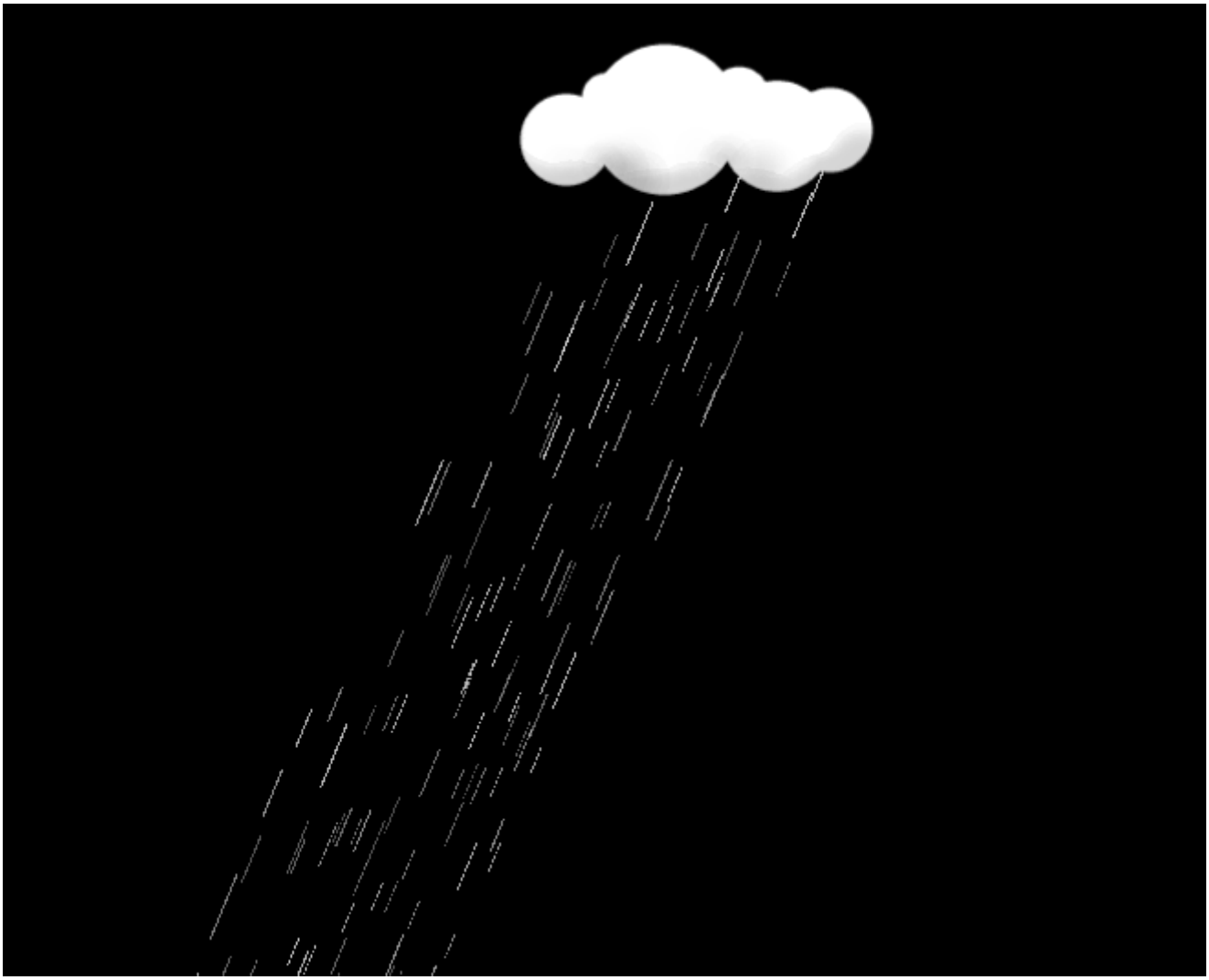
```
[RainSpawner]
Object           = RainDrop
TotalObject      = 0
ActiveObject     = 1000
WaveSize         = 5
WaveDelay        = 0.016 ~ 0.03
ObjectSpeed      = (0, 800)
Rotation         = 22.5
UseRelativeSpeed = true

[RainDrop]
Graphic        = @
Texture        = pixel
Size           = (1,20) ~ (1,40)
Alpha          = 0.3 ~ 0.8
Color          = (255,255,255)
Pivot          = top
AutoScroll     = both
DepthScale     = true
LifeTime       = 1.0
Smoothing      = true
Position       = (-50.0, 00.0, 0.0) ~ (90.0, 00.0, 0.5)
```

In the spawner config above, we're making `RainSpawner` spawn `RainDrop` objects, lots of them, in a fast down direction, but rotating the spawner by 22 degrees (plus using relative speed) to get a nice down-left direction for the rain.

For the `RainDrop` objects themselves, we vary their alpha transparency, stretched size and their starting position on screen between X = -50.0 to 90.0.

There is no image for the raindrops, we're just using a stretched pixel. That will do nicely.



