Modular Character Urban Citizen NPC Population Generator Documentation

1. Intro

This is a modular, urban-style NPC auto-generation blueprint system. While previous versions only featured Asian skin tones, the latest update now includes Asian, White, and Black skin tone options. The system divides characters into six modular components: face, hair, arms, upper body, lower body, and shoes. Developers can freely mix and match these modules to create custom characters or use the built-in blueprint system to auto-generate randomized NPCs.
With a wide variety of modular combinations and color customization options, developers can efficiently create a diverse range of unique NPCs. The blueprint-based auto-generation feature allows for rapid creation of large numbers of distinct characters. It also comes with multiple built-in functions that can be directly applied across various urban scenarios, ignificantly saving development time.

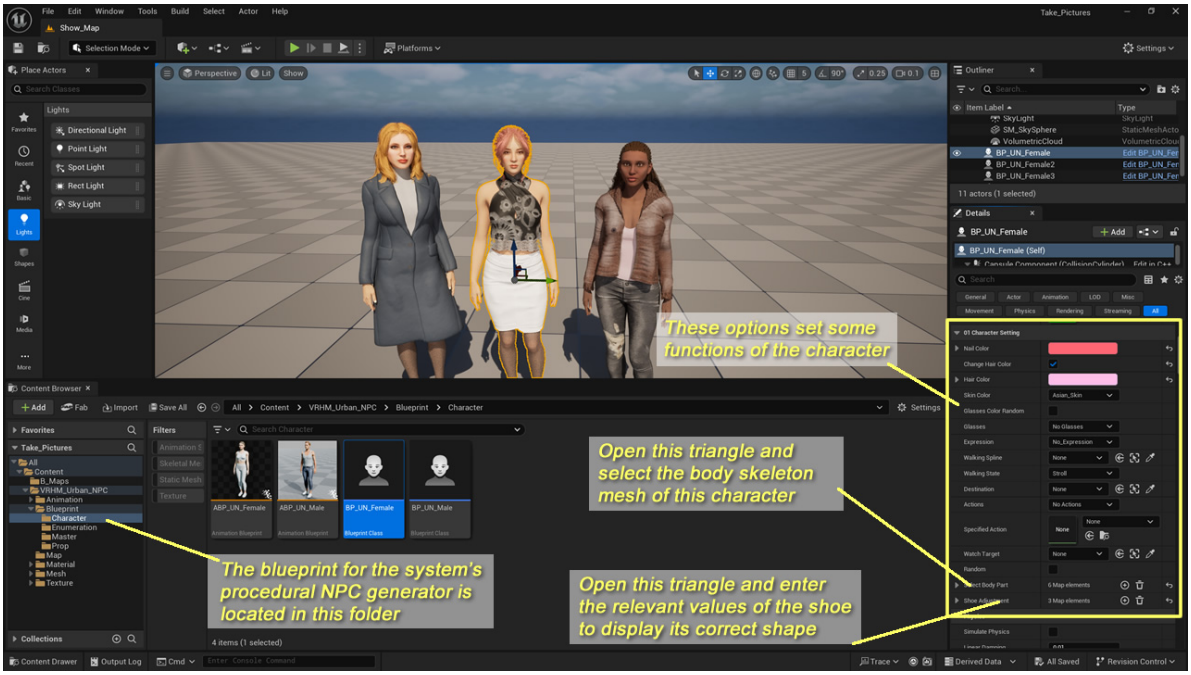
Additionally, the system is designed with forward compatibility in mind. Future character body modules from the VRHM series will be interoperable with this system, further expanding the range of available assets. We also plan to introduce more themed modules in the future—such as adventure, military, and medieval themes—to continuously enhance the system's flexibility and practicality.

The system includes a total of 719 skeletal meshes, covering the six major body components of the characters. All assets utilize textures with a resolution of 1024×1024 or higher, ensuring high-quality visual rendering in Unreal Engine. To maintain runtime efficiency, each skeletal mesh is configured with fully set up LODs (Levels of Detail), enabling smooth performance even when a large number of NPCs are present on screen. Additionally, all skeletal meshes are built to match Epic's classic skeleton structure, providing excellent animation compatibility and facilitating rapid integration and content expansion for projects.

