

The background features several abstract geometric shapes. A large, complex polyhedron with purple and blue faces is prominent on the right. Smaller shapes include a blue tetrahedron, a yellow tetrahedron, a red cube, and a yellow dodecahedron. The overall aesthetic is dark and technical, with a focus on 3D geometry.

GDC

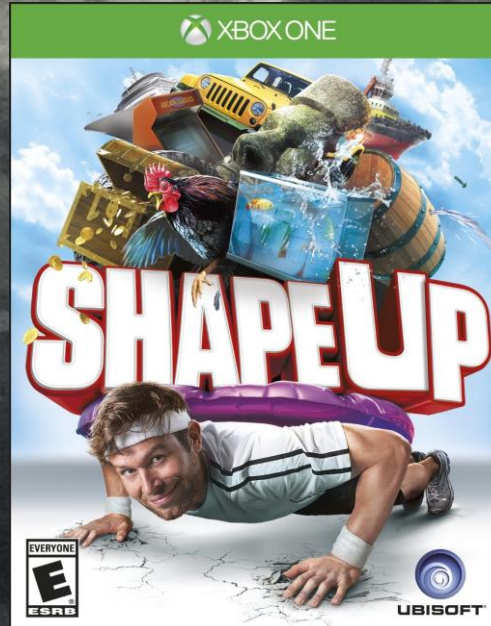
Modify Everything!

Data-driven Gameplay Effects on For Honor

Aurélie Le Chevalier

Aurélie Le Chevalier

Gameplay Programmer





Modifiers?

Modifiers

Campaign

Feats

Fighters



Gear

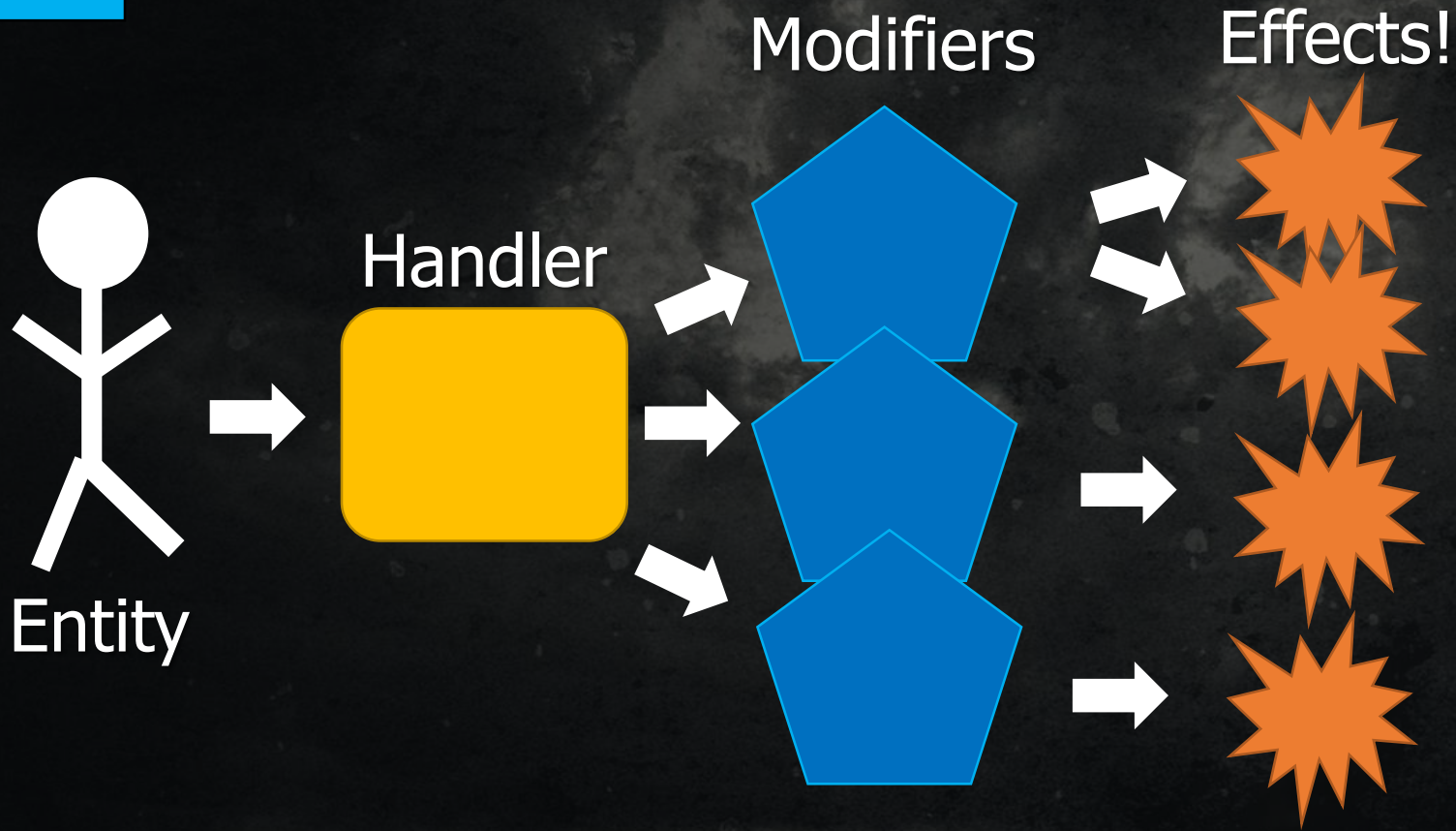
19 Gadwin Guard
Epic

- Throw distance
- Revenge mode attack
- Revenge gain by injury

Dismantle to get : +62

What is the
problem we
are trying to
solve?

