The flyweight design pattern allows you to reuse memory spaces in an application when you have lots of objects that are almost identical in nature. For example, if you are writing a game for a Smartphone where the amount of memory is very limited and you need to show many aliens that are identical in shape, you can have only one place that holds the shape of the alien instead of keeping each identical shape in the precious memory.

In the flyweight pattern, there is the concept of Intrinsic and Extrinsic state. Intrinsic states are things that are constant and are stored in the memory. Extrinsic states are things that are not constant and need to be calculated on the fly, and are therefore not stored in the memory.

For example, in the game that we would like to create, the shapes of the aliens are all the same, but their color will change based on how mad each are. The shapes of the aliens will be Intrinsic, and the color of the alien will be Extrinsic.