GD2 – Fa ‘21

World Gen 3: Colors and Richness

# Project Administration (10):

* Add annotations to this rubric: fill in the blanks, answer relevant questions, etc. Make sure your annotated rubric accurately and thoroughly describes what you’ve built.
* Put a copy of your annotated rubric into the root folder of your project.
* The entire World Gen project is due in-class on Wednesday, November 10

# Base Requirements (73):

Procedural texturing:

* Create FOUR TerrainLayers for your Terrain.
* Write a function that textures a terrain according to your design goals, painting your terrain with your four layers.
* *Explain: What is the name of your function?* ***It’s called MakeItFancy.***
* *Explain: What are your four layers?* ***Sand, Rock, Forest, and Snow.***
* *Explain: What are the logic rules that control the placement of each layer?* ***It’s depends on the elevation.***

Fully featured in-game Proc Landcape generator:

* Upgrade one landscape-type function to be fully-featured
* Create a hotkey for your landscape-type function
* When in-game, if the player presses the hotkey, your function should:
  + (new) Delete all objects on the terrain (water, animals, plants, etc.)
  + Create a heightMap in the given style (RiverValley, Volcano, Moon, City, etc) (P1 goal)
  + Fill the Terrain with a water-like tile-type resource (P2 goal)
  + Fill three+ Niches (P2 goal)
  + (new) Texture your terrain with your four layers
* *Explain: What is the name of your fully-featured landscape function?* ***CityOfKonnor().***
* *Explain: In-game, what key will run your function?* ***Key M for creating the entire landscape with terrain layers and niches. DeleteWater (Key Z) / DeleteSheep (Key X) / DeleteTree (Key C) / DeleteNiche (Key V)***

Camera controller:

* Create a simple camera controller script, so that players can look around your landscape
* Players should be able to:
  + Freely move camera around the scene, and turn the camera in any direction
  + !! Camera controls should be smooth and friendly
* *Explain: What are the camera controls? How can the player move your camera?* ***This CamConteol allowed player to move, zoom and rotate the camera.***

Quit button:

* Add a quit hotkey, so that players can gracefully exit your world
* When players press the quit hotkey, your game should quit
* Hint: The Application.Quit() command will cause your game to quit
* *Explain: What is the quit button for your game?* ***Key G.***

# Stretch Goals:

**Complex texturing** (+2 to +20): Do one or more of the following:

* Create additional TerrainLayers, and write additional logic to paint those layers on the Terrain
* Upgrade your code to create multiple areas with a mixture of layers (Ex: grass / snow, grass / sand, grass / sand / snow, etc.)
* (hard) Upgrade your code to create areas with a \*smooth\* mixture of multiple layers. This means no hard edges. Rather, the percentage of each layer should change smoothly across the Terrain (at least in some parts).
* *Explain: What complexities did you add to your terrain texture code?*

**Create a second fully-featured landscape-type function:** (+3 to +10)

* Create a second fully-featured landscape-type function
* Create a hotkey for this second landscape-type function
* When in-game, if the player presses the hotkey key, your function should:
  + (new) Delete all objects on the terrain (water, animals, plants, etc.)
  + Create a heightMap in the given style (RiverValley, Volcano, Moon, City, etc) (P1 goal)
  + Fill the Terrain with a water-like tile-type resource (P2 goal)
  + Fill three+ Niches (P2 goal)
  + (new) Texture your terrain with your four layers
* *Explain: What is the name of your second fully-featured landscape function?*
* *Explain: In-game, what key will run your function?*

**Enrich your landscape with Survival assets** (+2 to +20):

* Import some assets from your Survival project (avatar, plants, animals, items, etc.).
* Upgrade one Landscape-type function to stock your procedural Terrains with Survival assets.
* When you run the function, it should:
  + Do all the normal things: delete objects on Terrain, create heightMap, install water, fill niches, and texture your terrain
  + (new) Place an Avatar
  + (new) Place survival assets on the landscape
* *Explain: What is the name of the landscape function that places Survival assets?*
* *Explain: What Survival assets does this function use?*
* *Explain: How does your code decide where to place the Survival assets?*
* *Explain: If there are controls for your survival assets, what are the controls?*

**Enrich your landscape with non-Survival assets** (+2 to +20):

* Find or create some other type of assets: rocks, trees, houses, etc. Whatever fits your theme.
* Extra respect for interactable assets
* Upgrade one Landscape-type function to stock your procedural Terrains with these assets.
* When you run the function, it should:
  + Do all the normal things: delete objects on Terrain, create heightMap, install water, fill niches, and texture your terrain
  + (new) Place these other assets on the landscape (stretch goal)
* *Explain: What is the name of the landscape function that places non-Survival assets?*
* *Explain: What new assets does this function use?*
* *Explain: How does your code decide where to place these new assets?*

**Other** (+1 to +20): Something else on the theme of procedural level generation

* *Explain: What did you build?* ***I give lots of hotkeys for creating landscapes and fill niches, so that player can use in the game step by step.***
* *Explain: What does your player need to do to appreciate this feature?*
* ***ManySteps (Key P)***
* ***Add TerrainLayers (Key O)***
* ***Install Water into the landscape (Key I)***
* ***Add Cyrstal Ai into the landscape (Key U)***
* ***Add Pink Sheep Cube into the landscape (Key Y)***
* ***Add trees into the landscape (Key T)***
* ***Reset terrain (Key L)***
* ***Smooth the terrain (Key K)***