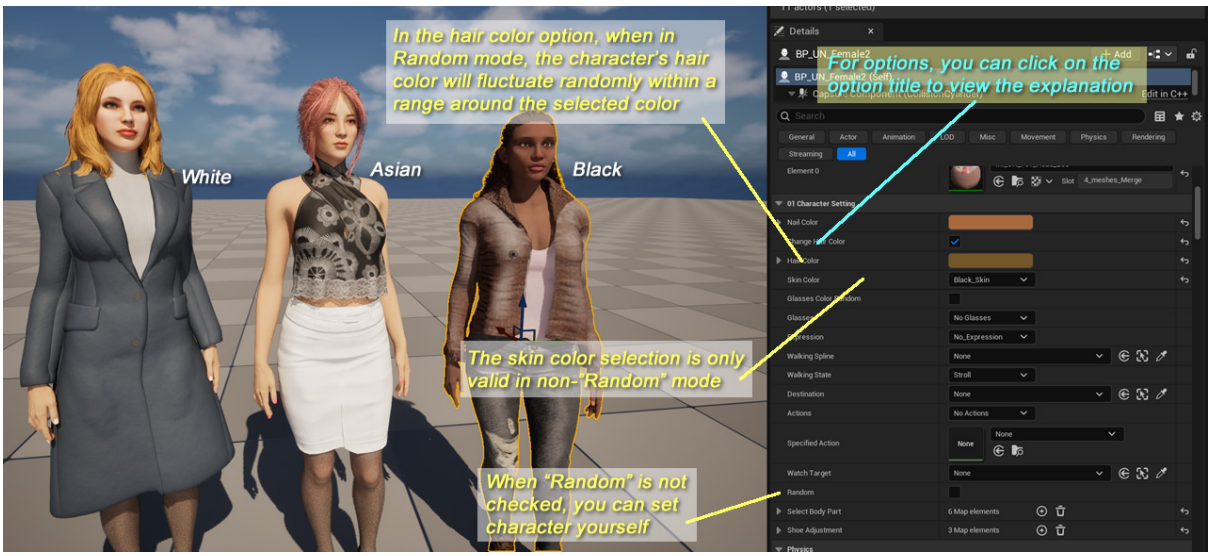
2. Setting Explanation

The character blueprint (Female simple)

Place the character blueprint in the scene, then click on the character, and some setting items for the character will be displayed in the right column.

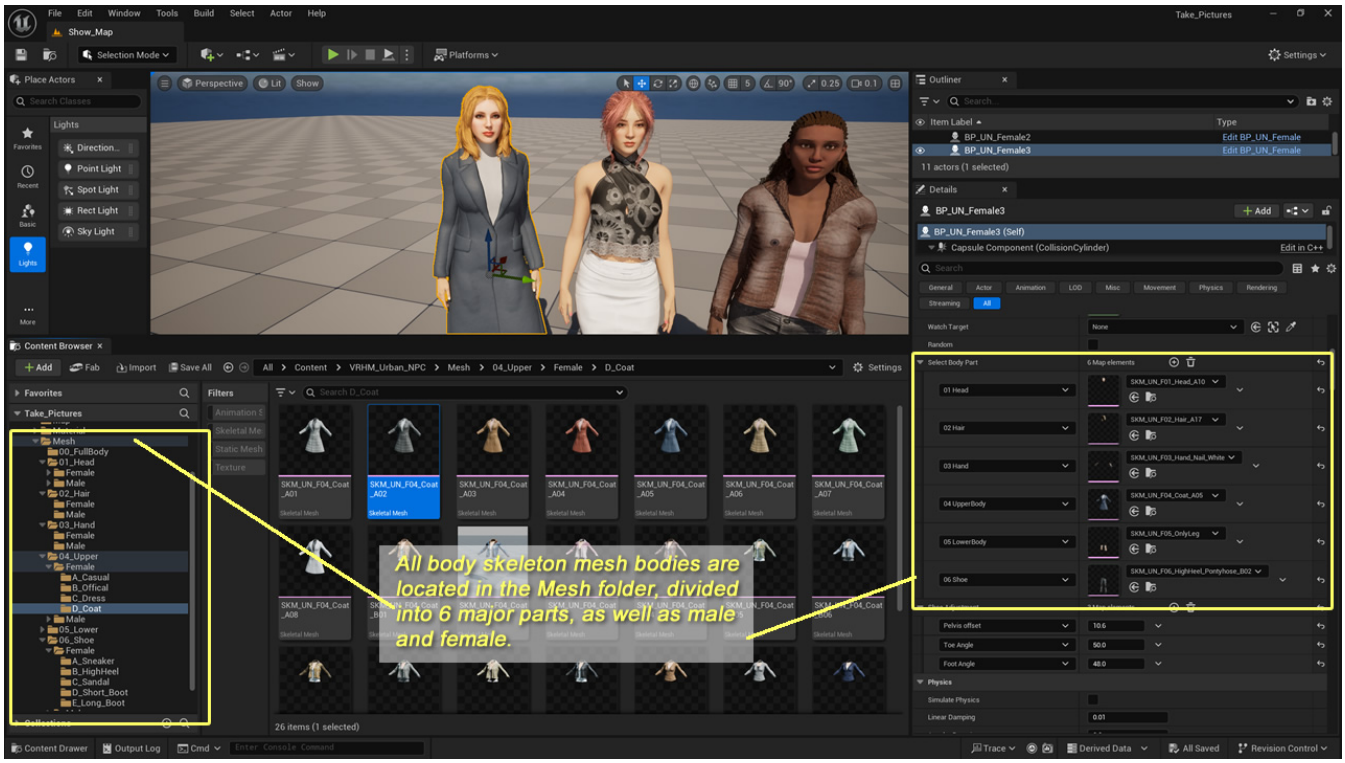


When the "Random" option is not checked, you can manually set the skin color, body parts, and shoe values of the character. If it is checked, the blueprint will automatically create a random character.