Modifiers





Effect Categories

1. Modify Stats
2. Capabilities
3. Add tag
4. Remove Modifier
5. Create a new effect



Effects

1. Modify Stats



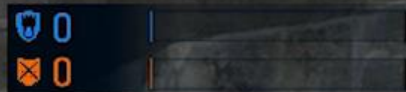
17:55



Quick Chat



2. Capabilities



18:45

=== MODIFIERS ===

 Quick Chat



3. Adding a tag





17:41



Quick Chat





4. Removing active Modifier

373
13

15:00

H.M.M.H.232-11

B
100
pts

Quick Chat



5. Creating a new effect



75
238

15:29

=== MODIFIERS ===

[1]Feat_301_HealOnBlock (Inactive)

Quick Chat

Context



Context

Pillars

- Duration
- Conditions

Context

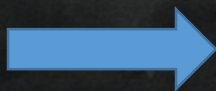
Effects

- Gameplay blocks



Context

Duration



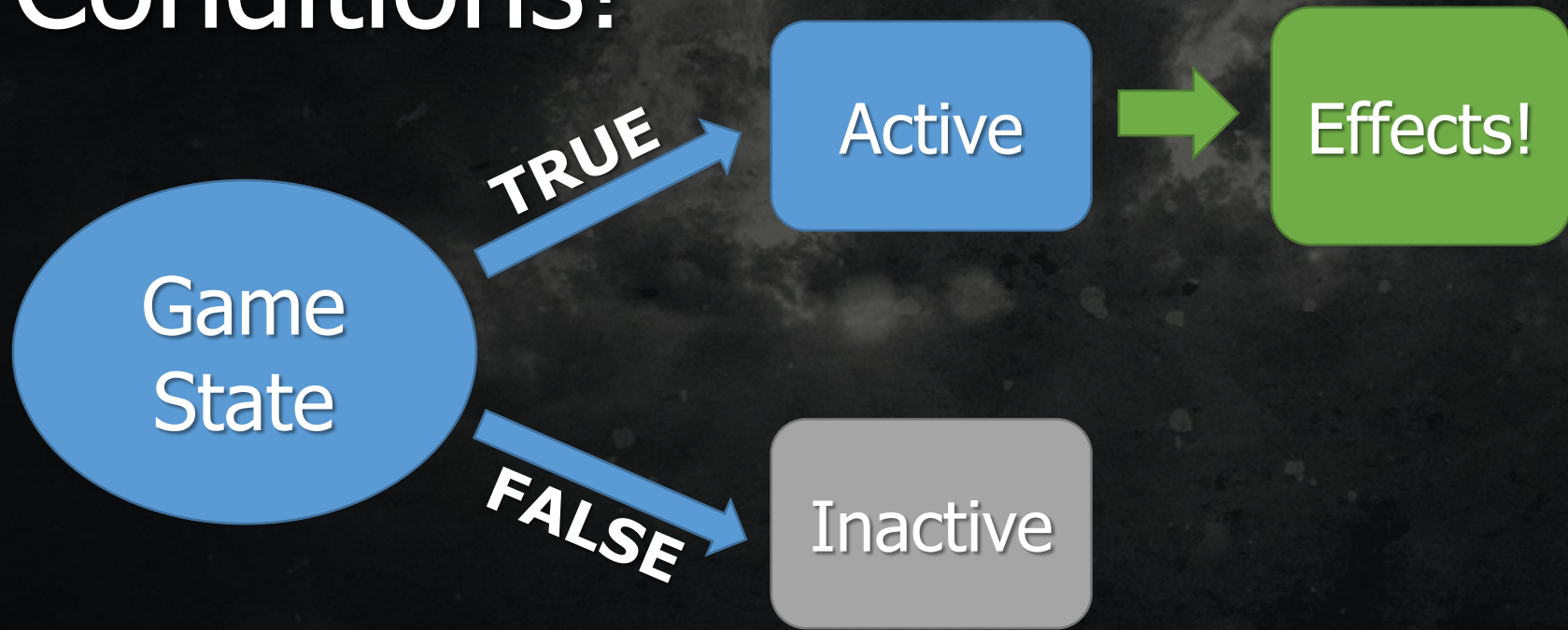
Heal 

For X seconds

Modifier

Context

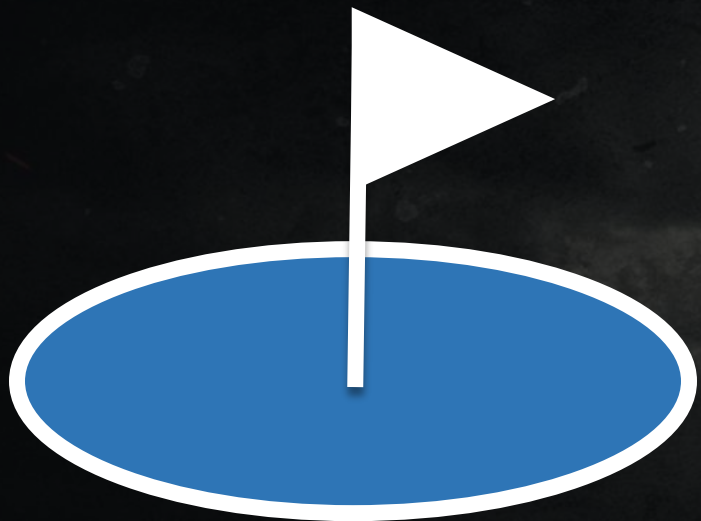
Conditions!



Combine Multiple Conditions

- AND
- OR
- NOT

Context



+1 pt/sec

IF

Captured
AND
Player in Zone

+2 pts/sec

Context

Action State
Condition





ROUND 3/5

2-0



01:25



Quick Chat

Context

Attack
Condition



0
0

19:15

=== MODIFIERS ===

[0]Feat301_PlayersLightAttacks (Inactive)

[2]Feat301_PlayersHeavyAttack (Inactive)

[3]Feat301_MinionsAndCaptains (Inactive)

Quick Chat



RS

B
C



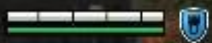
One Last Thing...



