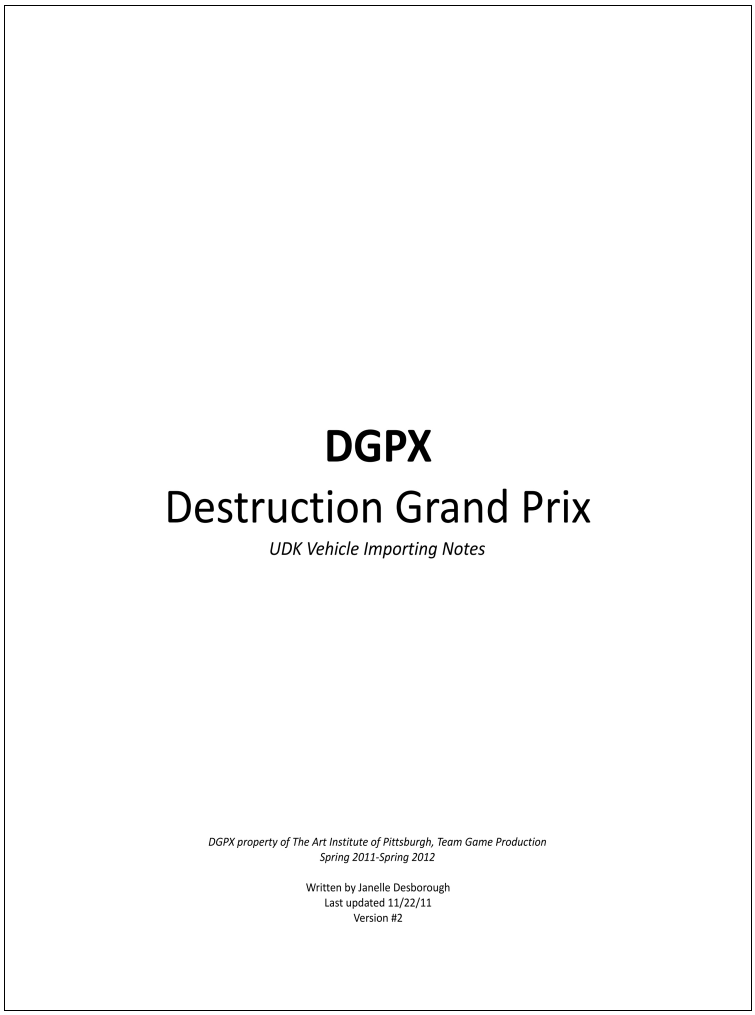
DESBOROUGH DESIGNS
3D vehicle modeling for games

Janelle Desborough
670 Minnequa Main Rd.
Canton, PA 17724

janelle@desboroughdesigns.com
desboroughdesigns.com
[570] 250-1514

"Vehicle Importing Notes" Preview

During the production of *DGPX* I was in charge of all vehicle scripting. Throughout this process I had to do a lot of self-learning, and realized just how under-documented and mysterious UnrealScript for custom vehicles can be. This is how the "Vehicle Importing Notes" was born. Written by myself, it aims to become an all-encompassing guide to vehicle customization for the Unreal Engine and covers everything from showing a beginner how to import and script a basic vehicle to advanced nitty-gritty tuning.



DGPX

Destruction Grand Prix

UDK Vehicle Importing Notes

DGPX property of The Art Institute of Pittsburgh, Team Game Production
Spring 2011-Spring 2012

Written by Janelle Desborough
Last updated 11/22/11
Version #2

The following is a short sample of the manual. It is still growing and all content is subject to change.

For future release details, please keep an eye on
www.desboroughdesigns.com and www.desboroughdesigns.wordpress.com

