# **Advanced Save & Load**



#### What is the system capable of:

- 100% Blueprint
- Thumbnail for every save slot
- Thumbnail quality control
- Save slot with character limitation control
- Date and time formats control
- Delete selected save slot
- Notification system with colors and text control
- Fade in and out on load
- Simple save game system
- Autosave with interval control
- Checkpoints based triggers
- Quick save
- Simple load game system
- Quick load
- Limit slots or have an unlimited amount
- Continue the game from the last point in the menu
- Save player location by default
- Custom checkpoint names
- Simple save component that controls save settings
- Al's example with location and life system using the system
- Player example stats (life, mana, XP) system using the system
- Super easy integration plug and play (approximate 5 min)

## **Activation With The Provided GI**

To start the work with the system follow the next steps:

1) Go to the project settings



2) Under project select the option



3) Select the Game Instance that you will use (The one provided)



4) To work properly we need to set the main menu level and the main level that will be played



5) Start to set values



# Activation With Own GI (Long Process)

1) In case there is already created GI (game instance) we open our GI and the provided GI 2A) From the provided GI we will copy the next to our GI

		VARIABLES		Ð	
		✓ Save & Load ✓ Slots			
		SaveTimeSettings	S Date Time	$\rightarrow$	
		OnlySaveName	Text	$\sim$	
		SlotsNames	String	¥	
		Slots	W Slot	$\sim$	
		CheckPoints	BP Check Point	$\sim$	
💦 BP_GI 🗲 Event Graph		🔻 Save Image			
	FONCTIONS (4 OVERNIDABLE)	SlotIndex	<ul> <li>Integer</li> </ul>	¥	
	- Cove 9 Lood	SaveCaptureSlateBrush	😑 Slate Brush	¥	
Expoort & Import Thumbnail Collapsed Graph	V Save & Load	ImportSuccess	🛑 Boolean	$\sim$	
	f SaveSettings	MainLevel	📥 World	$\sim$	
	j curecettinge	MenuLevel	🔔 World	$\sim$	
	f LoadSettings	DateFormat	👄 E Date Formats	$\sim$	
	j Loudoottinigo	ThumbnailCompressionQuality	<ul> <li>Integer</li> </ul>	$\sim$	

- 2B) Repeat steps 4-5 from Activation With The Provided GI
- 3) Go to this location



4) Open the blueprint



5) Create a cast function for easier communication that will be similar to the one provided, but with your GI



6) Search all over UseGI and replace with the new function created in section 5, in this case we need to replace the variables with the values around the save & load system with the new variables from our GI

## Activation With Own GI (Short Process)

In case there is already created GI (game instance) we open the provided GI
 In **BP\_GI** go to Class Settings



3) Under the Class Options section we click on Game Instance



4) Now we choose the GI that we already have in our project (our own, the one that is already in use)

5) Repeat steps from Activation With The Provided GI

### Player Setup

1) Open our main character and the provided character (BP\_ThirdPersonCharacter)

2) Copy and paste the next things from the provided character to our main character in the next order

• Put it under the Camera Boom/ Spring Arm



• We can add it from the Add Component or just copy



• At the end copy and paste it into the Event Graph



#### How To Start Player Setup

Inside the **AC Save** we can find multiple control options: Autosave Slot Name - will be shown on the screen when autosave Quick Save Slot Name - will be shown on the screen when quick save Check Point Slot Name - will be shown on the screen when checkpoint Slots Limit - set the maximum amount of slots to save the game Autosave Time Laps - the time interval in minutes between autosaves Use Autosave - do we want to use Autosave or not Use Notifications - do we want to use on-screen save system notifications or not No Characters Warning - on save notify that the slot is empty Max Characters Warning - on manual save notify that the slot is out of characters Max Characters in Slot - the max number of characters in the slot name Max Slots Amount - on save notify about slots amount limit Notification Color - the colors of every notification Use Fade Transition - do we want to have fade after loading between levels Camera Fade - settings for the player's camera fade when the main level is loaded Add Menu at Beginning - Add pause menu after the load of the main level Menu Widget - the pause menu widget to use



**AC\_Save** contains an event that does something after the fade into the game, as example we provide a demo widget that shows the player's stats after the fade is finished

Events    Start After Fade	Create W Demo Widget Class W Demo V O Return Value Owning Player

The demo stats will be in a couple of places, if we are talking about the player the player has variable/s that control the stats for example:

DemoSettings	😑 S Player
Democettingo	

This is a struct that contains all player information

•	Default Value	
•	Demo Settings	
		0
	Health	100.0
	Mana	100.0

This information is spread over the project as any other variable and in this case, we use it in the demo widget to show the visual results

BP	Che	ckP	Point
<i>–</i>		GNI	Unit

Check Point		
Use Custom Check Point Name		
Custom Check Point Name	Check Point Name	

By default, the checkpoint name for all blueprints is "Check Point" or we can modify the name per every blueprint by clicking on the blueprint in the level, and by selecting it we can see in the settings the section from the image.

