

## Combat System:

### Description:

This system is built to create attack behaviors and powerups easier and more efficient and create characters with whatever attack behaviors and powerup combinations as we want. Also, it is easy to assign each attack behavior and powerup to each character (Specially for designers) by using *ScriptableObject* and *[ScriptableObjectDropdown]* editor attribute which I've built before.

### How does it work?

There are 3 types of attack behavior. Normal, Complex and Powerup.

Each Powerup can have either Powerup attack behavior or none.

For each character you should assign Normal, Complex attack behaviors and Powerup (In powerup you can determine its attack behavior).

Combat stuff is done in Combat state machine. Attacking executes in *Attack* state and somehow it is based on chain of responsibilities pattern. According to *BehaviorCondition* of each attack behavior, one attack behavior is executed. If condition for executing one attack behavior type is not met, it returns Fail and try to check next attack behavior for executing until one of them returns Success.

Each attack has *BehaviorCondition* property and *Behave* and *EndBehavior* functions.

So, for instance, we have Bunny character, it has *MeleeAttackBehavior*, *ForwardMeleeAttackBehavior* and *FlyOverPowerup* and *FlyOverAttackBehavior* (They are selected in dropdown menu on the character prefab). So, if you click on B button for attacking if you are on the ground (it is determined in *MeleeAttackBehavior* condition), *MeleeAttackBehavior* is executed but if the character is on air (It is determined in *ForwardMeleeAttackBehavior* condition), *ForwardMeleeAttackBehavior* is executed. If you click on N button, *FlyOverPowerup* is activated and according to this condition *FlyOverAttackBehavior* is executed.

## How to use it?

All attack behaviors and powerup should be *ScriptableObject*.

So, for normal attack behavior, the class should inherit *ScriptableObject* and *INormalAttackBehavior*.

For complex attack, the class should inherit *ScriptableObject* and *IComplexAttackBehavior*.

For powerup, the class should inherit *ScriptableObject* and *IPowerup* (Don't forget to put reference to power up attack behavior if it has in powerup class).

For powerup attack behavior, the class inherit *ScriptableObject* and *IPowerupAttackBehavior*.