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UDK Vehicle Importing Notes

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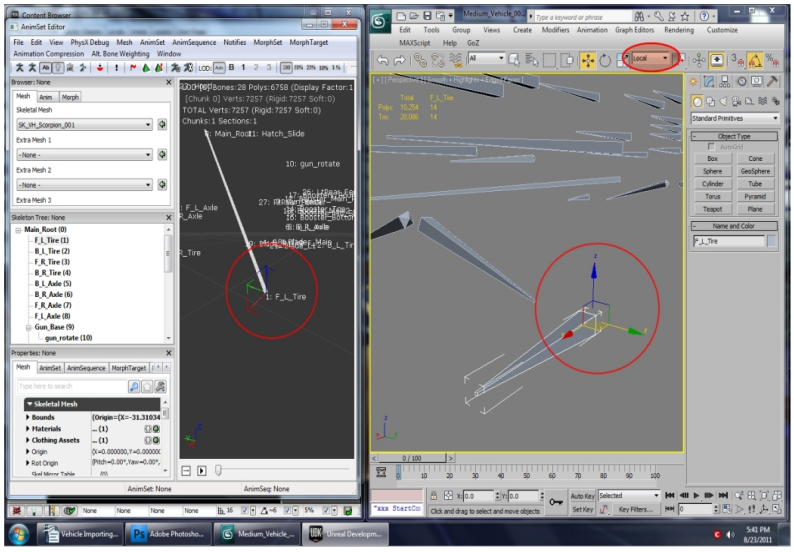
I recommend having the Scorpion open in UDK as you work in 3ds Max, so you can check out the orientation of each bone to be sure you're building everything correctly. Orientation is extremely important, as this will affect how the vehicle spawns, drives, and animates. Using "`local`" mode in 3ds Max will ensure that you are seeing the pivot point's actual orientation, and if this matches with what you see in UDK then there should be no problems on that front.



Also worth noting: in UDK, the name tags appear on the thicker end of the bones as they appear in 3ds Max. This may sound weird, but once you start working you'll see what I mean. Here's an overlay to demonstrate:

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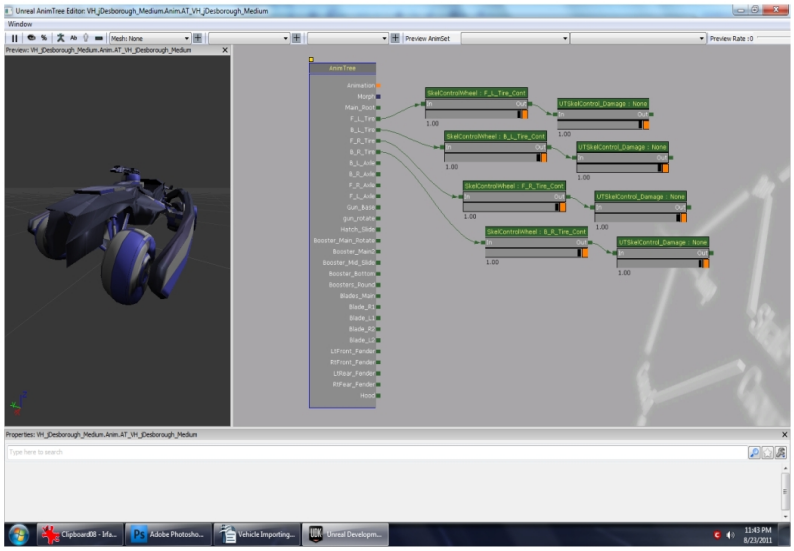
Right-click in an empty space and choose "`New Skeletal Control / Single Bone / UTSkelControl_Damage`". Similar to how we connected the last node to the tree, drag from the "`In`" side of this new node and connect it to the "`Out`" end of the SkelControlWheel.

In the "`On Death`" rollout, check "`On Death Active`". Later on when you imported damaged copies of vehicle pieces, you can plug in the broken wheel mesh here.

Now repeat this entire process for the other three wheels. By selecting the two nodes you already made, you can hit Ctrl+W to duplicate them. Just remember to rename the nodes accordingly, and plug them into the respective bones on the tree. This is what you'll have when you're done:



If you haven't already done so, now would be a good time to save your progress. This is done in the Content Browser by finding your package in the "`Packages`" list, right-clicking it, and choosing save. You should be saving your packages to this directory:

```
C:\UDK\UDK-2011-07\UDKGame\Content
```

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Here's an example:

```
DGPX_jDesborough_Vehicle_Medium_Test.uc
DGPX_jDesborough_Vehicle_Medium_Content_Test.uc
DGPX_jDesborough_VehicleFactory_Medium_Test.uc
DGPX_jDesborough_Vehicle_Medium_Wheel_Test.uc
DGPX_jDesborough_VWeap_Medium_Turret_Test.uc
```

You can now move these files from the temporary location into the "`UDK\UDK-2011-07\Development\Src\DGPXGame\Classes`" directory.