Last Thing

Effects on others



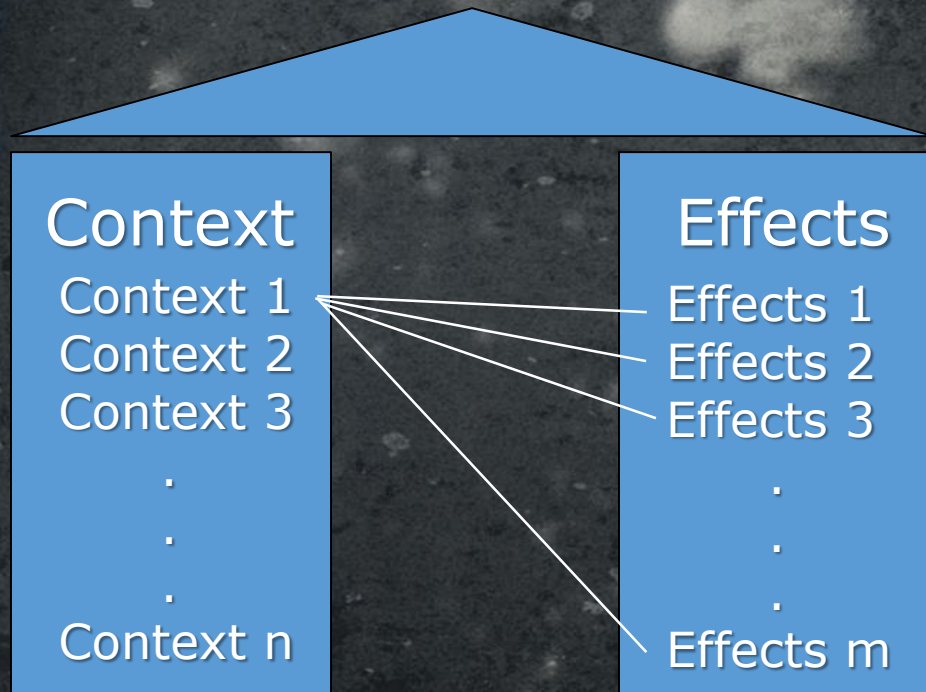


Production



Production

Versatility



Production

On Capture
Point

= Defender

+

Damage
Boost

+

Low Health

=

Last Stand

+

On Attack
Blocked

=

Chip
Damage

Production

Damage

Speed

Healing

VS

Damage when
low health

Damage when
bleeding

Damage
out of stamina

Speed in
dodge

Speed in
ladder

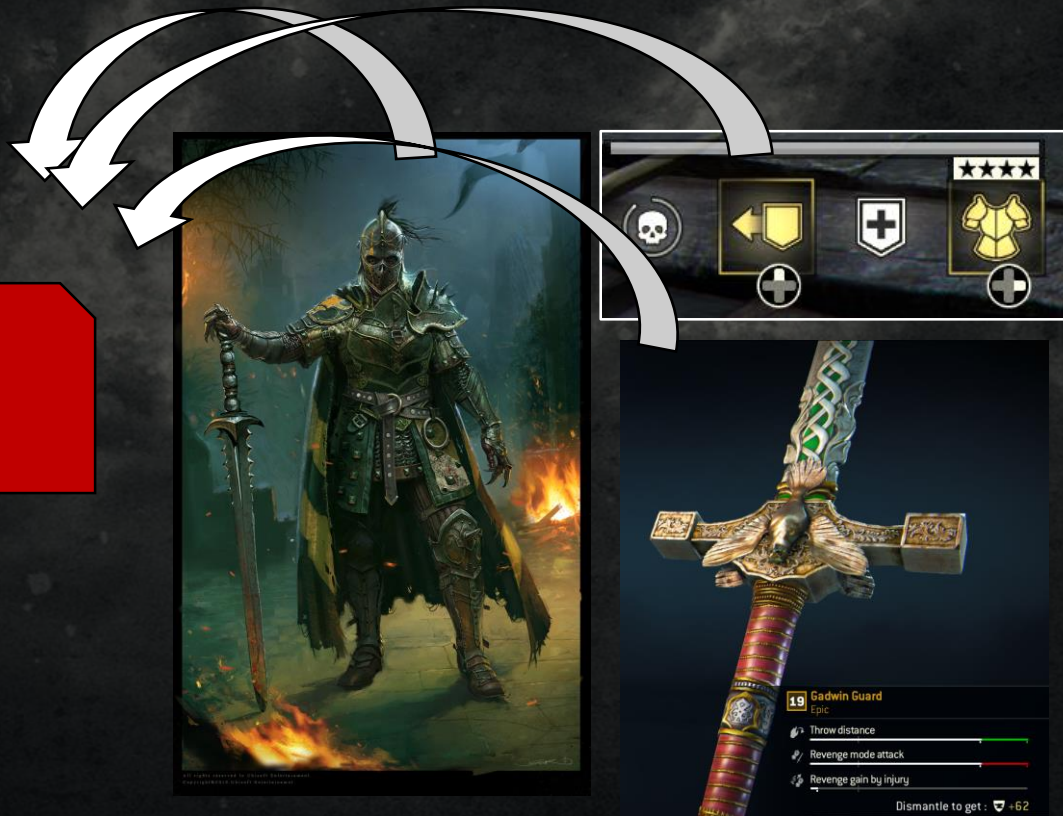
Speed when
out of stamina

Healing in
capture points

Healing after
revive

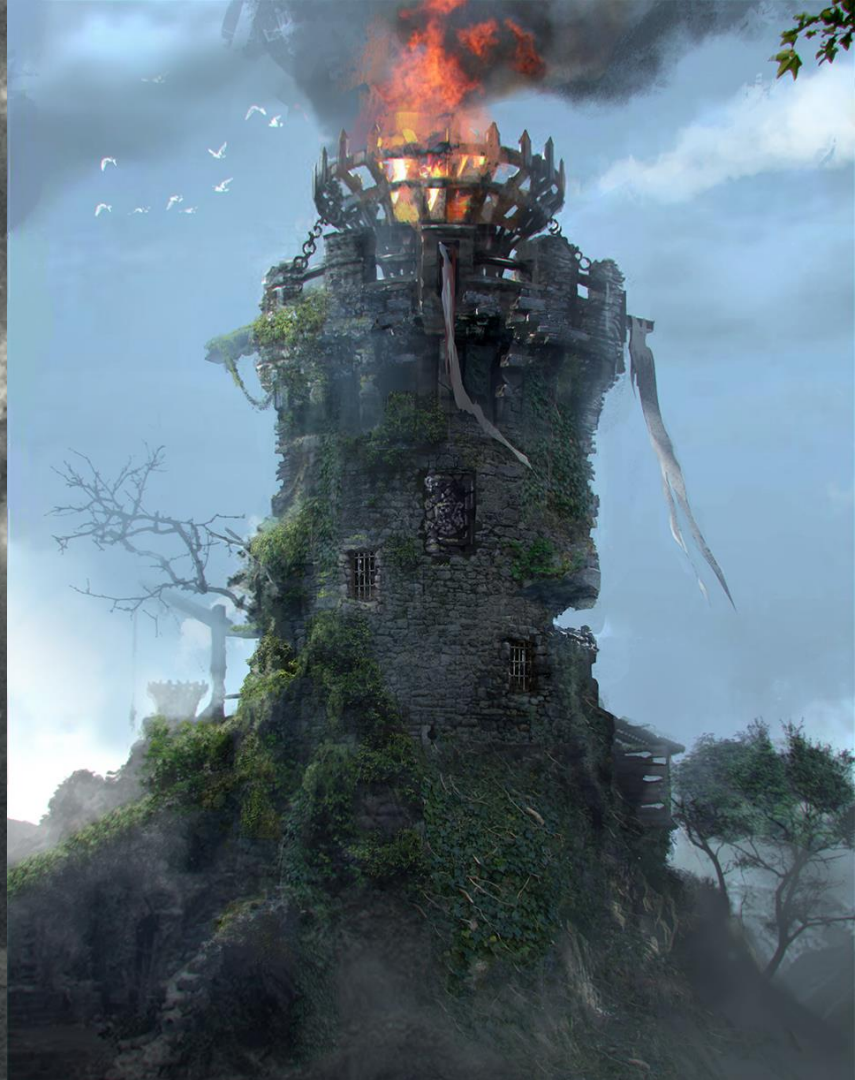
Healing in out
of combat

Production



Production

Easy Content Creation





Production

Designer autonomy

Production

Easy Iteration



Production

Scalability



Implementation

Data

Run-time