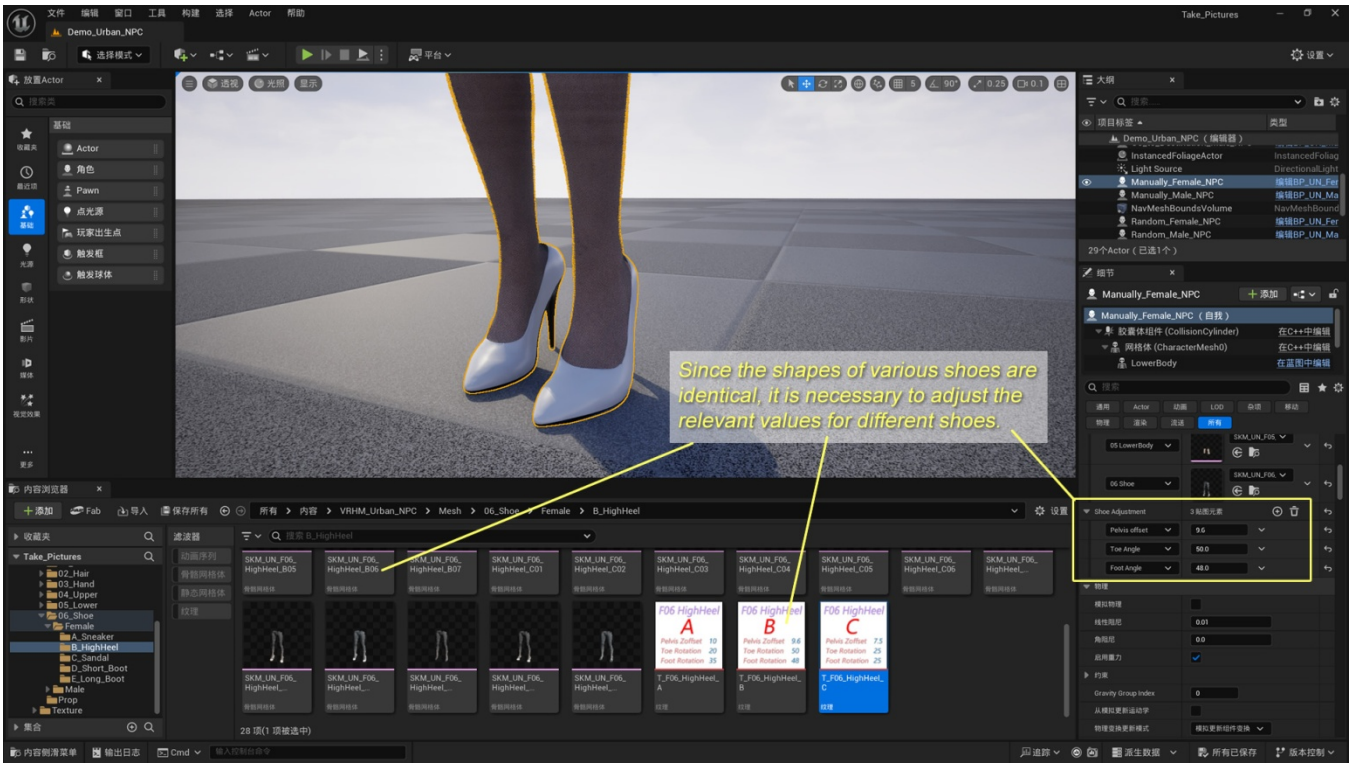


A. Combine body parts

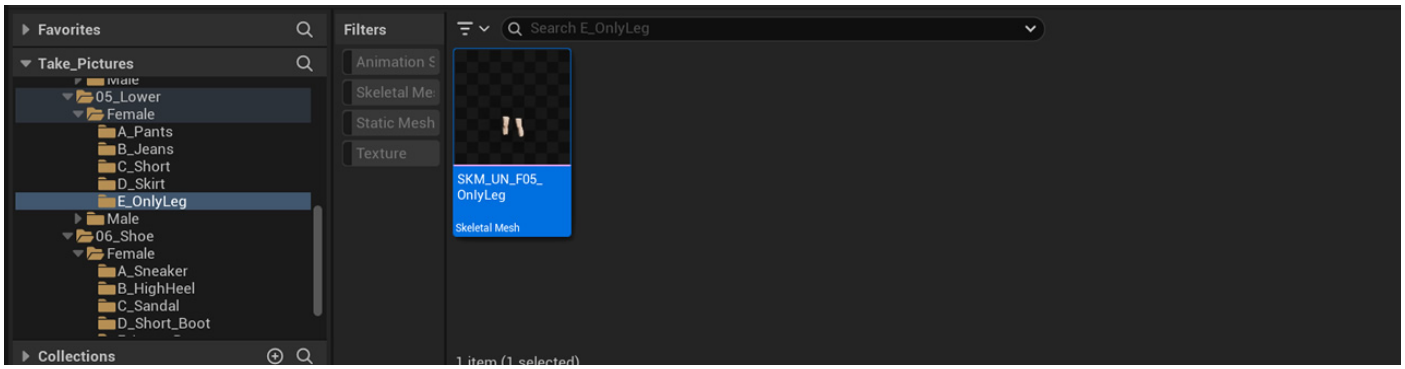
In non-Random mode, select the skeleton mesh of the character's face (F01), hair (F02), arms (F03), upper body (F04), lower body (F05), and shoes (F06) to create this character.