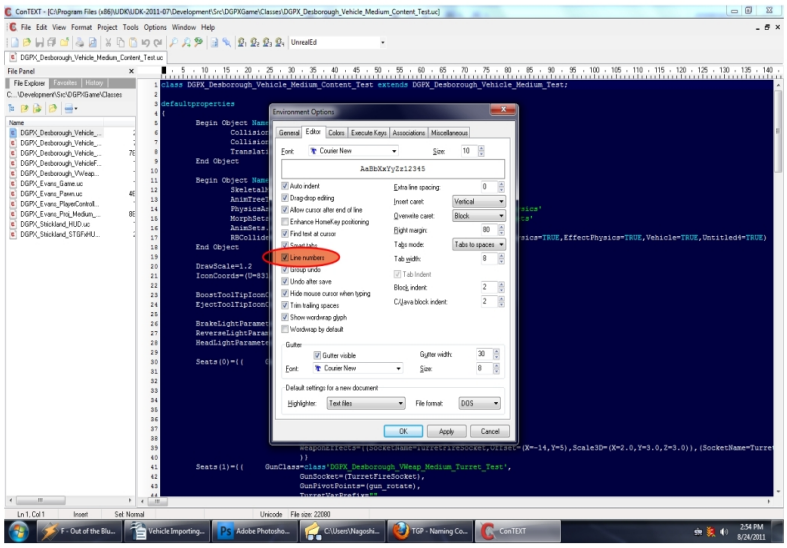
I recommend installing ConTEXT for editing script files. You can find the installer as well as the UnrealScript highlighter in Mr. Sabourin's dropbox in the following directory, or can download both files from www.contexteditor.org.

```
gsabourin\01 - Student Drop Box\TGP - DGPX\1 - Resources\Tools\
```

Install ConTEXT and place "`UnrealScript.chl`" here:

```
C:\Program Files\ConTEXT\Highlighters
```

For the purposes of following this tutorial, go into ConTEXT's options and enable line numbering.



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Comment out lines 167, 168, 170, 171, 178, and 179. "Commenting out" simply means type "//" before the line of code, which tells UDK Frontend to ignore those lines. It's like deleting, with the benefit that we don't lose anything. We will eventually be plugging in our own materials here.

Change lines 175 and 176 to point to your Physical Materials.

Line:	Original
175	DrivingPhysicalMaterial=PhysicalMaterial'vh_scorpion.materials.physmat_scorpiondriving'
176	DefaultPhysicalMaterial=PhysicalMaterial'vh_scorpion.materials.physmat_scorpion'
	Modified
175	DrivingPhysicalMaterial=PhysicalMaterial'VH_jDesborough_Medium.Materials.PhysMat_jDesborough_MediumDriving'
176	DefaultPhysicalMaterial=PhysicalMaterial'VH_jDesborough_Medium.Materials.PhysMat_jDesborough_Medium'

Open the script that I called `DGPX_jDesborough_VehicleFactory_Medium_Test.uc` (originally `UTVehicleFactory_Scorpion.uc`).

Change line 6 to point to your skeletal mesh, and line 18 to your "`content`" script.

Line:	Original
6	SkeletalMesh=SkeletalMesh'VH_Scorpion.Mesh.SK_VH_Scorpion_001'
18	VehicleClassPath="UTGameContent.UTVehicle_Scorpion_Content"
	Modified
6	SkeletalMesh=SkeletalMesh'VH_jDesborough_Medium.Mesh.SK_VH_jDesborough_Medium_Test'
18	VehicleClassPath="DGPXGame.DGPX_jDesborough_Vehicle_Medium_Content_Test"

Open the script that I called `DGPX_jDesborough_Vehicle_Medium_Wheel_Test.uc` (originally `UTVehicleScorpionWheel.uc`).

Remember when we figured out the radius of the tire back in 3ds Max? Type that value into line 5 for "`WheelRadius`". Later, if you find that the vehicle appears to either float or sink beneath the ground, change this value until it looks about right.

Open the script that I called `DGPX_jDesborough_VWeap_Medium_Turret_Test.uc` (originally `UTVWeap_ScorpionTurret.uc`).

Comment out lines 11 and 12.