Implementation

Data

Origin



Implementation

Data

Campaign

Fighters

Feats



Gear

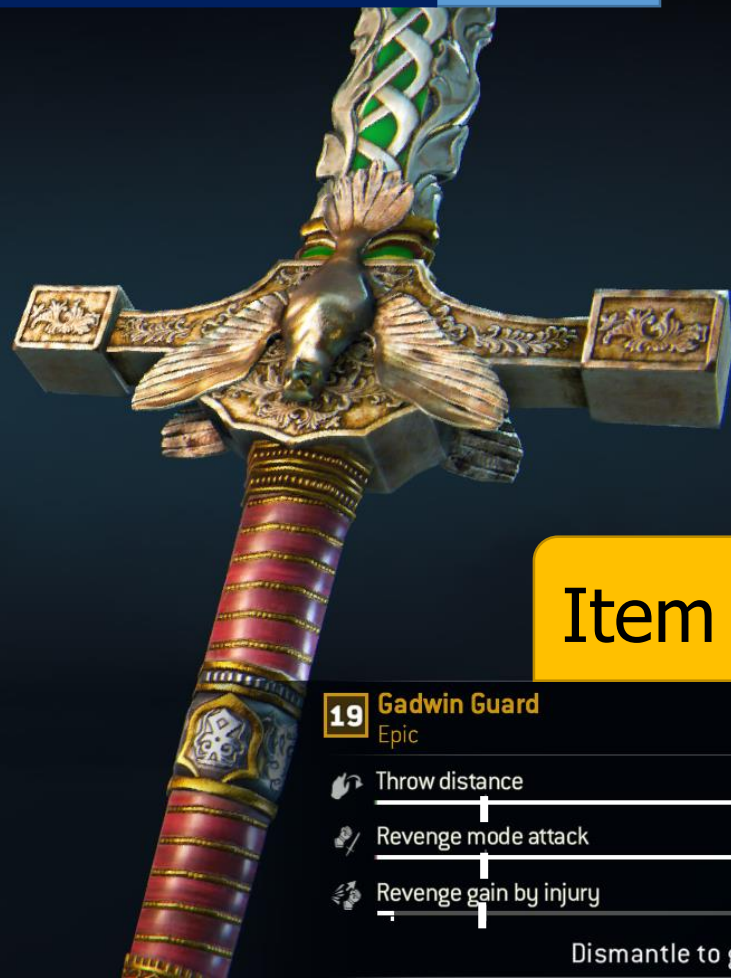
19 Gadwin Guard
Epic

Throw distance

Revenge mode attack

Revenge gain by injury

Dismantle to get :  +62



Item Pack

19

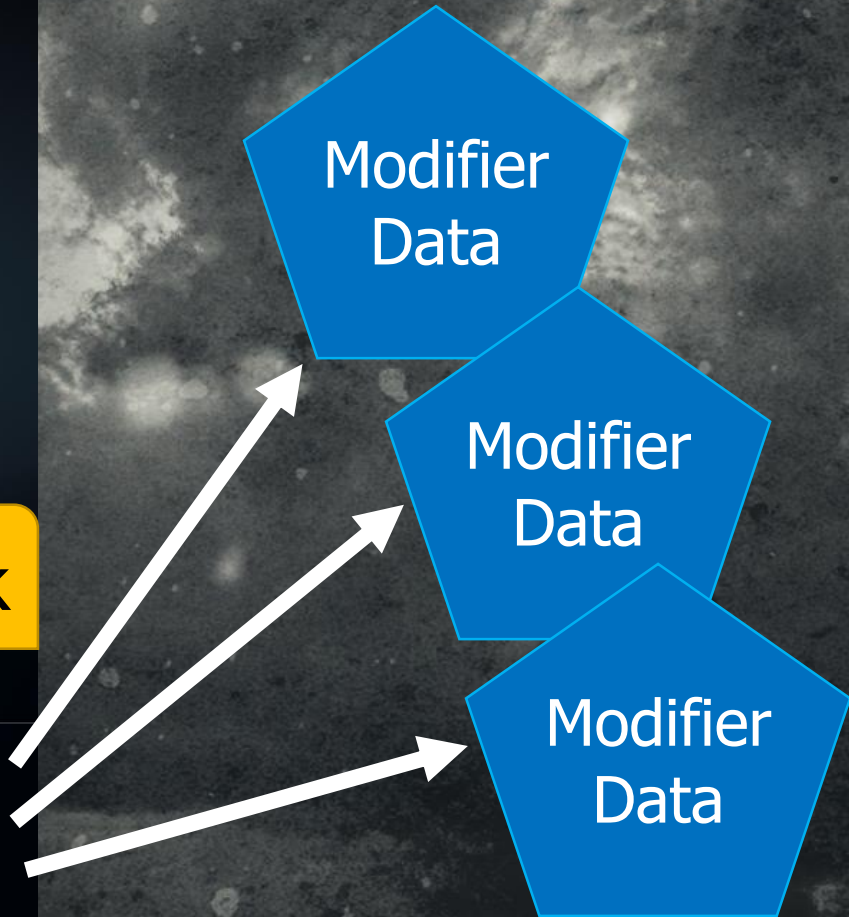
Gadwin Guard
Epic

Throw distance

Revenge mode attack

Revenge gain by injury

Dismantle to get : +62



Effects Setup

Enum

[-] Effects[0]	● Revive Other Speed -5.00%
[-] type	
Type	Revive Other Speed ▾
Computation Type	Multiplicative ▾
[-] Intensity	
Intensity Type	Fixed Value ▾
Value	-5

- Filter Items 🔍
- BattleMeter Hard Points Earned
 - BattleMeter Hard Points Given
 - Repulsion Size - DEPRECATED
 - Squad Weighth
 - NPC Attack Speed - DEPRECATED