**Use Custom Check Point Name** - Enable or Disable custom checkpoint name **Custom Check Point Name** - It's the custom name for the checkpoint that will be in use only after Enabling "**Use Custom Check Point Name**"

#### Save & Load Setup

The project provides example variables that will be used in the system and the idea is to add your variables to it in the same way, in this case, we use **BP\_SaveSettings**, and inside we insert our variables



PlayerSettings is the same variable used in the player blueprint named DemoSettings EnemyTransform is the array that has all our enemy transformations(Location, Rotation, Scale) EnemyHealth is the array that has all our enemy health stats

🔻 Example	
PlayerSettings	👄 S Player
EnemyTransform	Transform
EnemyHealth	Float

The enemy that is provided doesn't need a health array, but just a standard health variable

EnemyHealth – Floa
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After we figured out what variables we needed now we set them in the system that can be found in **BP\_GI** 



We have 2 functions to our use



Let's start from SaveSettings



This is the setup of our enemies, we ran a loop over all our enemies from this class and save the transform and health values from our BP\_SaveSettings

🗲 Get All Actors Of Class	G For Each Loop	? Is Valid		Save	Save Save		
Actor Class Out Actors #	Exec Loop Body Exec	Exec	Is Valid 🕞 – Is Not Valid D	ADD 🕹			
BPAI V © Q	Array Index O Completed D			Target Enemy Transform	Target Enemy Health		
				Get Actor Transform     Target is Actor     Target Return Value	Target Enemy Health		

We are doing the same for our main character

f Get Actor Of Class		? Is Valid		Save
Actor Class	Return Value 🔵	<ul> <li>Exec</li> <li>Input Object</li> </ul>	Is Valid 🕨 – Is Not Valid 🗋	Player Settings
BP Third Person 🗸 🕞 🔾				Target     Target     Demo Settings

In this way, we finish the process of saving values, and if we have more objects, actors or characters that we want to save, we just need to add a new pin in our sequence and recreate the process as it was shown for the enemies and the player



Now let's use LoadSettings

		Example									
Lood Settings	Fr Sequence Thes 1 Thes 2 D Add pin @	F Get All Actors Of Class	Corp For Each Loop Cree Loop Boly Array Derver Array Derver Array bleve Array bleve Completed D	Evald     Doe Bryad     Doe Bryad     Doe Bryad     Doe Bryad     Torge Bryad     Sor	GET	Serie Actor Transform     Transform     Transform     Transform     Target     Serie Hit Fealt     New Tarceform     Return Value IN     Serie     Telgant	GET • Tage DenyHeath	SET © Enerry Health © Target	Const Add sin Co	Cluit To W. AL Damo	Site Percent Superior Progress Rav
		Get Actor Of Class     Actor Gass     Actor Gass     Bet furt Prices     O	2 is Valid Exec Binpat Object	Is Vad ) SET D Inservaid D Example Example Same Serings S	)>						

We restore all enemy's stats as transform and health and even set the health bar percent because in the demo it only updates when we hit the enemy so by restoring it from the load function we tell the system that on load finished update the widget as well



Doing the same to the player



In this way, we finish the process of loading values, and if we have more objects, actors or characters that we want to load, we just need to add a new pin in our sequence and recreate the process as it was shown for the enemies and the player



Use the same **BP\_GI**, go to Class Defaults, and set the preferred Date Format you wish to use and the Thumbnail Compression Quality where 100 is the lowest quality and the lowest store cost and 0 is the highest quality and highest store cost

	V Save & Load		
	Main Level	L_greek_island	~
		a 🥹 🚨	
		SampleScene	
Me	Menu Level	a e 🖻	
	Date Format	YYYY-MM-DD 🗸	
	Thumbnail Compression Quality	100	

### Notes:

- Making sure that the system is working from time to time is good prevention to delete save files when developing, it can be good in cases where the system is not showing slots or does not update the saves.
- To find your saves we need to go into the project folders inside our Windows Explorer and then to a folder with the name Saved, we can see the folder with our saves with the name SaveGames.

Advanced Save & Load > Saved > SaveGames

- By deleting the files in SaveGames they will be recreated in the next run of the game
- To use your menu and not the provided one, insert the next code in the relevant Game Mode that contains "Create or Load Configurations". This option will create the base save files that without them the system won't be functional

♦ Event BeginPlay	f Execute Console Command	f Create or Load Configurations	f Add Cursor from Start
	Command		•
	• Specific Player		

- The slot limitation by default is -1 which means that there is no save slot limitation and if we set the value higher the limit will be 1 slot and higher
- "Always Show New Game Button" in W\_menu will always show the new game button if it's **True** in the main menu or hide the new game button after the first game save in the main menu if it's **False** and the result can be shown in the images. To edit the value we can go to our Menu game mode called BP\_Menu\_GM or copy this piece of code into your game mode to take effect

R     BP_Menu_GM > 6 <i>f</i> Delay	Event Graph		f Add to Viewpor Target is User W	rt f 💭	
Complete	Class W Menu V 📀 📿	Return Value 🍑 —	Target	D	
	Owning Player     Always Show New Game Butto				
Continue Game		acia filonata entre atala de	Continue Game		
		Start New Game			
l Sa	ive & Load		Save & Loa	d	
Exi	t The Game		Exit The Gan	ne	

- A short delay in BP\_Menu\_GM was needed to load settings so it's necessary!
- **Good to know:** The visual part of the provided menu is modular and can be changed to your desired style/view or integrated with additional buttons and functionality