Because the shape and heel height of each shoes are different, it is necessary to adjust some parameters when setting different shoes to achieve good results. There are the reference parameter values for each series of shoes, which can be directly filled in the parameter column.



A Reminder: If choose a full body dress for famale character, then the 'Only leg' asset should be selected for the "05 lower body" . If choose the full body suit for male character, then the "05 lower body" should be set to empty.



B. Generate characters automatically and randomly

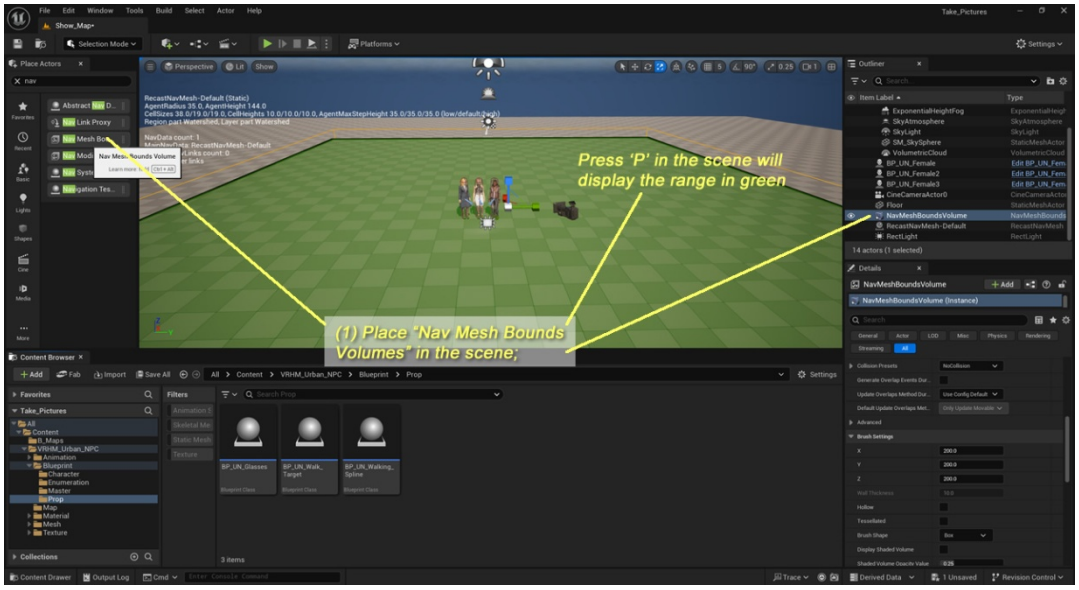
After selecting "Random", the blueprint will automatically generate characters with three different skin tones. At the same time, the skin color option, body component selection, and shoe parameter settings are invalid, but other functions are still valid.