 - Thrown distance
 - Feat Cooldown Speed
 - Max Balance
 - Down State Duration
 - Revive Duration
 - Revive Speed
 - Revive Health Regain
 - Revive Other Speed**
 - Revive Other Health Regain
 - Knockback Applied
 - Boost capture rate
 - Super State Duration
 - Revenge Meter Gain
 - Execution Health Gain
 - Boost Duration

Implementation

Run-time

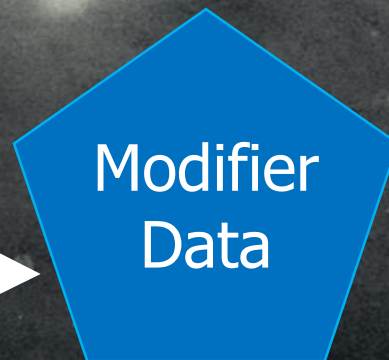
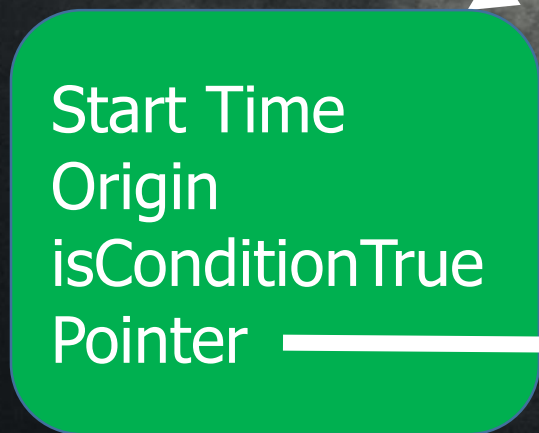


Handler

- Activate
- Remove
- Update



Entry



Code Queries



Example: Stun

UI::Update

```
if ( player has "Tag_Blinded" )  
    hidden = true;
```



Handler

for each



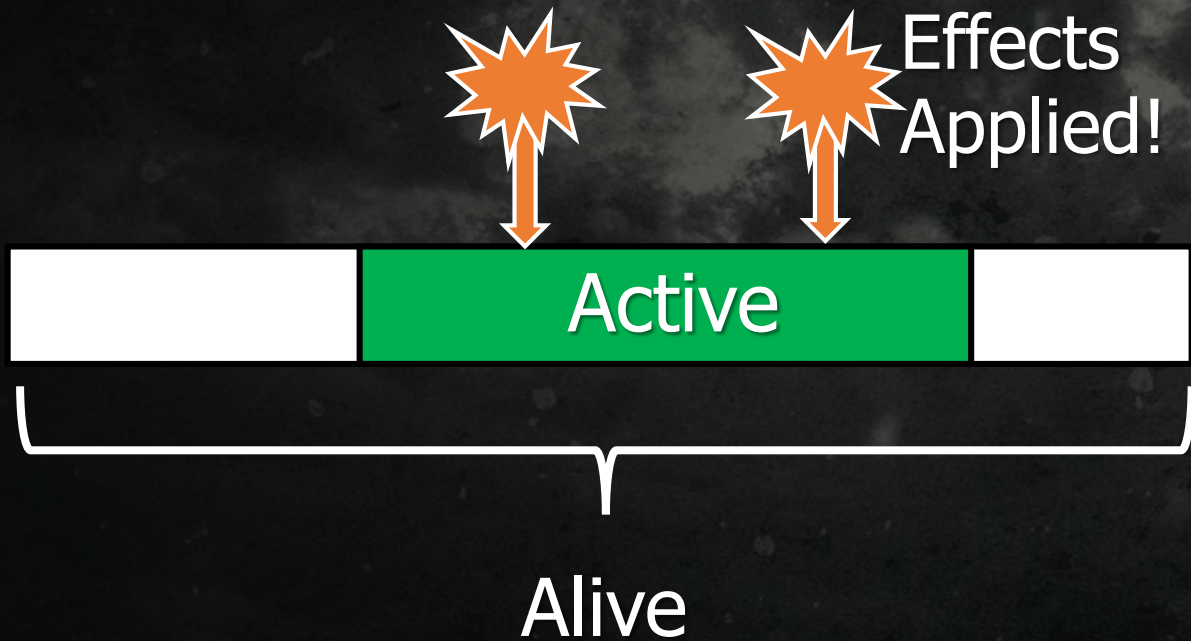
```
if ( entry has Effect "Tag_Blinded" )  
    return true;
```

Implementation Run-time

Feedback!



