Doomsday Engine - Feature #1139

More variations within repeated texture patterns with alternative textures (for detail textures)

2003-03-10 16:10 - pbru

Status:	New	**Start date:**	2003-03-10
Priority:	Normal	**% Done:**	0%
Assignee:			
Category:	Enhancement		
Target version:	Rendering II		

Description

doom/ hexen/ heretix worlds are quire... repetitive. I mean, all wall of type WALLxx always look the same.

one possible enhancement would be to define alternate hires textures as common/ uncommon/ rare (common=regular texture, uncommon=sometimes, rare=a few times a level).

of course, the alternated wall should remains the same during one session.

Pierre.

Labels: Graphics

History

#1 - 2003-03-12 07:57 - pbru

Logged In: YES
user_id=602719

to be honest, when I proposed it, I had no idea of the feasibility of the repeatable-pseudo-random choise of the alternative hires textures. I found one in an post on perlin-noise generation.

here is the idea:

1) generate a large (say MAX=10,000 cells) array of random numbers, once every new session game (or new game, as you want, but doing so, you have to save the seed of the RND).

2) for each hires texture to display, compute a unique fingerprint for ex. fp=(x+y*P+z*P*P) mod MAX, with (x,y,z) being the coordinate of the "lower-left" corner of the piece of wall and P beeing an adequate prime number. if fp in [0..threshold1] the texture is 'common', in [threshold1..thresholt2] 'uncommon' and in [threshold2..1] 'rare'. the same method can be used to select among multiple common, uncommon or rare texture variant.

using this method, the pseudo-random choise is repeatable and fast to compute.

Pierre.

#2 - 2003-05-19 16:29 - pbru

Logged In: YES
user_id=602719

one possible enhancement^2 would be to define alternate hires textures list. for example something like:

WALLxxC01.PNG,WALLxxC02.PNG,WALLxxC03.PNG
WALLxxU01.PNG,WALLxxU02.PNG

WALLxxR01.PNG,WALLxxR02.PNG,WALLxxR03.PNG,WALLxxR04.PNG

with C=common,U=uncommon,R=rare textures, and each time a
texture of some type is needed, one of the corresponding
list is (pseudo-)randomly fetched.

of course, the more textures, the more difficult for the
texture-maker to have textures which **all** tile well together...

Pierre.

#3 - 2004-02-17 13:07 - pbru

Logged In: YES
user_id=602719

one possible enhancement^2 would be to define alternate
hires textures list. for example something like:

WALLxxC01.PNG,WALLxxC02.PNG,WALLxxC03.PNG
WALLxxU01.PNG,WALLxxU02.PNG
WALLxxR01.PNG,WALLxxR02.PNG,WALLxxR03.PNG,WALLxxR04.PNG

with C=common,U=uncommon,R=rare textures, and each time a
texture of some type is needed, one of the corresponding
list is (pseudo-)randomly fetched.

of course, the more textures, the more difficult for the
texture-maker to have textures which **all** tile well together...

Pierre.

#4 - 2016-08-09 10:39 - skyjake

- Tags set to Renderer, Definitions, Textures

- Subject changed from Alternate hires textures to More variations within repeated texture patterns with alternative textures

- Category set to Enhancement

#5 - 2019-11-29 15:56 - skyjake

- Subject changed from More variations within repeated texture patterns with alternative textures to More variations within repeated texture patterns with alternative textures (for detail textures)

- Target version set to Rendering II

Assuming detail textures will be revised in the future, this would be rather nifty for them.

- Have a pattern texture where each pixel determines which variant of the detail texture to use.
- Use a shader to first sample the pattern texture, then sample the determined variant detail texture.