3. Additional functions

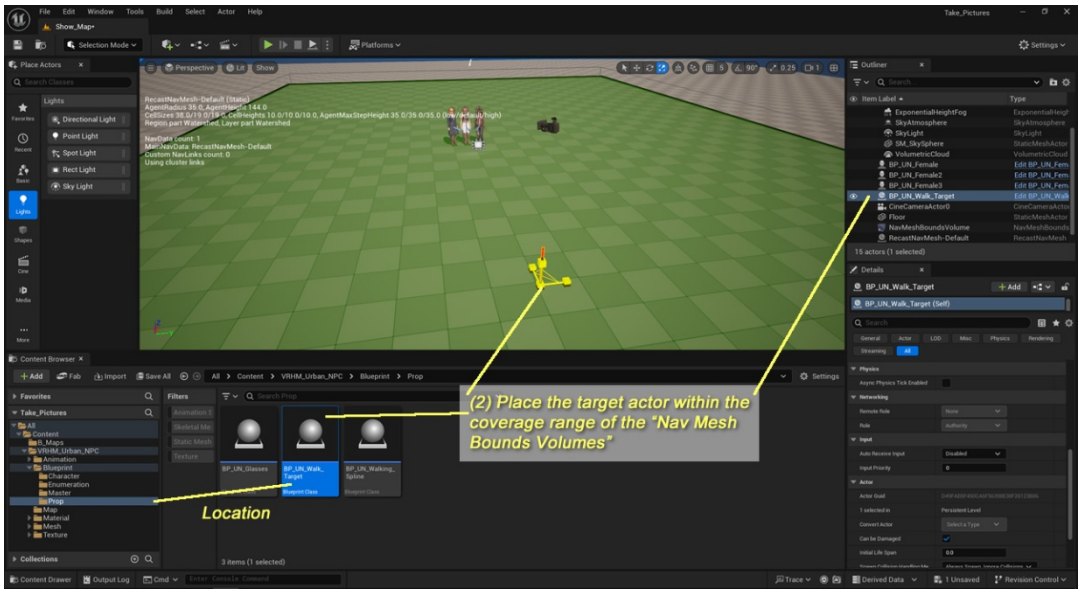
A. Walk towards the target actor

This function is to guide the character towards a selected target in the scene.
How to achieve:

(1) Place “Nav Mesh Bounds Volumes” in the scene;



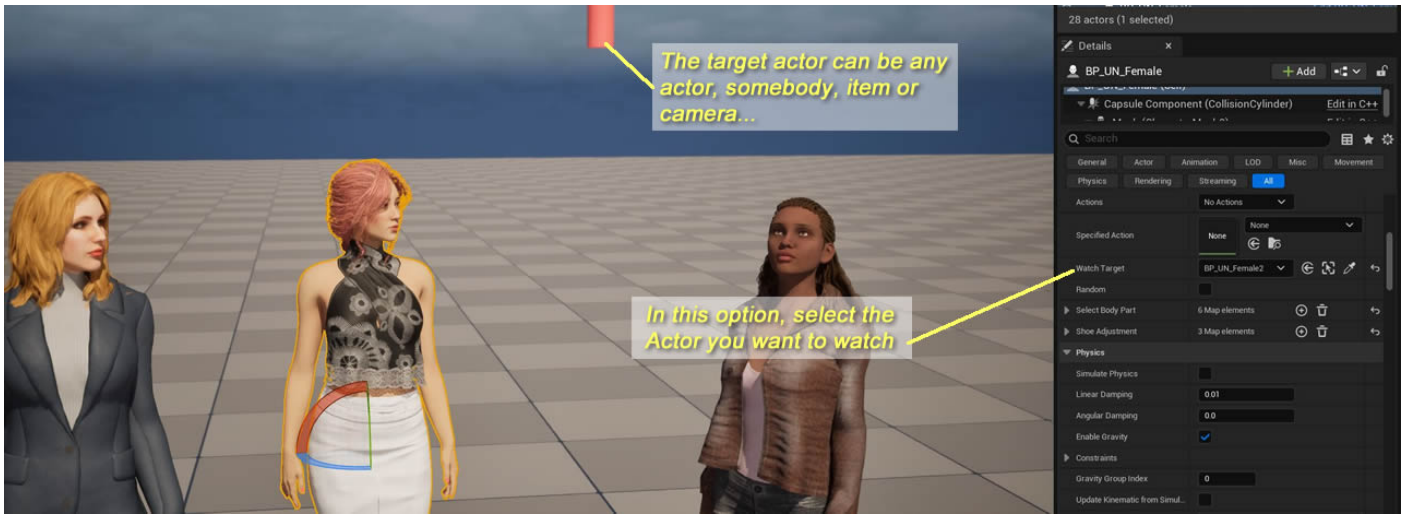
(2) Place the target actor within the coverage range of the “Nav Mesh Bounds Volumes”



(3) Select the target actor in the "Destination" of character. Then character will move towards the target during runtime.

