Delivery 2

Description

On this delivery you are given a Unity scene with no materials or shaders created. You are asked to apply the techniques we've seen during the semester to bring it to life.

To accomplish this, you will be given a table of exercises with 5 different sections. Each section consists of a series of exercises. Each exercise has a set value of points that will be awarded for its completion, but there's a maximum amount of points possible for each section.

At least one exercise of each section must be completed, otherwise the delivery won't be corrected.

The last section is a wild card, where you can choose any exercise from another section to make it count even if the maximum amount of points on that section has been obtained.

Any of these exercises can be done either through shader graph or traditional shader code, but if shadergraph is used you will need to also deliver an explanatory document on your graphs, explaining for each one it's pseudocode and how it relates to the actual nodes.

Delivery

You will be asked to deliver a github repository that isn't bigger than 1GB containing:

- Your project with all the implementations
- A read me document that states:
    - Team members
    - Table of exercises with the ones you have selected to implement marked
    - Explanation on the implementation, where to find it, both on the scene and project.
- If using shader graph:
    - Graph explanation document containing the pseudo code for each graph and the relation to the nodes.

Table of exercises

Post processing		Max points: 3
Color Space Handling	Make textures in Unity assume linear input. Handle yourself the gamma correction for your PBR shader (not in post processing, in the real shader).	0.5 points
Tone mapping	Make an Eye adaptation effect based on screen luminance without using the Unity post process (implement all the steps yourself)	2 points
Vignetting/Blur/Pixelate	Using your own implementation create a context aware implementation.	1 point
Bloom	Using blur implement a bloom effect and make it work even when using your own pbr shader	2 points
Shader in Unity		Max points: 3
Adding features to our PBR shader	Make your own PBR Shader cast and receive shadows (using unity shadow pass) & be able to use textures.	1 point
Adding reflections	Make the shader be able to receive data from the reflection probes on the scene. If reflections are correctly sampled taking into account PBR values this exercice is worth 2 points.	1 or 2 points
Implement multiple light handling & spotlight	MAke your own PBR Shader react to more than 1 light and implement a new type of light for it: spotlight	2 points
Create materials for the whole scene using your material	Using your shader, create materials that showcase diverse physical properties & any other extra implementations made. Only opaque & objects not used for other exercises are required to use your shader	2 points
Compute Shaders		Max points: 2
Make a GPU particle system	Create a simple GPU particle system for some effect on the scene and calculate it's motion using a compute shader (not using shader GPU particles)	1 point
Boids Implementation	Create a Boids AI that manages the	2 points

	movements of a group of animals in the scene. They should follow all the classic boids rules (avoidance, cohesion, alignment) & react to the scene geometry (don't allow your Boids to go through stuff).	
Additional Implementations		Max points: 2
Vertex shader animation	Create a vertex shader that animates a certain object (or objects) of the scene. Complexity will be taken into account. Explain on the read me what effect you want to create and how you do it.	1 point
Texture animation	Using uv displacement create an animation on some texture of the scene. If only a simple animation is done punctuation will be 0.5. If extra animations, blendings or other effects are included the maximum punctuation can go up to 1 point	0.5 points or 1 point
Triplanar textures	Implement this kind of texturing in some scene object. If only colors or textures are swapped 0.5 points max, if other implementations are created punctuation can go up to 1 point	0.5 points or 1 point
Texture Blending	Create a texture blending effect either by vertex color, texture or other factor. Complexity will be taken into account.	1 point
Emissive Mat	Create an emissive material that affects the scene meaningfully. Explain in the READ ME de desired effect	0.5 points
Transparent Mat	Create a transparent material that affects the scene meaningfully. Explain in the READ ME de desired effect	0.5 points
Rogue Exercise		Max points: 2
Any of the previous exercises		