Feedback hooks



66
103

18:23

Enemy Team CAPTURED the Front B + 100 pts

Quick Chat



Implementation Run-time

Debug Display



Implementation

Run-time

Light Debug Display



Player_Local_0

Bot_Local_16

Bot_Local_17

Bot_Local_18

Bot_Local_19

Bot_Local_20

Bot_Local_21

Bot_Local_22

DETAILED

=== MODIFIERS ===

[0]M10a_DebuffResistance_Pos (Origin_Gear - Core)

GearStatusEffect_DebuffReduction_Pos - Status Effect Lvl 9

Attribute Tweaker: Debuff Duration -28.63%

| Status Effect Level Overrides: 9

[10]M04a_RevengeInjury_Pos (Origin_Gear - Core)

GearStatusEffect_RevengeGainDefense_Pos - Status Effect Lvl 9

Attribute Tweaker: Revenge Meter Gain +21.47%

| Status Effect Level Overrides: 9

[11]M15b_Condition_ThrowDistance_Neg (Inactive) (Origin_Gear - Core)

Condition: Owner = Source AND Ability Description Category = Guardbreak Attack AND Ability Result Category = Hit

| Status Effect Level Overrides: 9

[14]Modifier_Feat_UniqueVikingHybrid201_KillBuff (Inactive) (Origin_Feat - External - Non Stackable)

Condition: Owner = Source AND Ability Target Type = Player AND Ability Target Fight Attitude = Hostile AND Ability Target

[16]Modifier_Feat_UniqueVikingHybrid201_Apply (8.9 sec) (Origin_Feat - External - Non Stackable)

ActorStatusEffect_DamageTaken_Decrease - Status Effect Lvl 9

Attribute Tweaker: Damage taken -50.00%

ActorStatusEffect_DamageDealt_Increase - Status Effect Lvl 9

Attribute Tweaker: Damage dealt +50.00%

[1]M08b_ExhaustionDuration_Neg (Inactive) (Origin_Gear - Core)

Condition: Actor Type = Self AND Out Of Balance State = Active

GearStatusEffect_OutOfStamRegen_Neg - Status Effect Lvl 9

Attribute Tweaker: Balance regen -12.12%

| Status Effect Level Overrides: 9

[2]M11a_ExecutionRegen_Pos (Origin_Gear - Core)

GearStatusEffect_ExecutionRegen_Pos - Status Effect Lvl 9

Attribute Tweaker: Execution Health Gain +17.89%

ModifierScry

Gameplay Row

134 12

8 Actors [Players & Bots]

19:03

Cycle Actor Type

Remove Scry Modifier

Apply Scry Modifier

Cycle Detail Mode

Skip

Scry 2.9.4 (Release Editor)