b. Watch an actor

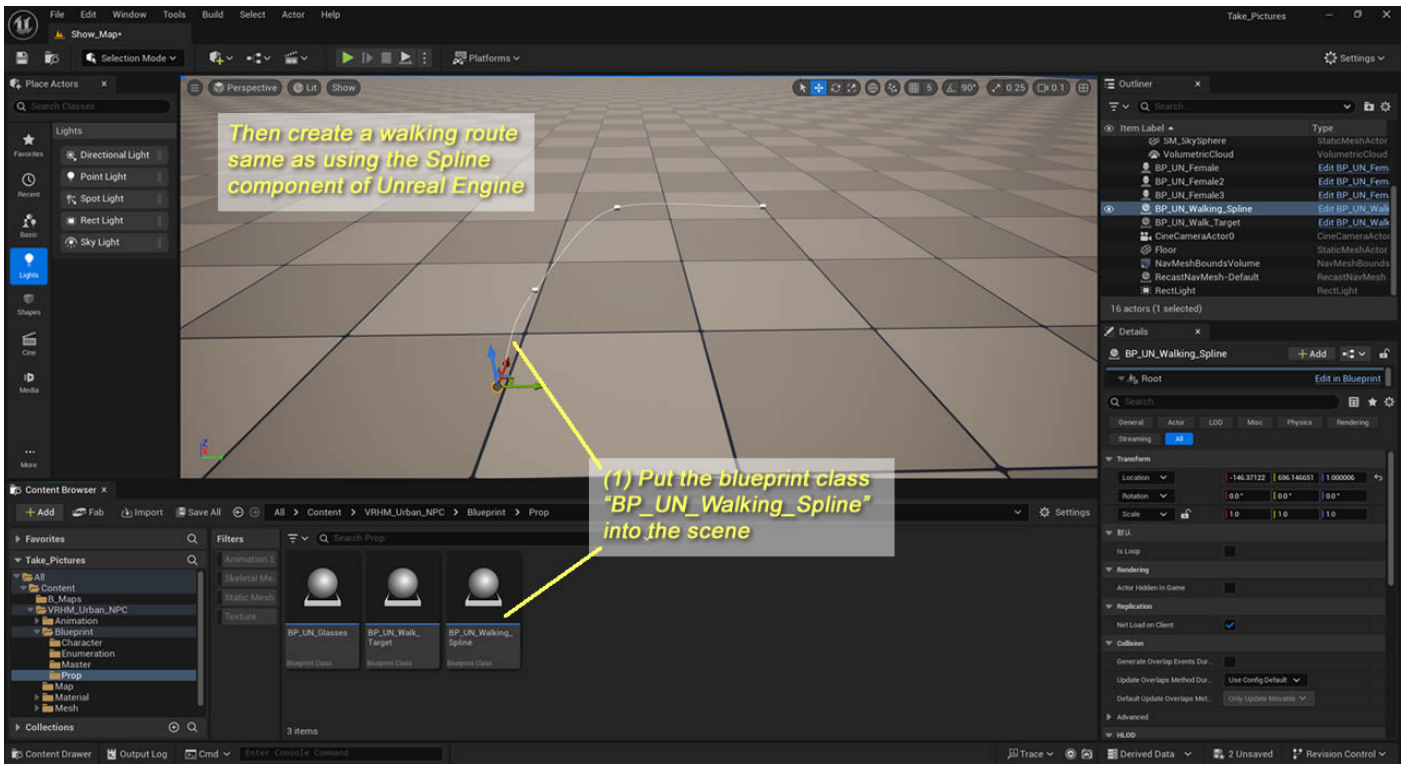
This feature allows the character to watch the designated target actor in real-time. Choose actors within the normal line of sight of the character, usually in front of them. In abnormal line of sight, such as behind them, the character will not look.
The focal point is the basis of the actor. If it is a character actor, it is not normal to stare at the buttocks position because its base point is on Pelvis. So it has been set to automatically increase by 60 units, with the gaze point near the face.
The target actor can be any actor.