Relative Spawner Positioning

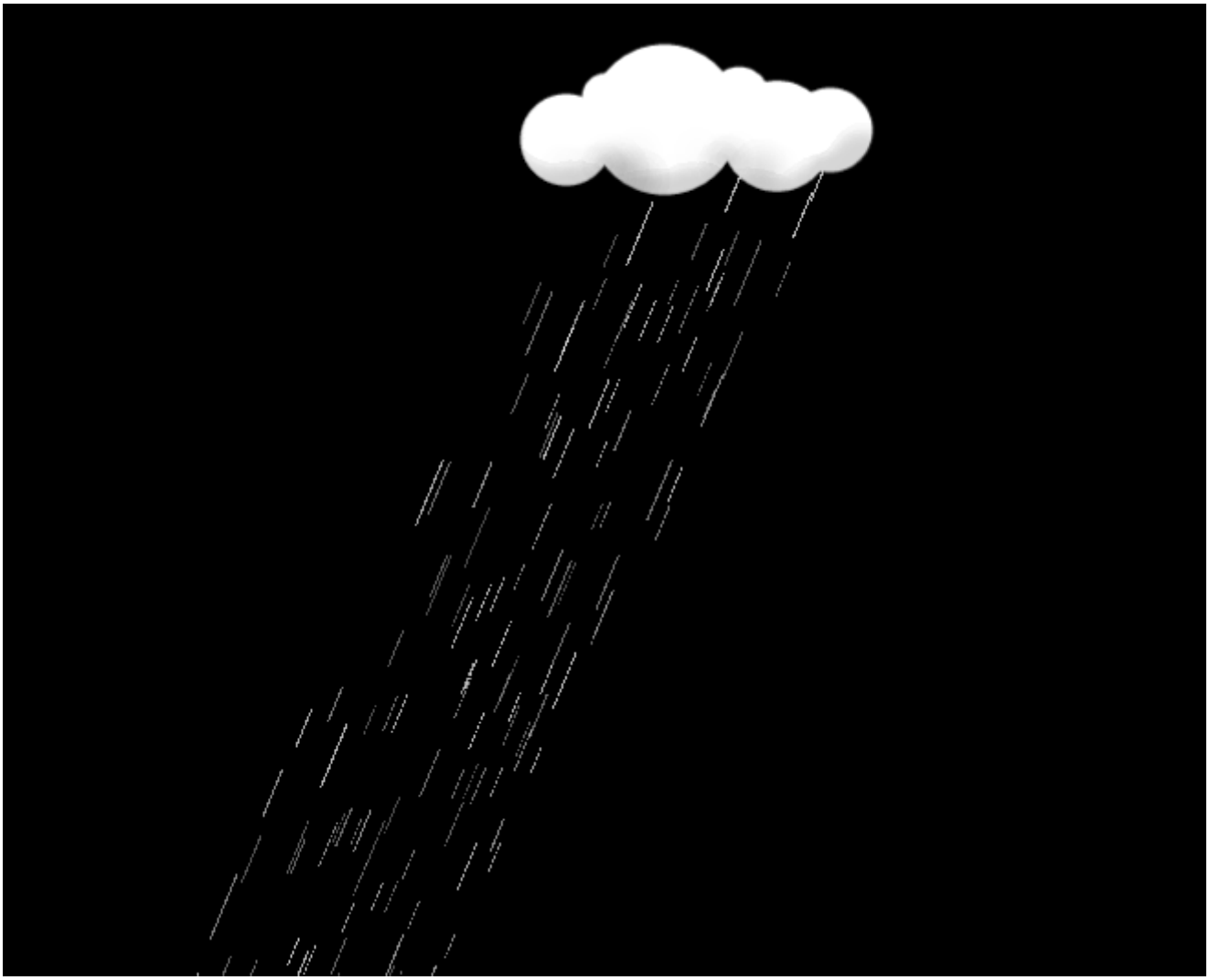
The last step is to convert the positioning to be relative to the Cloud's size. This means changing the `Position` property of the `RainDrop` and setting `UseParentSpace` to position:

```
[RainDrop]
Graphic         = @
Texture         = pixel
Scale           = (1,20) ~ (1,40)
Alpha           = 0.3 ~ 0.8
Color           = (255,255,255)
Pivot           = top
AutoScroll      = both
DepthScale      = true
LifeTime        = 1.0
Smoothing       = true
Rotation        = 22.5
Position        = (-0.3, 0.0, 0.0) ~ (0.45, 0.0, 0.5)
UseParentSpace = position
```

Because the pivot of the `Cloud` is centred, the coordinate range is (-0.5, -0.5) to (0.5, 0.5). I've

adjusted the X positions to between -0.3 and 0.45 to bring the positions in a little to work nicer with the cloud itself.

The result should be the same:



Further information

1. Ordered List ItemUseParentSpace for Relative Object Positioning and Scaling
2. Object Configuration

From:
https://www.orx-project.org/wiki/ - **Orx Learning**

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https://www.orx-project.org/wiki/en/tutorials/spawners/useparentspace_for_spawners

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