Assignment5

Off-screen Rendering & Post-Processing

Francesco Andreussi
francesco.andreussi@uni–weimar.de

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Deadline

Wednesday, 5 February 2020 at 23:55.

Task

- Create a Frame Buffer Object with a texture as Color Attachment and a Renderbuffer as Depth Attachment. (20%)
- Bind it and render the scene to it and not to the Default one. (25%)
- Apply the Framebuffer Color Texture to a full-screen quad and render it to the screen (to the Default Framebuffer). (25%)
- Comment the code extensively. (10%)
- **Additional Task**: Implement the Post-processing effects discussed in class, allow them to be toggled from the keyboard and allow all the possible combinations (20%).

Tips & Suggestions

- Take in mind that the result of this assignment should appear as the old one.
- In order to render to screen, do not forget to bind again the Default Framebuffer (the number 0).
- The Framebuffer Attachments must be cleared every frame before drawing them.
- Format the Framebuffers Attachments in the `update_projection()`, so they are resized with the window.

- Implement **Luminance Preserving Grayscale** (key 7), **Horizontal Mirroring** (key 8), **Vertical Mirroring** (key 9) and **Blur with 3x3 Gaussian Kernel** (key 0).
- Find the best ordering for the post-processing effect in order to have the best effect with the minimum "effort".