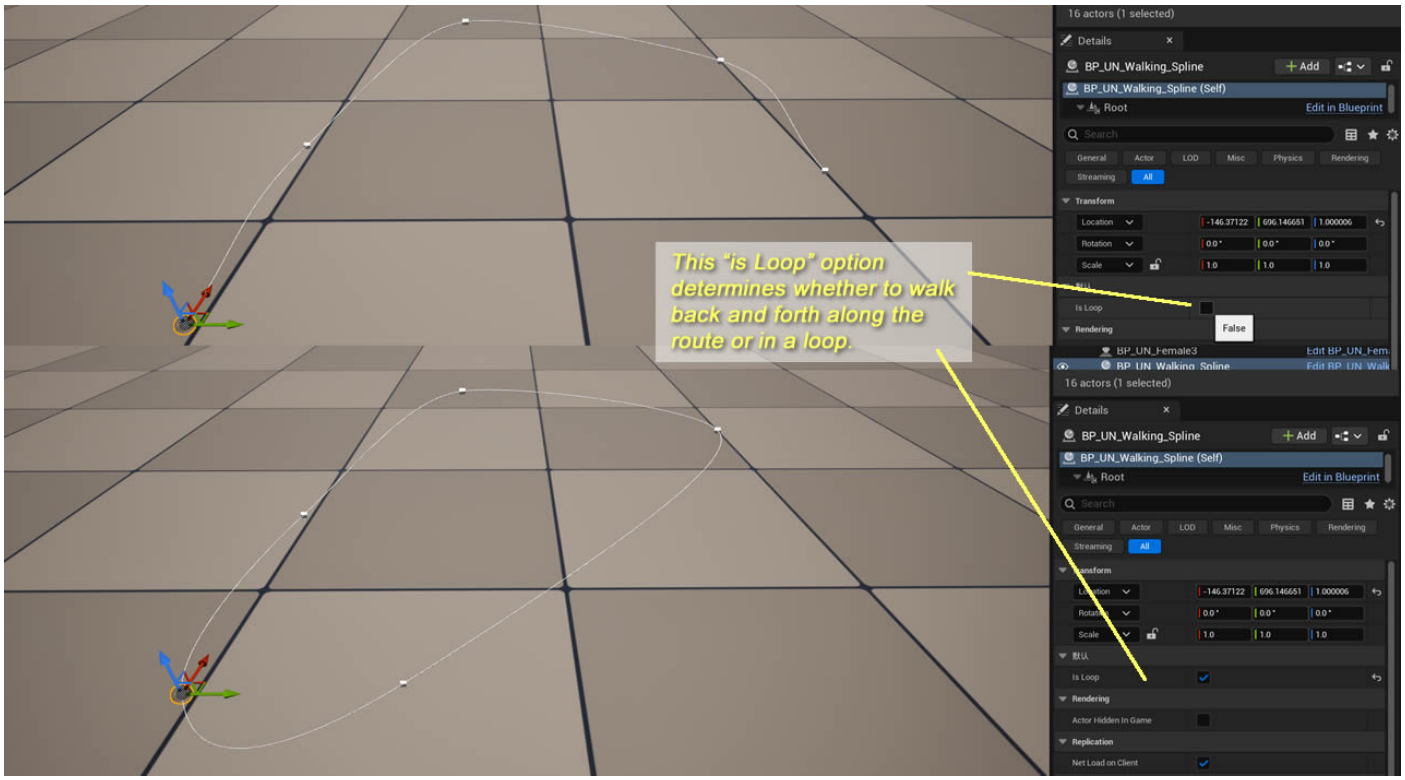
C. Walk along the Spline

This feature allows the character to walk along the set " BP_UN_Walking_Spline" route.
How to achieve:

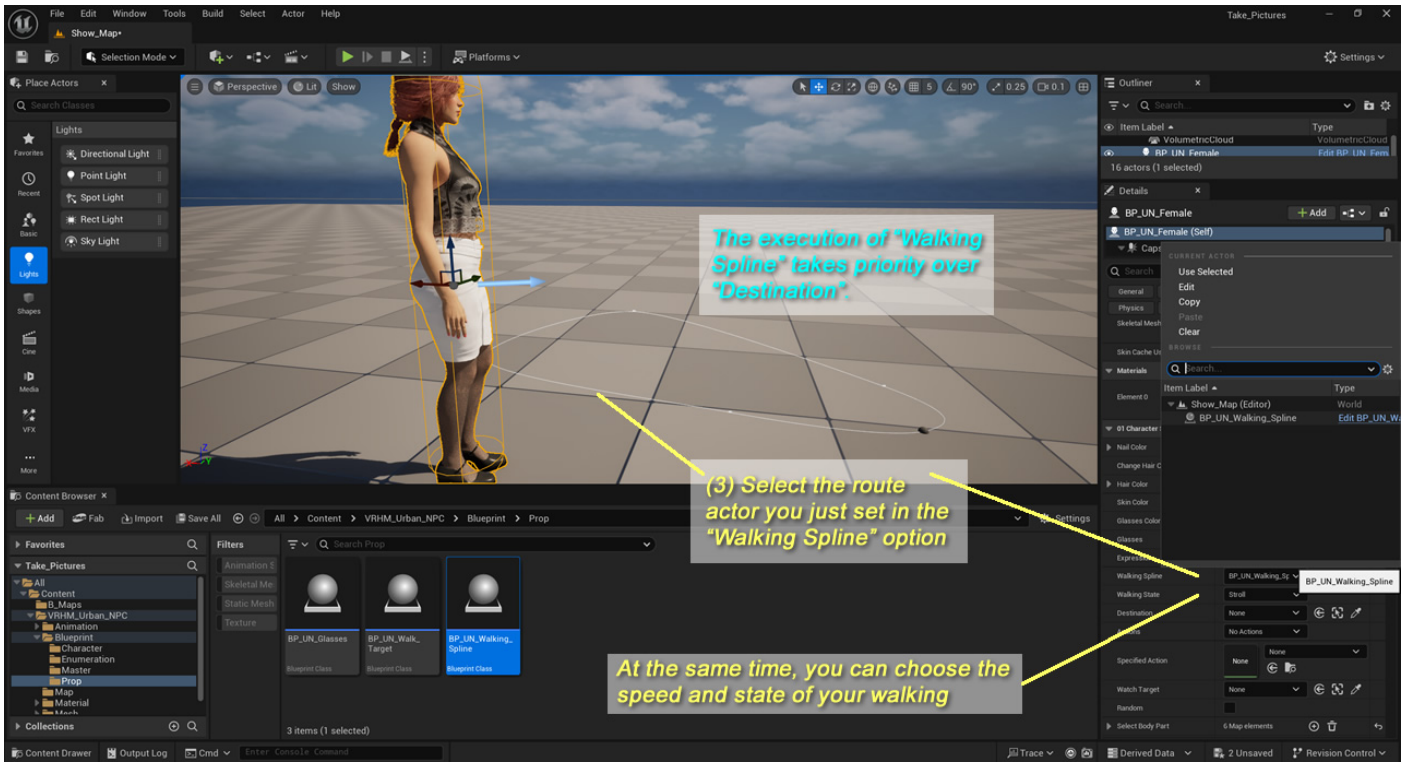
(1) Put the blueprint class "BP_UN_Walking_Spline" into the scene



(2) Then create a walking route same as using the Spline component of Unreal Engine. And this “is Loop” option determines whether to walk back and forth along the route or in a loop.