CHALLENGES

1. Data
2. Stacking Effects
3. Programming



Usability

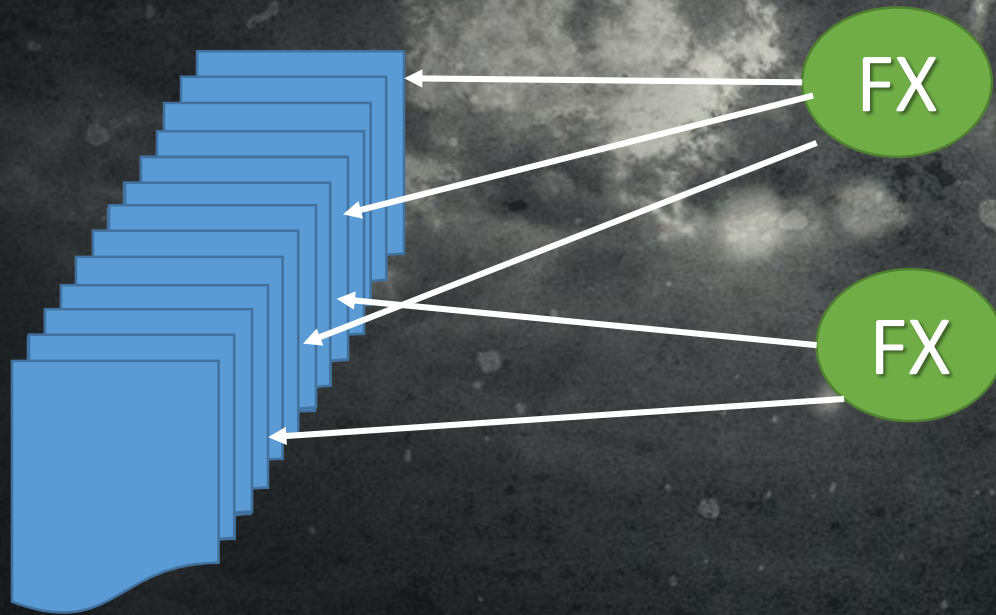


Modifier_Feat_GenericTank401_PassiveRegen_CDC ActorSimpleModifierDescriptor	
Name	Modifier_Feat_GenericTank401_PassiveRegen_CDC
Duration	
Has Duration	
Effects	
Status Effect Selections	1 (AgentStatusEffectSelection)
Status Effect Selections[0]	ActorStatusEffect_Feat_PassiveRegen_CD - Status Effect Lvl 0
Status Effect	ActorStatusEffect_Feat_PassiveRegen_CD
Status Level	Level 0
Selected Level	AgentStatusEffect_LevelDefinition
Effects	1 (StatusEffectBaseEffect)
Effects[0]	Apply modifier Modifier_Feat_GenericTank401_PassiveRegen_CD on activation
Type	
Events	1 (ClipEvent)
Events[0]	Apply modifier Modifier_Feat_GenericTank401_PassiveRegen_CD
Event	
Misc	
Actor Type	Self
Modifier Descriptor	Modifier_Feat_GenericTank401_PassiveRegen_CD
Name	Modifier_Feat_GenericTank401_PassiveRegen_CD
Duration	
Has Duration	
Duration	2 (sec)
Effects	
Status Effect Selections	1 (AgentStatusEffectSelection)
Status Effect Selections[0]	ActorStatusEffect_Special_Cooldown - Status Effect Lvl 0
Status Effect	ActorStatusEffect_Special_Cooldown
Status Level	Level 0
Selected Level	AgentStatusEffect_LevelDefinition
Effects	0 (StatusEffectBaseEffect)
Actor Selector	Player & NPC
Stacking	
Conditions	
Feedbacks	
Misc	
Application Timing	
Frequency Type	On Activation
Time Offset	0 (ms)
Actor Selector	Player & NPC
Stacking	
Conditions	
Condition(s)	(Actor Type = Self AND Combat Mode = Free Roaming AND NOT(Self Health is Empty) AND NOT(Self Health
Feedbacks	
Misc	

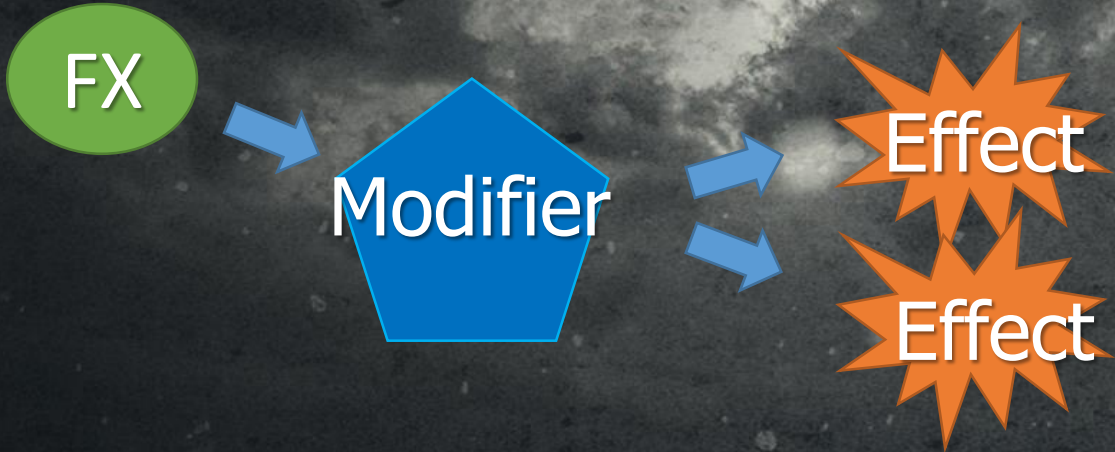
Standards



Feedback



Solution: Status Effects!







Modifier



LvL 0

Weak



Modifier



LvL 15

Status
Effect

STRONG

Status Effects, Success?

MIXED

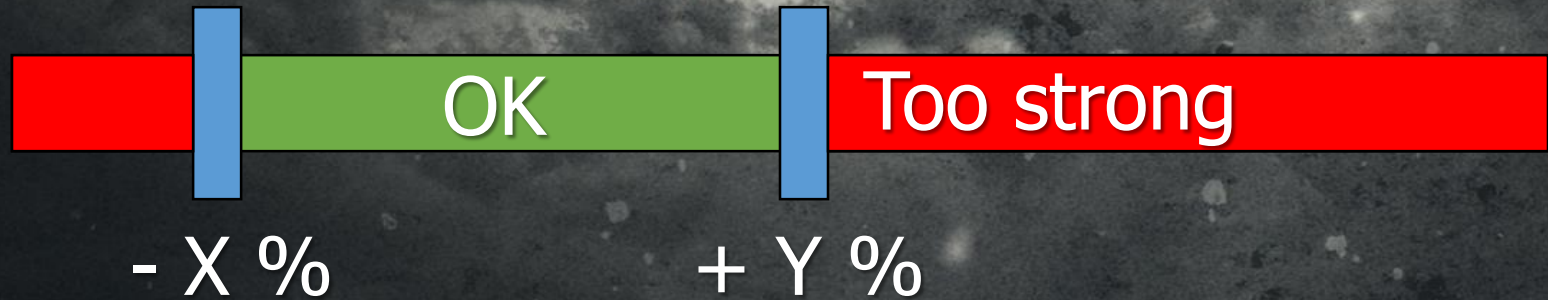


Effects Stacking

The diagram illustrates the process of stacking two damage effects. It features three rounded rectangular boxes. The first box on the left is blue and contains the text '+40% Dmg'. To its right is a white plus sign '+'. The second box is also blue and contains the text '-15% Dmg'. To its right is a white equals sign '='. The final box on the right is green and contains the text '+25% Dmg'. The background of the slide is a dark, textured image of a cloudy sky.

$$\begin{matrix} +40\% \\ \text{Dmg} \end{matrix} + \begin{matrix} -15\% \\ \text{Dmg} \end{matrix} = +25\% \text{ Dmg}$$

