Mecaniques avançades de joc - Shaders Delivery 1

Introduction

You are asked to modify a unity project to include the concepts presented in class, specifically PBR rendering and postprocessing techniques.

Requirements (0 points)

Please make sure you comply with the following requirements:

1. File organization. You should provide a github repository where the user davidperezgallego@enti.cat is included and that includes all necessary files to execute the unity editor implementation.
2. Project Correctness. You are expected to upload a working project to github, it should work on my computer out of the box. Make sure to check that the repo works before submiting the delivery.

Requirements 1 and 2 are mandatory. This delivery will not be corrected if your repository does not satisfy them.

Exercise 1. Post Processing (4 points)

You are asked to include 3 diferent post processing effects from the ones seen in class. Both bloom or blur count as 2 post processing effects because of their complexity (you only need to implement another post process if you implement one of this 2). Additionally, you could implement another postprocessing effect that you want to investigate, but in this case you should include an explanation on the desired effect, implementation and reasoning if it counts as 1, 2 or 3 (Consult with me beforehand).

In this exercice I will evaluate not only the base implementation of the postprocess, but also how well integrated with the engine it is. This means that I'll take into account:

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- That the postprocess works with the Postprocessing volumes system

- That the postprocess has a smooth transition when entering a volume

- That the postprocess has as many customization parameters as posible in the editor (without having to modify any code).
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Exercise 2. PBR Rendering (6 points)

You are asked to modify the existing phong shader specular component to a BRDF function. For this exercice you have to modify the shader while keeping it working with both types of light present in the scene. Then, you have to create 3 different parametrizations showing of the capabilities of your new specular component. You can decide which model (function) for each component of the BRDF function you want to use.

In the readme you are expected to explain your implemenation of the Fresnel, Distribution & Geometry equations choosen.