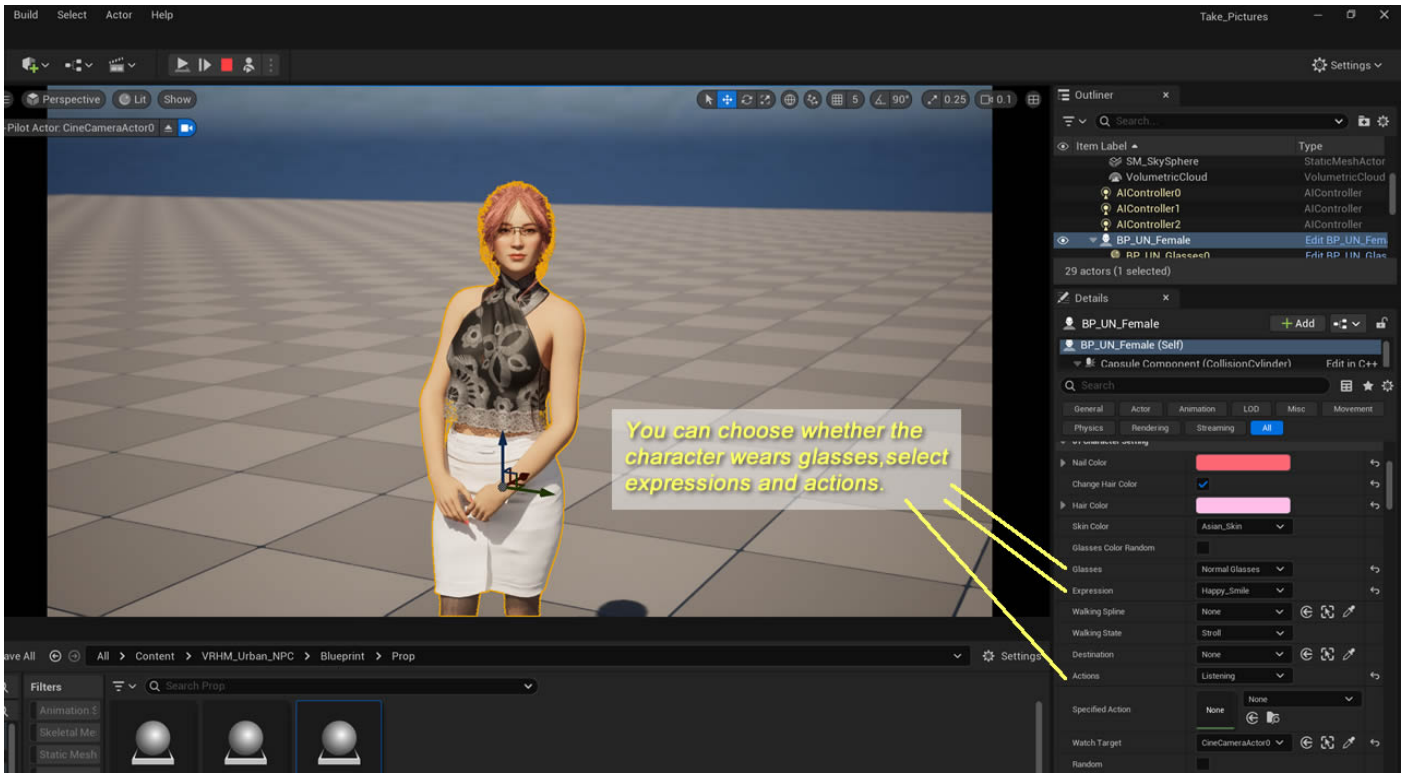
(3) Select the route actor you just set in the "Walking Spline" option. The execution of “Walking Spline” takes priority over “Destination”.



(4) When running or simulating, the character will walk along the route.

D. Glasses, Expression and Actions

You can choose whether the character wears glasses(The static mesh of glasses can increase on your own later), select expressions (Smile, Laugh, Boring, Rage, Upset, Grieve, Strange and Shock), and actions (Normal, Chatting, Listening, Specified).



If the Action option is selected to “Specified”, you can choose the animation sequence to be executed in the "Specified Action" section below. When running or simulating, the character will executes the animation sequence.

4. Contact us

If you have any questions during use, please contact us by email: e.litrade@qq.com We will answer your questions as soon as possible.