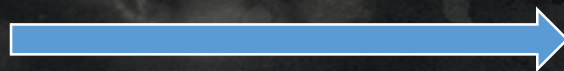
Min/Max



BOSS



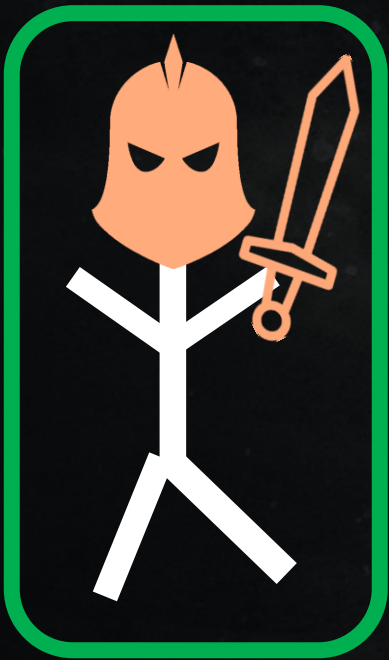
10 dmg



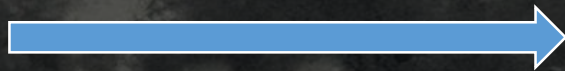
2 dmg

Difficulty:
-80% dmg

BOSS



10 dmg



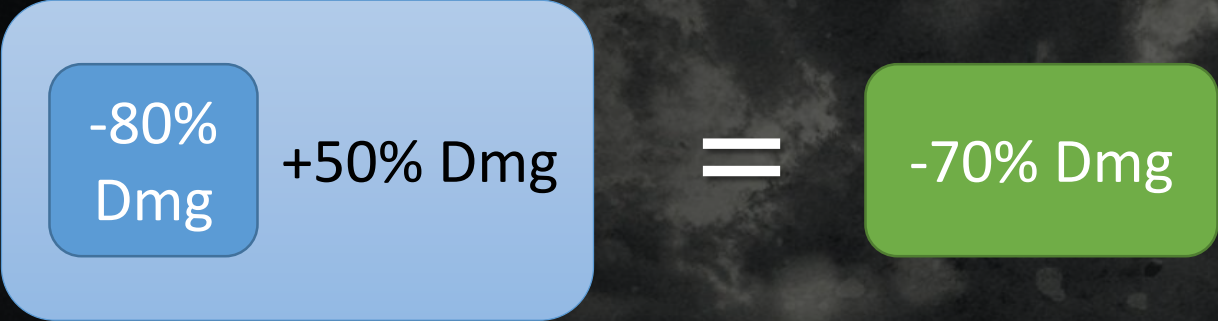
? dmg

Difficulty:
-80% dmg

Feat:
+50% dmg

-80% Dmg + +50% Dmg = -30% Dmg

10 dmg → 7 dmg



10 dmg → 2 dmg → 3 dmg



Core

- Gear
- Campaign
- AI archetypes

External

- Feats
- Boosts
- Missions

Feedback

Core



External





Core vs
External,
Success?

YES!

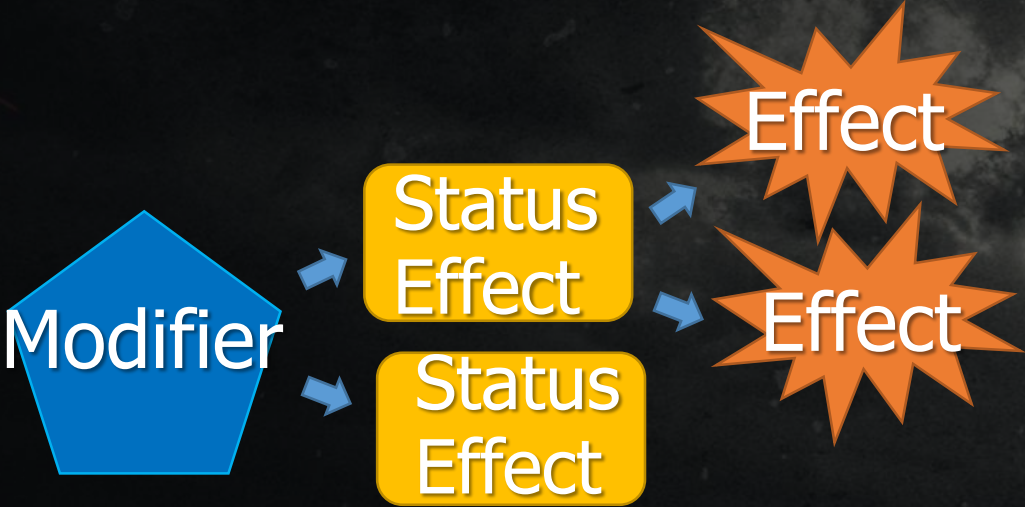
Challenges

Code

API



Data-Driven

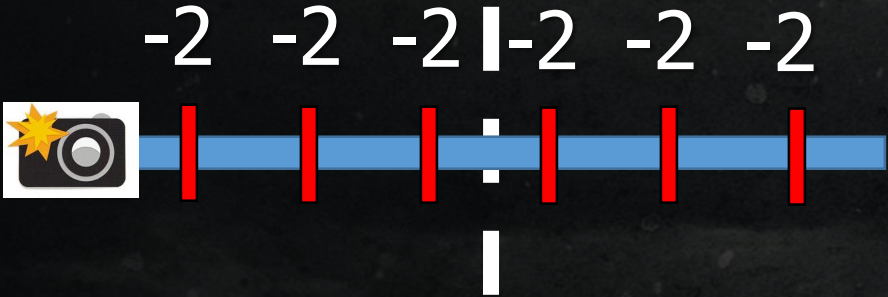


Snapshots!



Haha!

Damage
Boost



Attack %

Defense %

Optimization

Max

Solider: 6

Player: 30

0
1
1
1
0
0
0
0
1
1
1
1

Bitfield

Filter Items

BattleMeter Hard Points Earned

BattleMeter Hard Points Given

Repulsion Size - DEPRECATED

Squad Weigth

NPC Attack Speed - DEPRECATED

Thrown distance

Feat Cooldown Speed

Max Balance

Down State Duration

Revive Duration

Revive Speed

Revive Health Regain

Revive Other Speed

Revive Other Health Regain

Knockback Applied

Boost capture rate

Super State Duration

Revenge Meter Gain

Execution Health Gain

Boost Duration

Things that went right

- Modifiers used everywhere!
- Debug Info
- Ownership
- Simple

- Fight: 60
- Feats: 200
- Gear: 40
- Campaign: 200

Things that could have been better

- Modifiers used everywhere!
- Testing
- Usability



Future Plans

- Dedicated Editor
- Optimization – Permanent Modifiers
- Status Effects
- More debug display!

Recap

Conclusion





Questions?

Aurélie Le Chevalier